

Master In Teaching Program



2011 Cohort



The Evergreen State College
2700 Evergreen Parkway NW
Olympia, WA 98505

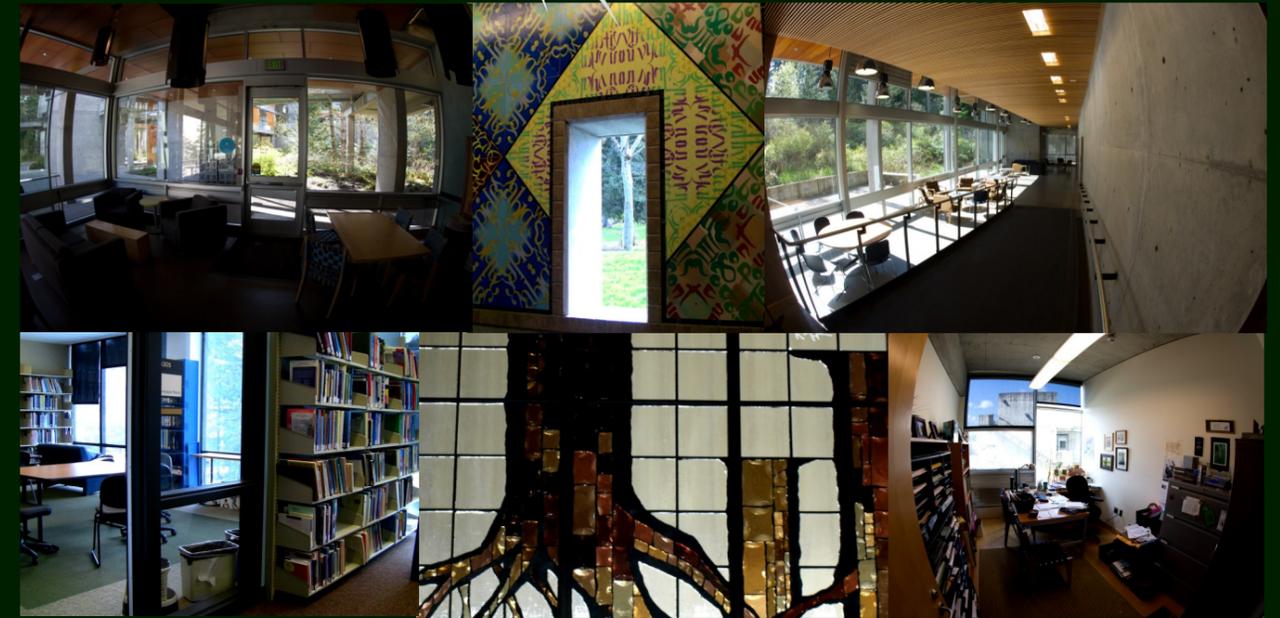
www.evergreen.edu/mit



Master in Teaching Program: 2009 - 2011 Conference Proceedings

Master in Teaching Program: 2009 - 2011

Thinking Globally, Teaching Locally: Educating for Active Citizenship



Conference Proceedings of Annual Presentation of Master's Papers

March 8-9, 2011

Conference Proceedings

Master in Teaching Program 2009 - 2011

Thinking Globally, Teaching Locally:

Educating for Active Citizenship

The Evergreen State College

March, 2011: Olympia Campus, Olympia, WA

CO-EDITORS

Jennifer Pasternak

Joseph Boyer

©2011: Master in Teaching Program

The Evergreen State College

Olympia, WA 98505

COVER DESIGN

Jennifer Pasternak

PHOTOGRAPHS

Christopher Rudesill

Jennifer Pasternak

TABLE OF CONTENTS

| | |
|---|-----|
| Introduction | 1 |
| Key Note Address by Wayne Au | 3 |
| <i>Of Automaton and Activists: High-Stakes Testing, the Control of Teaching, and the Resistance of Teachers</i> | |
| Papers | |
| Kefi R. Andersen..... | 13 |
| <i>Lack of Engagement: Strategies to Create Intrinsic Motivation in Writing</i> | |
| Brad H. Boer..... | 28 |
| <i>Creativity and Community: Multicultural Practices in Visual Arts Education</i> | |
| Adriana Elizabeth Caviedes-Guillén..... | 44 |
| <i>Impact of Students' Emotions on Behavior and Academic Outcomes</i> | |
| Rachele Chertok..... | 55 |
| <i>The Role of Feedback in the Self-Efficacy of Elementary Students: 'Good Job' is Not Enough</i> | |
| Toby de Luca..... | 69 |
| <i>What are Effective Classroom Management Strategies that Maximize Student Engagement?</i> | |
| Marc C. DeArmond..... | 83 |
| <i>Effects of Strict and Lenient Grading on Student Learning</i> | |
| Holly M. Deatherage..... | 96 |
| <i>Differentiation through Student-to-Student Interaction</i> | |
| Jeremy T.M. Dempsey..... | 109 |
| <i>Focused Engagement for Today's Classroom</i> | |
| Monear Fatemi..... | 122 |
| <i>Strategies for Success: At-Risk Youth in Heterogeneous Classrooms</i> | |
| Michael T. Fekete..... | 136 |
| <i>Effects of In-Classroom Competition on Student Motivation and Learning</i> | |
| James Gardner..... | 146 |
| <i>The Gender Achievement Gap: Motivation, Identity, and Culture</i> | |
| Kimberly Gregg..... | 159 |
| <i>Effects of Urban Native American Identity on Native Students in Public Schools</i> | |
| Jennifer A. Hamilton..... | 177 |
| <i>Increasing Access to Science for English Language Learners: It is More Than Just Reducing Achievement Gaps</i> | |
| Sasha Hawthorn..... | 190 |
| <i>Collaborative Learning in the Mathematics Classroom: What You Think Matters</i> | |
| Leif Hedenskoog..... | 203 |
| <i>Correlations Between Multicultural Education and Ethnic Identity Formation</i> | |
| Carrie Hockman..... | 215 |
| <i>Art Integration's Impact on Students' Intrinsic Motivation and Engagement</i> | |
| Andrew Lawrence Hoy..... | 228 |
| <i>Strategies Integrating Social Studies and Language Arts at the Secondary Level</i> | |
| Anne A. Hundley..... | 243 |
| <i>Scaffolding Interdependence for Group Work</i> | |

| | |
|--|-----|
| David Thomas Hunter..... | 257 |
| <i>Principles of Effective Arts Integration</i> | |
| Reyna A. Jasmer..... | 268 |
| <i>Increasing Participation in Student-Centered Discussion: Principles to Inform Practice</i> | |
| Deborah S. Jordan..... | 279 |
| <i>The Effects of First Language Proficiency on Additional Language Acquisition</i> | |
| Dominic P. Kehoe..... | 291 |
| <i>Interdisciplinary Science Education</i> | |
| Amanda R. Kirklin..... | 303 |
| <i>Teaching in an Inclusive Environment: Effective Classroom Strategies for Students with Learning Disabilities in Mathematics</i> | |
| Ryan T. Leacy..... | 315 |
| <i>Effects of the Practices Within Advancement Via Individual Determination (AVID) on the General Secondary Classroom</i> | |
| Sarah Maiava..... | 327 |
| <i>Sustaining the Highly Mobile: Military Parents with Elementary Students</i> | |
| Linda Mewhirter..... | 339 |
| <i>Teacher Authority, Questioning Practices and Student Beliefs: Increasing Involvement in Group Discussions</i> | |
| Andrew W. Olmsted..... | 351 |
| <i>Facilitating the Development of Abstract Thinking in Adolescents</i> | |
| Nicholas P. O'Neill..... | 364 |
| <i>Increasing Student Intrinsic Motivation: How to Encourage Student Engagement and Ownership in the Learning Process</i> | |
| Douglas G. Richert..... | 379 |
| <i>Examining Teacher's Differential Treatment</i> | |
| Melinda I. Ross..... | 391 |
| <i>Grief in Adolescence: Classroom Practices That Support the Adolescent Grieving Process</i> | |
| Cleome P. Rowe..... | 403 |
| <i>Building Sustainable Communities Using Place-Based Learning</i> | |
| Chris Rudesill..... | 420 |
| <i>Development of Academic Self-Efficacy through Mastery of Self-Identity</i> | |
| Challys Samson..... | 432 |
| <i>Reluctant Student Participation in ELL and Native English Speakers: Causes and Improvement</i> | |
| Joshua P. Simpson..... | 446 |
| <i>The Impact of Masculinity and Gender Norms on Academic Performance</i> | |
| Allison L. Smith..... | 459 |
| <i>Strategies to Support Students Learning English as an Additional Language</i> | |
| Kathleen Dare Stidham..... | 470 |
| <i>Access to Opportunity: Some Digital Literacy Issues in Education</i> | |
| Kelsey R. Sutich..... | 484 |
| <i>Understanding Student Engagement: Contexts for Teacher Interventions</i> | |
| Christie Q. Tran..... | 499 |
| <i>Reconstructionist Multicultural Art Education</i> | |
| Chelsea R. Whitaker..... | 515 |
| <i>Strategies to Encourage Student Agency through Addressing Intelligence Beliefs, Metacognition, and Autonomy Support</i> | |

Master in Teaching Program: 2009-11
“Thinking Globally, Teaching Locally: Educating for Active Citizenship”

Conference of Master’s Paper
March 8-9, 2011

The Evergreen State College
Olympia, Washington

Introduction to Conference Proceedings

The papers in this collection represent research conducted during 2010-11 and presented at a conference March 8-9, 2011, on the Evergreen State College campus. The topic of each paper emerged from pedagogical questions that arose during teacher candidates’ Fall 2010 student teaching internships. Based on their research questions, these 39 graduate students next conducted literature reviews that included a minimum of 10 empirical studies. The papers were structured and written in accordance with the documentation style of the American Psychological Association. The setting at which students presented their papers were under conditions that mirrored those of a professional conference. All presentations were supported by computer projection of key points and concluded with students fielding questions from conference attendees.

Graduates of the Master in Teaching program both opened and closed this 2-day conference. Dr. Wayne Au (MiT ’96), now an assistant professor at the University of Washington-Bothell and a co-editor of *Rethinking Schools*, gave the conference keynote address. Dr. Au’s paper, "Of Automaton and Activists: High-Stakes Testing, the Control of Teaching, and the Resistance of Teachers," is located at the beginning of these proceedings.

The conference concluded with a panel of four Master in Teaching program graduates who are current public school teachers. Speaking to the topic “On the Importance of Being Professionally Active,” this inspirational panel included Katie Baydo-Reed (MiT ’06), Nathan Bowling (MiT ’06), Travis Davio (MiT ’06), and Kate Trafton (MiT ’03).

We invite the reader to take time to survey the array of pedagogical issues that teacher candidates tackled in their research. As you will observe, this group of teacher candidates understands very well the importance of research as a basis to inform the myriad pedagogical decisions they will encounter in their teaching careers.

Congratulations to the MiT class of 2011 for work well done!

Sincerely,

Jana Dean

Sonja Wiedenhaupt

Michael Vavrus

The Faculty Team for the Master in Teaching cohort 2009-11

Key Note Address by Wayne Au at the Evergreen State College MIT Student Conference, March 8, 2011

Of Automaton and Activists: High-Stakes Testing, the Control of Teaching, and the Resistance of Teachers

Today I want to talk about how the high-stakes test-based accountability movement has amounted into a full-scale assault on teachers as credentialed, knowledgeable, and well-educated leaders in their classrooms, schools and communities. But let me put it more bluntly than that: Really I'm upset that our education policy assumes that teachers are stupid and incompetent.

I see the hurt such insult inflicts on the pre-service and in-service teachers with which I work. The pain of insult is revealed in their eyes as they talk about the state of the curriculum in their schools, the refrain they hear from district officials is maddeningly consistent: more standards, more tests, more pacing guides, more scripted instruction, more administrative threats, and more students in the classes they teach. These points are often soon followed by remarks about how all of this "more" is being done with less: less resources, less space for non-tested subjects, less time to connect with kids and their communities, less pay, and less creativity in teaching and learning.

This is the pedagogic legacy of No Child Left Behind, high-stakes testing, and the accountability movement as we know it today. As teachers talk about how these reforms are affecting teachers in their schools, increasingly I hear how they feel like they have less and less power, how they feel forced to bend to the will of the tests or face low evaluations and potential job loss, how they are not viewed or treated as trained, credentialed, and practiced professionals who know how to teach.

Testing's Zero Sum Curriculum

So let's start with where we are at today with the state of teaching within regimes of high-stakes testing. In my own research as well as the research of countless others, the findings support what many classroom teachers know from their day-to-day experiences:

Nationwide, the research surrounding the tests is fairly conclusive: High-stakes, standardized testing is narrowing the curriculum and encouraging bad pedagogy. For instance, a 2006 report on nationwide survey completed by the Center on Education

Policy (CEP) found that 71 percent of the districts studied cut at least one subject to increase time spent on reading and math as a direct response to the high-stakes testing mandated under No Child Left Behind.

As one Colorado public school teacher puts it, "Our district has told us to focus on reading, writing, and mathematics. Therefore, science and social studies . . . don't get taught."

While test supporters may laud these increases in time spent on tested subjects, the reality is that such increases also represent a loss, because when it

comes to high-stakes testing, the curriculum is a zero sum game: Test-induced increases in math and English/language arts instruction come at the cost of reductions in other subjects.

Low performing students and students of color feel the zero sum curriculum particularly sharply. As the CEP reported in 2006, in some districts in California the lowest performing students have had to take extra classes in reading and math, which has meant that these students have had to completely cut science and social studies from their course load.

In this same study, the CEP found that 97 percent of high-poverty school districts, which are largely populated by non-white students, have instituted policies specifically aimed at increasing time spent on reading. This is compared to only 55 percent to 59 percent of wealthier, whiter districts.

In this way, instead of improving the educational experiences of low income and students of color, NCLB and its focus on high-stakes testing creates more restrictive, less rich educational environments for the very students proponents claim to be helping.

Teaching Under the Yoke of Testing

To add insult to injury, the subjects that are being taught within our testing dystopia are ultimately being ruined because the high-stakes tests push teachers to use bad pedagogy and teach more meaningless content. For instance, in a 2003 nationwide survey, researchers found that 76 percent of the teachers in states with “high” stakes testing and 63 percent of the teachers in their study from states with “low” stakes testing reported that their state testing programs were increasing teacher centered

pedagogies, rote memorization of materials, and lecturing.

As one Massachusetts Language Arts teacher, commenting in response to the effect of their state tests put it, “You know, we’re not really teaching them how to write. We’re teaching them how to follow a format. . . . It’s like . . . they’re doing paint-by-numbers.”

As infuriating as it is to see how high-stakes testing is negatively affecting all teachers, however, the research on its impact on newly credentialed teachers is particularly disheartening.

Arthur Costigan, assistant professor of education at Queens College CUNY, found in his research that the tests became the focus of the new teacher’s first year of instruction, that this type of teaching was having an adverse effect on their students and their practice, and that teachers developed a sense of powerlessness in the face of the amount of testing and the pressures involved.

Many of the teachers in Costigan’s study felt that “a very real culture of testing has been created in the schools and districts in which they teach...” and that they were “unable successfully to negotiate between a testing curriculum and personal best practice.”

The culture of testing negatively affects young teachers of color as well. In one case an African American teacher who recently graduated from her teacher education program was studied Jane Agee, assistant professor of Language and Education at SUNY Albany. This teacher entered the profession proudly, with the expressed goals of teaching multicultural content in her classes, teaching in ways that would help her students of color succeed, and becoming

an agent for positive change in her school.

In response to the mounting pressures of the high-stakes tests, however, this young African American teacher gave up her more activist and equity-minded goals in order to teach to the tests.

And this is one of the real tragedies of high-stakes testing. The first years of teaching are oftentimes precarious as new teachers focus not only on how to manage their tremendous workloads, but also on figuring out just what types of teachers they want to and can be. It is the time where they are developing their professional habits and their identities as teachers.

However, the tests are choking off the aspirations of our new teachers, killing many of their sensibilities about how to best educate all children before these sensibilities even have a chance to be nurtured, developed, and grown.

Teaching and the New Taylorism

When looked at historically, this controlling of teaching seems like a form of what might be called “New Taylorism” in teaching. This idea is based on how teaching to the test today parallels the guiding vision from over 100 years ago when public education was first established in the United States. In the early 1900s, schools were constructed around the model of the industrial capitalism, especially the ideas of large scale, efficient factory production associated with scientific management. One of the pioneers of bringing scientific management to education was John Franklin Bobbitt, who was a pioneer in the application of Frederick Taylor’s concepts of scientific management in factory production to

systems of educational management and planning.

In Frederick Taylor’s model, efficient production came from the factory managers’ ability to gather all the information possible about the work which they oversaw, systematically analyze it according to ‘scientific’ methods, figure out the most efficient ways for workers to complete individual tasks, and then tell the worker exactly how to produce their products in an ordered manner – a process more popularly known as “Taylorism.”

Applying Taylor’s concepts to education, in his 1913 essay entitled, “The Supervision of City Schools,” Bobbitt explains:

The new and revolutionary doctrine of scientific management states in no uncertain terms that the management, the supervisory staff, has the largest share of the work in the determination of proper methods...Under scientific management, the supervisory staff, whose primary duty is direction and guidance, must therefore specialize in those matters that have most to do with direction and guidance, namely, the science relating to the processes. (pg. 52-53)

As for how teachers fit into this model of scientifically managed education, Bobbitt explains that they must be required to follow the methods determined by their administrators because they are not capable of determining such methods themselves:

The burden of finding the best methods is too large and too complicated to be laid on the

shoulders of the teachers... The ultimate worker, the teacher in our case, must be a specialist in the performance of the labor that will produce the product. (52-53)

And finally, Bobbitt declared that principals and other administrators should use tests to determine “weak” and “strong” teachers as well as rates of teacher pay or access to other privileges.

Bobbitt maps the metaphor of Taylorism on to schools in a very simple and neat way. Students are the ‘raw materials’ to be produced like commodities according to specified standards and objectives. Teachers are the workers who employ the most efficient methods to get students to meet the predetermined standards and objectives. Administrators are the managers who determine and dictate to teachers the most efficient methods in the production process. The school is the factory assembly line where this process takes place.

Similar to the standardization of factory production in the early 1900s, which allowed for increased control over both workers and products, the standardization of teaching through testing allows for increased managerial and administrative control over teachers (labor) and students (products) in the process of education. Here’s how literacy scholar Jabari Mahiri describes in his research in one San Francisco Bay Area school district:

Moment-to-moment, the curriculum controls teachers' and students' time and activities, and it does not require a trained and skilled teacher with disciplinary, pedagogical, and cultural knowledge to implement it as long

as the students submit....Rigidly enforced and timed, piecemeal tasks are required of teachers and students, with few accommodations for diverse styles of learning or teaching. Administrators would be able to come into classrooms and check to see that their ‘workers’ are on the precise lesson, page, and the exact task prescribed for a given time slot. (82)

Mahiri’s above point speaks to how teachers are experiencing a form of accountability that encourages submission instead of engagement, surveillance and discipline instead responsibility and ownership of what happens in classrooms.

Submitting To The Scripted Curriculum

The teachers in my courses are often most disheartened (and appalled) when they are handed scripted curricula and pacing guides by the district and are told to teach to the tests. It’s the ultimate in disempowerment, because, as one of my math teachers recently remarked, “It’s like instant curriculum. You just add water...No actual teaching required.” Their creativity is stifled. Their professional expertise is disregarded. Their voices are muffled. In many ways they are being asked not to think in their teaching: The high-stakes testing, scripted curricula, and scripted teaching asks them to play dumb.

Teaching in the New Taylorism is perhaps best illustrated through the rise of scripted curriculum. Under such programs, teachers are mandated to use pre-packaged curricular materials that require no creative input or decision-making on the part of the teachers,

literally providing verbal scripts that define and limit what teachers can say as they teach. Most obvious are scripted reading programs grounded in what federal officials in the past have called “scientifically-based” or “evidence-based” research: those reading programs based on direct instruction and phonics which are claimed to have been ‘scientifically’ proven to be effective.

Despite the fact that reading researchers such as Gerald Coles have found the ‘science’ behind this research is suspect and easily refutable, because of the United States’ government’s official definition, only those programs that apply completely scripted, direct phonics instruction have become increasingly popular in schools and districts pressured to raise their reading test scores.

Consequently, teachers in many low performing districts have been required to use commercially packaged reading instruction programs such as Open Court, which tell teachers exactly what page to be on for each day as well as every word and line they are allowed to say while teaching reading, all in preparation for the high-stakes testing.

We can see the stringent language of such scripted curricula by looking at the *Houghton Mifflin Reading: A Legacy of Literacy*, California Teacher’s Edition, grade 1, textbook as an example. This reading textbook gives day-by-day instructions for teachers, pre-structuring all activities and leaving little to no room for their own planning or creativity (e.g., projects, group instruction, etc.).

The scripted instruction starts from the beginning, where in the introduction teachers are directed to do the following:

Read aloud the first page and stop before the last paragraph. Say: *Your state is California. California has set standards for me and you to help you learn this year. Let’s learn more about these standards.* Now read the last paragraph... These pages give examples of standards and who one way they are posted in the books. Explain that, for each story, the standards tell children what they are learning. Say: *When you come into school, you don’t get to your classroom all of a sudden. You walk there, one step at a time. Standards are the same way. You don’t have to know them all at once. You’ll learn them as you go.* (n.p., original emphasis)

Such scripted direction continues throughout the text. For instance, in another section on phonics, teachers are similarly directed:

- Say *cat*. Ask: *What sound do you hear at the beginning of cat? What letter should I write in the first box? Write c.*
- Ask: *What sound do you hear next in cat? Call on a child to come to the board and write a in the second box.*
- Ask: *What sound do you hear at the end of cat? What letter should I write in the last box? Write t.* (T27, original emphasis)

The textbook itself is teeming with similar examples of both highly scripted instruction and page-by-page directions for what each teacher must be covering in what order and on what day.

While it is true that teachers can and do resist such scripting, sometimes under threat of losing their jobs, this

example is a clear illustration of outside experts conceiving the “best,” most efficient methods of teaching reading and of teachers being coerced to use these methods under threat—a process that Gerald Coles calls the end of “wobble room” in reading instruction.

Such scripted curriculum programs have not just been relegated reading and Language Arts instruction, however. For example, Julie Cwikla’s research describes a case where a scripted direct instruction (SDI) mathematics program was implemented with the specific goals of raising test scores and providing easy evaluation of teaching by administrators. The script for this mathematics program was so rigid that, Cwikla explains, “If a student had a question, the SDI instructed teachers to repeat the script just previously read.” Such scripted curricula makes teachers, in the words of critical education scholar, Michael Apple, “alienated executors of someone else’s plans” and represent the pinnacle of teaching in the New Taylorism.

And here lies a central contradiction presented to the teaching profession by policy regimes constructed around high-stakes, standardized tests: Teachers are being held more and more “accountable” for test scores and student achievement while they are being required to take less and less responsibility and ownership of their curriculum, pedagogy, and what actually happens in their own classrooms. It’s almost ironic. Teachers are bearing the sole blame for student test scores, even as these same teachers aren’t being allowed to take responsibility for their own teaching. And this issue stands outside of the very real technical problems for using tests to evaluate student learning or teacher effectiveness.

Standardized testing and the educational assembly line

It is critical to highlight how standardized tests themselves that enable teachers and students to be put into the scientifically managed educational assembly line because they turn humans into numerical objects. As educational scholar Pauline Lipman explains in her book *Chicago Public Schools, High Stakes Education*:

Students, as well as teachers, with all their varied talents and challenges, were reduced to a test score. And schools, as well as their communities, in all their complexity—their failings, inadequacies, strong points, superb and weak teachers, ethical commitments to collective uplift, their energy, demoralization, courage, potential, and setbacks—were blended, homogenized, and reduced to a stanine score... (172)

It is a function of standardized tests to quantify student knowledge and understanding into a number. This quantification lies at the heart of the measurement itself, which turns real people and real social conditions and contexts into easily measurable and comparable numbers and categories. Further, the process of reducing students to tests scores, essentially abstracting a number with which to define them in relation to other students, requires that their individuality be omitted, that their variability be disregarded. Standardized tests thus, by definition, literally objectify students by reducing them into numerical objects for comparison. This objectification is the key link to understanding the fundamental connections between systems of

standardized testing and the application of the logics of the New Taylorism: By reducing students to numbers, standardized testing creates the capacity to view students as things, as quantities apart from their human qualities.

In this way, standardized testing commodifies students, teaching, and education. It is through this commoditization that standardization enables systems of education to be construed as systems of commerce operating along the logics of capitalist production which require products (commodities) to be made, assessed, compared, and exchanged on the market. Indeed, as Michael Apple argues, such standardization is a requirement for the marketization of education because comparison of educational commodities within systems of school ‘choice’ require a standard from which comparisons may arise. Thus, we see how high-stakes, standardized testing, at its functional core is foundational to the view that schools are factories where teachers-as-laborers work on an efficiently Taylorized educational assembly line ‘producing’ students-as-commodities, and whose value as teachers, students, and schools is measured and compared vis-à-vis the tests.

Let me shift focus here by thinking about education policy as a form of curriculum, one that communicates particular ideas, concepts, and lessons about educational practices, power, and decision-making to students and teachers alike. Such a shift allows us to ask a simple question: What does our education policy teach us about how teachers and the teaching profession are viewed by policymakers and the business community? Based on everything I’ve talked about here, we

could then say that systems of high-stakes testing teach us a few key lessons:

Three Lessons of High-Stakes Testing for the Teaching Profession

Lesson 1: Teachers Are Not Competent

The first lesson of high-stakes test-based education policy is that teachers cannot be trusted, as professionals, to effectively determine the best ways to educate and assess students. Rather, teachers are compelled within systems of high-stakes testing to adopt teaching methods strictly for the tests, and oftentimes against their own judgment of what constitutes best practice. In the process, teachers are thus feeling what Stephen Ball refers to as the “terrors of performativity” as their identities become increasingly defined by the test scores themselves, being labeled as “good” or “bad” teachers (and, by extension, even “good” or “bad” people) depending on whether or not their students perform well on high-stakes tests. Consequently we see teachers’ sense of powerlessness has increased in the face of such testing, with subsequent dips in morale .

Lesson 2: Diversity is Bad

The second lesson of the high-stakes test-based education policy is that diversity, in various forms, is detrimental to education. For instance, as discussed above, research has found that subject matter diversity, as well as the diversity of instructional delivery, has decreased as a result of high-stakes testing. In this sense, knowledge and pedagogy is becoming standardized and homogenized under the influences of high-stakes testing. This has also amounted to an increased push to squeeze multicultural knowledge out of

the curriculum because it isn't tested. Thus we see high-stakes tests functioning to force schools to adopt a standardized, non-multicultural curriculum, that ultimately silences the "voices, the cultures, and the experiences of children" (McNeil, 2000, p. 232), particularly if those voices, cultures, and experiences fall outside the norms of the tests. In this way, students' lives, in all their variation, are effectively thrown out, as schools press to structure learning to fit the standardized curricular norms established by the tests, literally making their schooling subtractive.

Lesson 3: Local Conditions Do Not Matter

The third lesson of the high-stakes test-based education policy is that locality doesn't matter. This manifests in two ways. First, from the level of democratic participation, local contexts and local voices are not valued within high-stakes tests. Here, local actors – in this case teachers and students – have significant amounts of their power evacuated by policy regimes of high-stakes testing, as school, district, state, and federal policymakers and administrators above them in the institutional hierarchies use their authority to both surveil and control what is happening in classrooms. Second, is the commoditisation of students and learning. As I discussed earlier, in order to arrive at a number to describe a student, in order to quantify a student's qualities in a standardized form, the tests require that we essentially separate a student from their local contexts, that we think of them abstractly, that we idealize them apart from their local social and educational

conditions in order to make comparable meaning from test scores.

So the next time you hear Arne Duncan or the CEO of a major corporation push to use test scores to hold teachers "accountable," be clear on one thing: They don't think very highly of you as a professional.

Resistance and Redefining the Teaching Profession

Okay, I know I've been all doom and gloom, all fire and brimstone up until this point. But as I said at the beginning of my talk, I'm pissed off about this. I've been a public high school teacher, and even though I now have a PhD, I still identify very strongly with K-12 teachers. I know they are on the front lines of our crumbling system of public education, and I certainly know that they deserve better than they are getting.

And I think that, ultimately, we all know better. We know that teachers are not mindless automatons, robots programmed simply to perform the next pedagogical task on the educational assembly line. We know that no matter how hard wrong-headed policies push us in wrong-headed directions, teachers are resisting and fighting back. So I want to end my talk with some examples of how teachers are redefining the teaching profession as leaders and activists. But I'm not talking about teachers formally becoming leaders in their districts as administrators or anything like that. Instead, I'm talking about examples of teachers taking leadership, not asking for permission from their principals or districts, and simply organizing against testing and for better schools.

First I'll talk about the Association of Raza Educators. They started in San Diego a few years back, and now they

have a large chapter in Los Angeles and a small but growing chapter in Oakland. The Association of Raza Educators organizes teacher study groups, annual conferences, classes for students, and community activist campaigns – all with the goals of consciousness raising and meeting the needs of Latino students and their communities. They have no sanction from district authorities. They could care less. Instead they take their sanction from their community and advance a progressive politics of student, community, and teacher empowerment.

The same can be said of San Francisco Teachers 4 Social Justice [SLIDE]. Over 10 years ago a group of social justice oriented teachers in the San Francisco Bay Area decided to organize a conference where folks could share curriculum and work they are doing in their classrooms and schools. Last year this free, one day, teacher organized conference drew 1600 participants from around the country, and had keynote addresses delivered by nationally recognized scholar activists. In addition to their conference, San Francisco Teachers for Social Justice also does teacher led study groups on issues such as school discipline and high-stakes assessment. Again, T4SJ has no official sanction from the district. They don't need it. Instead they muster their resources and just make things happen and have since become a powerful organization working for progressive social and educational change.

As yet another example, 25 years ago some teachers in Portland, Oregon who wanted to figure out how to implement critical pedagogy in their practice started meeting. Now there is a vibrant and thriving Portland area Rethinking Schools group that can draw hundreds of participants to speaking

events and that holds regular curriculum development groups. More recently, the Portland Rethinking Schools group teamed up with similar groups of teachers from Olympia and Seattle, Washington to host a Northwest Teaching for Social Justice Conference. Last year, in only its third year, this conference drew over 700 educators from the region, and one of my favorite critical educators, Sonia Nieto, offered an excellent keynote. This year the conference is in Seattle, and we expect there to be well over 1,000 participants. We invite you to come!

Now, these are not the only groups of teachers around the country doing progressive and radical educational and community work. Chicago Teachers for Social Justice also holds a well attended curriculum fair. The New York Collective of Radical Educators is also doing good work. So is Education for Liberation, a growing national network of transformational educational organizations.

What all these groups around the country have in common is that they consist of teachers getting together, forming organizations, and using their collective power to shape education not only in their classrooms, schools, districts and communities, but to shape education regionally. And, they don't ask for permission or wait for some district official to allow them to do what they do. They simply recognize that they have the power...and they take it.

Teacher power. Say it to yourself. Teacher power. Let it sink in. It is the idea that I want to leave you with today, that you are powerful. Specifically I'll turn to the words of educator George Counts, who wrote around the time of the Great Depression and in response to the failures of industrial capitalism to

meet the needs of the working poor. Almost 100 years ago Counts saw schools as an incredible source of power for progressive social change, and better still, he also saw teachers as being the prime movers in this effort. In his book, *Dare the Schools Build a New Social Order*, he says, quote:

“[T]eachers, if they could increase sufficiently their stock of courage, intelligence, and vision, might become a social force of some magnitude....Through powerful organizations they might at least reach the public conscience and come to recognize the larger measure of control over schools than hitherto....”

When I talk to teachers these days, here's what I always tell them: Despite all of the issues and difficulties in the teaching profession that I've discussed here today, I want you to leave here today with Counts' words lingering in your head. I tell them, remember, you are all teachers. You are committed to serving your students and communities, AND you are powerful. Don't ask for permission. Get together with your colleagues and school communities. Organize yourselves. Seize the power and authority you have in you as individuals and collectively as committed educators working to improve the world. I remind them that they have the power to become a social force of some magnitude. That they can fight the tyranny of the tests and build classrooms and schools that are equitable and just. And then remind them to let THAT activism come to define the teaching profession.

Thank You

Note: The arguments developed in this talk are developed more fully with academic citations in the following articles and books:

- Au, W. (2011). Teaching in the new Taylorism: High-stakes testing and scientific management in the 21st century curriculum. *Journal of Curriculum Studies*, 43(1), 25-45.
- Au, W. (2010-2011). Neither fair nor accurate: Research based reasons why high-stakes testing should not be used to evaluate teachers. *Rethinking Schools*, 25(2), 34-38.
- Au, W. (2010). The idiocy of policy: The anti-democratic curriculum of high-stakes testing. *Critical Education*, 1(1). Retrieved January 18, 2010 from <http://ml.cust.educ.ubc.ca/journal/v1n1>.
- Au, W. (2009). High-stakes testing and discursive control: The triple bind for non-standard student identities. *Multicultural Perspectives*, 11(2), 65-71.
- Au, W. (2009). *Unequal by design: High-stakes testing and the standardization of inequality*. New York: Routledge.
- Au, W. (2007). High-stakes testing and curricular control: A qualitative metasynthesis. *Educational Researcher*, 36(5), 258-267.

Lack of Engagement: Strategies to Create Intrinsic Motivation in Writing

The purpose of this paper is to examine what creates engagement with writing for students and what strategies teachers can use to make writing engaging. Using Deci's self-determination theory, this literature review focused on writing studies that dealt with students in classroom contexts. The studies were gathered from a search completed in February of 2011 using Academic Search and Educational Resources Information Center (ERIC), through the Evergreen State College Library. Main results show that teachers can meet students' psychological needs by using strategies that incorporate the three facets of intrinsic motivation, competence, autonomy, and relatedness. Strategies teachers can use to increase motivation include scaffolding to feel competent, use of self regulating behaviors to feel autonomy, and opportunities to relate to the curriculum and to the classroom environment personally. These strategies are discussed in terms of best practices for an English teacher.

Imagine you have walked into an English Language Arts classroom full of students. The class has read a book and they are now gathering evidence using outlines to guide them in writing. Some students attempt to write for several minutes and then get frustrated and stop. Some students will not write the entire time given to them although they are capable. At the end of the quarter less than half of the class has turned in the assignment, severely affecting their grades, and contributing to lower overall grade point averages. Setting a writing task for a grade is not enough to engage students in writing. This was the case in my first student teaching experience. It made me curious how I could get students excited in writing tasks and what was holding them back from using their own creativity.

How does a lack of skill or a lack of interest effect engagement in writing? What strategies can a teacher implement to make writing engaging for students who are not motivated or who lack skills in writing? The purpose of this review is to explore some common barriers to engagement and motivation with writing and propose

possible strategies for educators to address those causes.

Why Does Engagement in Writing Matter?

Understanding the relationship between motivation, engagement, and writing is an important topic for me as an English teacher because I believe that writing is not limited to being merely a skill set, it is also a tool for higher level thinking and reflection, and has the power to challenge thinking, create disequilibrium, and create more thoughtful citizens. Writing allows students to explore their thinking. Paulo Freire (2005) wrote, "Nobody can write who never writes, just as one cannot swim who never swims" (p. 46). Freire meant that for students to write well, they must write regularly. I am looking for strategies to bring my students into writing because writing is more than a skill; it is a pathway to learning throughout their lives. It is valuable for students to become competent in interrogating their own beliefs so they can become contributing members of society.

Writing can be used as a tool for critical thinking. In writing down what they know, students can actively check conflicting viewpoints and take their thinking to the next level. Paulo Freire (2005) commented that even graduate students often felt they could not write well. Freire noted, that illiteracy “is the suffocation of the consciousness” and a barrier to achieving full citizenship (p.3). Freire believed writing helped people to rethink their ideas. In Freire’s mind, limited ability in reading and writing also led to a limited understanding of the world and limited ability to critically analyze thinking.

Writing can be used to empower social action. Christensen noted (2000) that “The continued “achievement gap” between white students and students of color is further testimony to how education – especially reading and writing – continues to be a barrier to equality” (p. vi). Christensen believed that students needed a way to express themselves in order to imaginatively come up with solutions to those problems. She use writing as a way to find solutions to personal pain (p. vii). Using writing to empower students to create the world they want to live in also creates interest and engagement for students.

Intrinsic motivation creates engagement in academic contexts. To create intrinsic motivation, self-determination theory posits that students’ psychological needs should be met. Throughout this review strategies will be analyzed through these three primary psychological needs that create intrinsic motivation: “...(1) the need for competence, (2) the need for autonomy (or self-determination), and (3) the need for relatedness” (as cited by Boyd, 2002, p. 259). These three psychological needs guide the structure of this review.

For the purposes of this paper there are several key definitions that should be made in advance. Motivation can be broken into

intrinsic and extrinsic motivation. I will mainly be focusing on what strategies create intrinsic motivation. Intrinsic motivation, is argued to come from within the student themselves, and not rely on reward but as a goal unto itself that is done for the enjoyment of the task thing itself without outside factors. The exact opposite of intrinsic motivation can be found in curriculum that is not challenging, where students sit passively by while teachers lecture, and then complete low-cognitive level assignments that serve to reinforce test-defined skills and knowledge (Miller, 2009, p. 122). Setting up your curriculum to engage students’ psychological needs presents the antithesis to this scenario.

Researchers are beginning to delve into what students gain from writing. Engagement plays a critical role in the choice to write. According to Hawthorne, “Students need to be more than just behaviorally involved in a task to be ‘engaged’. Rather, it is the quality of thought and purpose that they bring to their involvement that is crucial to being ‘engaged’” (Hawthorne, 2008, pp. 30-31). Although students may complete their work, their interests are not always attended to in their assigned work. There are conditions which can be met that will bring students into the tasks they work on at schools.

Researchers agree that more research on engagement in writing is needed. Depending on the cause of disengagement or lack of motivation, researchers have chosen to present different strategies to engage students in writing. This review covers a variety of studies surrounding the topics of engagement, writing, and motivation. The nature of this review is limited and is only a sample of the literature available. Researchers measured motivation in different ways. This review is looking at the outcomes of their strategy more closely than the exact matching of their measurements.

Empirical Studies on Engagement, Motivation, and Writing

The following section is an overview of several empirical studies that are related to increasing student engagement with writing using motivational strategies. A section of this review is dedicated to each aspect of students' psychological needs. In the first section, the focus will be on studies that address the relationship between competence in writing and engagement. The section following will focus on a study that addresses student autonomy. The next set of studies is focused on studies that address relatedness. The last section combines a pair of studies that each incorporates a strong use of competence, autonomy and relatedness.

Competence

Feeling competent is one of the three psychological needs that encourages learners to be intrinsically motivated. For students to be intrinsically motivated they benefit from feeling that they can master a skill, in this case writing. The need for competence underlies intrinsic motivation (Vansteenkiste et al., 2006, p.20). The following four studies deal with establishing competence through higher expectations, questioning strategies, skill based and creative based goals, and the use of writing strategies.

Higher Expectations

Students may feel increased competency from higher expectations. In this qualitative study, Miller et al., (2009) wondered how higher expectations would affect the learning of high-school students. Researchers used twenty-four junior students from the Carolinas of lower, average, and high performance and their three teachers. Teachers changed their teaching by assigning more class and homework. Students made self evaluations and monitored their own academic

performance, set goals to improve, and then implemented the strategies to achieve new goals. Teachers assigned reading homework with questions for students to complete four nights a week. Teachers would model reading strategies and emphasized that everyone experiences studying difficulties and that it was important to be persistent. They emphasized that studying was tied to results on quizzes and exams, and had students keep a homework log where they could note their distractions. During two nine week periods, researchers would visit cooperating teachers and monitor student progress with higher expectations in reading and writing at least two times a week. Teachers changed their grading practices so that students' grades were based on work completed and not on behavior. Students were also interviewed by the researchers and their responses were coded and categorized.

Miller et al.'s (2009) results showed that students overestimated their abilities despite frequent failures in homework and assessments, and each student predicted they would improve for the next exam. While students responded positively to higher academic expectations by spending more time on task, they had difficulty transferring those skills outside of the classroom. Higher performers recognized the strategies they needed to be successful academically but failed to implement them. Average performers had difficulty due to distractions such as TV, talking to friends, or not having a quiet place to study. Low performers relied on rehearsal strategies and lacked other strategies for improvement. Low performers also blamed themselves for their failures. The teacher's ability to make topics interesting contributed to expressed interest and greater effort. A common factor for engagement was a sense of challenge, which students responded to positively.

Miller et al.'s (2009) study was compelling because it showed that students

were challenged when they were expected to read and write extended prose and discuss their opinions with classmates as well as when teachers could spark their interests (p.136). However, the study changed teaching significantly, especially in the daily routine of the classroom, homework expectations, and grading practices. Thus it is difficult to discern which part of the higher expectations treatment was most effective. Some students who had trouble transferred out of these classes to avoid the added work load. Researchers suggested that higher expectations as a part of the school culture would be worthy of research in the future.

Miller's (2009) study specifically tied to students' and teachers' conceptions of student competence, but it also engaged in relatedness by allowing students to collaborate and discuss regularly, and it engaged autonomy in the way that students were responsible for their own monitoring and reading. In this study, feelings of competence in students were reinforced by assigning challenging amounts of work both in the classroom and at home. Researchers noted that students had difficulty with the independent homework when the teacher was not present to assist them. Without teacher assistance students may have felt a lack of competence, and therefore a lack of motivation.

Using Questioning Strategies

Smith et al., (2007) researched whether using cognitive, metacognitive, or affective questioning would increase student engagement in writing. Eighty-six ninth grade world history class students from the southwestern United States were studied over twelve weeks. Students were all given the same lesson but were given different journal prompts. There were three groups involved, a control group which received no journal questions, a cognitive group which

was given only cognitive or text related questions, and a combination group that used a mixture of cognitive, text related, metacognitive and affective questions. Metacognitive knowledge was defined as "individuals' personal knowledge of how they learn and process information" (p. 44). Affective questions were defined as, "wherein a student's own interpretation counts" (p.44). Researchers worked with the high school social studies teacher to compare the effects on students who were considered to be at risk and their non labeled peers. Results revealed that journaling had a positive impact on grades of the participants. Use of metacognitive and affective questions in journals appeared to keep students in the combination group engaged in the learning process to a much greater degree than students in the control or metacognitive group. The study results showed that journals helped at risk students also.

The Smith et al., (2009) study is interesting because it indicates that the types of questions teachers ask will affect engagement of their students. Adding metacognitive and affective questions to textual and cognitive questions kept students engaged in the learning process to a much greater degree than the other questioning strategies (Smith et al., 2007, pp. 46-47). The study found that the benefits from the variety of question types applied to ethnically diverse students as well as at risk students. Unfortunately, this study left out how they judged the journals, how participants were chosen, or what their demographics were. Researchers did not explain their definitions of engagement, so it is difficult to understand what indicated engagement in journals.

Smith et al. (2007) found that engagement in writing could be encouraged through using an integrative mixture of journal questions. Metacognitive questions

were tied to competency because they allowed students to explain what they knew in their own words, stretching their ideas as they explained. Affective questioning engaged student experiences and therefore could be tied to the need for relatedness to create intrinsic motivation.

Skill Based or Creative Based Teaching Goals

The type of support a teacher offers has an impact on their students' feelings of competence. In this constructivist study, Kjellin, et al., (2006) observed how teacher support impacts engagement, writing, reading, and the amount of access students with reading and writing difficulties have compared to students without difficulties when achieving creative and skill based tasks. Participants lived in Sweden and ranged from preschool age to upper secondary school, including twenty-three students with reading and writing difficulties and twenty-three students in a control group. Two students were observed in a fifty minute classroom period by two researchers who noted signs of engagement and support by the teacher. Students were also interviewed by the researchers to confirm levels of engagement and support. In Sweden there are two sets of goals in the school systems; there are goals to attain, which are skill-based, and there are goals to aim for which are more creative.

The results of the Kjellin et al., (2006) study suggested that students who had difficulty with reading and writing had a harder time engaging than students with dyslexia when attempting the goals to attain (the skill based tasks). Students with reading and writing difficulties were more engaged with the goals to aim for (the creative tasks). The students who had difficulty with reading and writing had the most teacher attention, which the researchers believe may have created a stigma of

needing support that decreased engagement. Students with dyslexia had less support from teachers.

Although the Kjellin et al., (2006) study took place in Sweden, where standards are structured differently than in the United States, the study's findings showed that students who had trouble with reading and writing were more engaged in creative tasks than skill based tasks. This suggests that students felt more competent with creative tasks, and that those tasks engaged students' interests. The researchers suggested that "Teachers must find a balance between direct skills instruction and contextually grounded literacy activities, and also promote peer-group interactive approaches" (Kjellin, 2006, p. 198). Unfortunately, the study was not particularly focused on one age group, and included students with dyslexia in those that had reading and writing difficulties but was not specific on the conditions of the others with difficulties. The study also failed to choose a specific age range, and did not specify particular affects for either higher or secondary level students.

In the Kjellin et al., (2006) study students with reading and writing difficulties were most engaged with the creative goals to aim for and when activities involved practicing with language at a higher level using creative tasks. Dyslexic students got less teacher attention than their peers who had difficulty with reading and writing in other ways. Researchers were in favor of using both skill based and creative goals together to allow an entry point for students with reading and writing difficulties.

Writing Strategies

Students with learning disabilities tend to write papers that are shorter, less cohesive, and more confusing (as cited by Graham et al., 1993, p. 237). Graham et al. (1993) researched whether the emphasis

students placed on mechanics or meaning differed between students with learning disabilities and normative students. Thirty-nine students with learning disabilities and a control group of twenty-nine normative students participated from the same classes in a rural northeastern part of the United States. The students were either in fourth to fifth grade or seventh to eighth grade and were carefully selected. Examiners tape recorded interviews with students, which were then transcribed and coded. Questions were open ended and centered on declarative, procedural, and conditional knowledge of writing. Students were then given a short piece of writing and asked to critique it for improvement. In addition students were asked about their attitudes toward writing using Likert-type scales.

The results found that normally achieving students had a more mature knowledge base about writing and were more likely to emphasize writing strategies and the writing process than students with learning disabilities (Graham et al., 1993, p. 248). Students with learning disabilities focused on revisions that focused on neatness instead of the content. The researchers recommended that teachers foster development of a conceptually sound knowledge base for writing, create security in using cognitive processes needed for writing, a desire to write, and present realistic self-evaluations.

The Graham et al., (1993) study results seemed to suggest that students with learning disabilities may need extra scaffolding with writing tasks. For learning disabled students to engage in writing, they need to learn to assess their success in writing through self monitoring their own progress. Although the study provided fruitful information, the interviews and questionnaires were limited because they relied on self report data without confirming by triangulating the data. However,

researchers did mention that this study reproduced previous similar study results (Graham, 1993, p. 248). The researchers mentioned that some disparity might be due to differences in age in the participants.

Relevance to Engagement in Writing

Although each study incorporated different strategies to create feelings of competence, the theme throughout all four studies was the need for appropriate scaffolding so that students felt capable of the tasks they were set. For example, when higher expectations created heavier tasks, students had difficulty regulating their own tasks while the teacher was not there (Miller et al., 2009). This might be a barrier to student engagement with writing because students did not have the skills to be confident in their skills.

Using questioning strategies is another form of scaffolding to help students access the content knowledge, especially effective and metacognitive questions. Offering students questions that connect to their experiences and ask students to explain how they know what they know may increase the student's ability to feel competent (Smith et al., 2007).

Using creative tasks to engage students with reading and writing difficulties is a strategy that could lead students to learning skills. Too much access to the teacher may harm a student's feelings of competency (Kjellin et al., 2006).

However, students may feel very competent when it is not warranted by their work. Students may need to monitor their own progress to understand the connection between their work and its quality, which is one aspect of creating autonomy (Graham et. al., 1993).

Autonomy

To fulfill students' psychological needs, teachers can create intrinsic

motivation through autonomy by providing opportunities for students to make choices using self determination and providing a respect for their personal responsibility. As Vansteenkiste et al., (2006) defined it, “*Autonomous motivation* involves the experience of volition and choice” (p. 19). Where students have freedom to choose, they are more likely to be engaged.

Martin et al., (2003) suggested that “to increase self-engagement and learning, give students a choice of their learning goals, a method for regulating their expectations, choices, actions, and results to meet those goals, and then reward them for meeting their goals” (p. 433). In the following study, researchers used self-determination contracts to enhance autonomy.

Self-Determination Contracts

In this study, students filled out contracts for how to use class time. Martin et al., (2003) wanted to see whether secondary-aged students could learn to use self-determination contracts to self-regulate their academic work, specifically students who had emotional and behavioral problems. The participants included eight nine to ten year old boys who lived at a private residential treatment facility for children with severe emotional or behavioral problems and their teacher and teacher’s aide. The contracts were split into four sections: plan, work, evaluate, and adjust. Students would circle their chosen activity, fill in start and end times, and project the time it would take to complete the work, the number of problems they would get correct, and the number of points they would earn. The intervention had three phases: the teacher’s introduction of the contracts with little instruction (days 1-5), the teacher offering bonus points for completing the entire contract (days 6-24), and an in depth explanation by the teacher on how to fill out the adjustment section of the contract (day

10). Students would give a rationale for their plan and the teacher would negotiate approval of the plans if the time, work quantity, or the work task did not match the student’s instructional level. When students finished the task the teacher would grade it on the spot using a detailed rubric to look for correspondence to the student’s plan.

Results showed that self-determination contracts were effective for learning self-regulation skills while completing academic tasks. Overall there was a significant difference between the pre- and post scores for each content area. Scores dipped after bonus points were taken away, but rose again within five days to their previous levels. The students’ ability to self regulate improved as their adjustments became more exact. The teacher noted that the contracts increased the amount of time students were engaged, although it was not an explicit goal.

The Martin et al. (2003) study is compelling because it showed success using self-determination contracts with students who had issues of self-regulation in a variety of subjects. Martin et al. (2003) found that, “...self-determination contracts gave them control over their adjustments and that this increased control was associated with increased learning” (p. 444). Researchers recommended that teachers be explicit in teaching students to evaluate and adjust, because that is the mechanism that allowed students to regulate their behavior.

The study is convincing because it shows that autonomy can play an important role in creating student ownership of their learning and time engaged with a task. However, the limited sample of eight boys in a residential facility is not the same as a public school classroom where there are many more students present and students are limited to one teacher. The boys were also behaviorally or emotionally disturbed,

which is not always the case for public school students.

Relatedness

For students' psychological needs to be met, tasks can incorporate elements that relate to the students and their communities. A compelling facet of intrinsic motivation is the feeling of relatedness. Vansteenkiste et al., (2006) claimed, "...it is out of the desire to be related to others, to feel part of a family, group, or social order, that individuals are inclined to take on the values, beliefs, and behaviors that are endorsed by those others" (p. 21). In a school context relatedness pertains to how the curriculum is related to the student and their social experiences. In these next studies, researchers use strategies to create relatedness within the curriculum.

Multicultural Novels

In this study students were given contexts for autonomy and for relatedness using multicultural novels. Bean et al., (1999) looked at the effect of multicultural literature on the quality of students' writing in a study of two ninth grade classes in an urban part of Hawaii and a rural technology high school in the southwestern United States. Researchers used the novel *Heartbeat, Drumbeat* (1992), along with journal writing, autobiographies, character interpretation, dialogue journal entries, probing questions, and a research paper to see how students responded in the quality of their writing. Researchers used field journals and printed copies of emailed conversations to monitor progress between the two schools. Journals were coded using Newell's (1996) literacy response categories to establish whether the students were engaged. Results showed that student responses revealed a sense of agency through frequent interpretive and personal reaction responses (Bean, 1999, p.37).

Researchers noted that the multicultural novel, the constructivist stance of the teachers, along with the high level questions encouraged student engagement, because students could connect with the curriculum.

Using multicultural novels is compelling because the students' writing did show interest in the novel especially in affective responses where students related their own experiences to the struggles the characters had with their identities. Unfortunately, Bean et al., (1999) were not specific about the demographics of their participants, so it is unclear if the multicultural novel pertained to them as a group significantly. Without a control group it is difficult to discern if the outcomes are due to the multicultural novel or to the structure of the classroom environments. Although both schools read the same book, it is difficult to discern whether these factors contributed to the successful level of engagement found in the writing or if it was the form of writing assignments. Researchers were looking at engagement through responses to journals alone, and did not code classroom behavior or discuss the specific aspects of intrinsic motivation.

Bean et al., (1999) claimed that using a multicultural novel encouraged students to write by using the characters to discuss identity issues. Teachers used dialogue journals to spur written discussion by the students about issues in the book using questions to spur the students' interest in the story. The relatedness of the characters to the students' context may have been a factor in students' engagement with the writing process because they felt their own experiences mirrored in the story. Relatedness might also show as students invested in the classroom environment in group tasks.

Print Media Impact

In a study done by O'Brien et al., (2007) researchers looked at whether print media would increase engagement for students by incorporating student lived experiences. Researchers hoped to engage struggling middle-school students by changing students' perceptions about their competency using print media. Researchers spent two years in a suburban part of the Twin Cities with fifteen seventh and eighth graders in a reading intervention class and their reading and English teacher. Researchers used mixed methods, incorporating observations, and interviews (including initial, focus group, project interviews, and exit interviews). Teachers used think-alouds and talk-alouds, along with the quantitative data from tests and implemented a curriculum that was a mix of traditional and multimodal tasks. Students used PowerPoint, the Read 180 Program, ComicLife software, created a radio play using Garageband, Wikis, and publishing to moodle. More traditional methods such as reading Young Adult novels, guided reading with strategies, discussions, dramatization of stories, questioning sessions, journaling, poetry, and writing in cooperative groups about an ideal town which students populated with created characters were also used.

O'Brien et al., (2007) discovered that students found that using multimedia, collaborative activities, digital tools, producing digital products and performances was more engaging than traditional practices. Results showed that students disengaged when they felt competent and were mislabeled as in need of intervention. Students enjoyed participating in the projects and media literacy. Students were so immersed in the activities that they persevered and developed agency without concern for competency. However, students

had to buy into the classroom community to glean the benefits of the curriculum.

O'Brien et al., (2007) found that using technology and multi-media projects allowed students to feel competent, and were balanced by group work tasks that helped students to buy into the classroom community through creative projects which encouraged engagement through student interests. The ability to persevere out of interest makes a strong case for why print media and lived experiences should be incorporated into classroom activities. However, the study was targeted at a school with the resources to focus on a struggling reading student profile using technology. The small sample size of a reading class with two teachers in a school where technology was easily accessible to the students is not necessarily the norm in public schools today.

O'Brien et al., (2007) emphasized that students gained competence because of the collaborative work in a supportive community, whereas some students did not buy into the community because they did not want to be labeled as in need of remediation. The supportive environment and group projects are good examples of strategies teachers could use to establish relatedness in their classrooms.

Intrinsic Motivation for Young Spellers

In this study Sideridis et al., (2005) were interested in the role of goal importance on student achievement and the factors that increase achievement. A very large sample of 257 elementary aged students in Greece participated, and was broken into groups of either low or high spellers. Students were chosen using stratified random procedures. The researchers used paper tests with self report questions during class times using scales for measurements. Results showed that compared with high spellers, low spellers

had lower perceptions of control, stronger beliefs about evaluating the outcomes of their deeds, and stronger feelings towards complying with the requests of significant others. When students felt obliged to perform to please others, they were unable to achieve high levels of performance.

Although the Sideridis et al., (2005) study found some interesting results, it is not without its flaws. With young elementary aged children, a paper test may not be entirely sensitive to the needs of the children to express themselves. Researchers also were asking students to label their own behavior, which could have been confirmed in other ways. The study was also very broad and did not take into account the environments where participants were learning as a significant factor.

Overall, the study's most stirring finding was that poor spellers most resemble students with learning disabilities (Sideridis et al., 2005, p. 99). When low spellers were compared to high spellers, low spellers had different motivational profiles with lower perceptions of control, stronger beliefs about evaluating the outcomes of their deeds, and stronger feelings about the expectations of significant others. Low spellers chose to focus on factors that accentuated extrinsic motivation perhaps contributing to disengagement in writing. Sideridis et al., (2005) recommended that lower spellers might benefit from evaluating the outcomes of their actions and looking for value in their goals.

According to Vansteenkiste et al., (2006), "Because extrinsic rewards are so often used as instruments of social control...they can leave people feeling like pawns to the rewards... and thus thwart their need for autonomy... (as cited in 2006, p.20). The researchers go on to say that controlling contexts have been associated with reduced conceptual learning and lower

achievement as well as depression and lower self-esteem (p.22).

Competence, Autonomy, and Relatedness

The next two studies met all three of students' psychological needs that contribute to intrinsic motivation, incorporating competence, autonomy, and relatedness into either their study design or the study results. The first study explores the strategy of peer tutoring followed by a focus group study where researchers asked students what they found motivating.

Students as Peer Tutors

Boyd (2002) researched struggling readers and writers in a peer tutoring situation. The struggling readers and writers included four ninth grade students who tutored twenty-eight fourth and fifth grade elementary students. Boyd used field notes, audio-taped preparation seminars, videotaped cross-aged discussion groups, formal and informal student interviews, debriefing sessions, and written documents (such as reading logs) to monitor the students. High school students were given training sessions on tutoring and each student was expected to plan lessons for a group of six elementary kids using the book *Tuesday*. After the sessions were over the high school students would critique the videos of themselves in discussion with their peers, paying attention to their techniques. The researcher concluded that through peer tutoring, the high school students found increased intrinsic motivation in self-competence, autonomy, and relatedness. The sociocultural nature of the activities helped students construct meaning of literature through writing and discussion.

In the Boyd (2002) study students had opportunities to experience the three factors that contribute to intrinsic motivation (competence, autonomy, and relatedness). The students felt competence by taking on

the role of teacher, preparing lesson plans using reading and writing. The students were autonomous when they decided how to conduct literacy activities, pose questions, and in the plans that they made. The students had opportunities to feel relatedness through their interactions with their elementary groups, interactions with the other tutors, and the researcher around the literature they read, wrote about, and discussed while engaging themselves by personalizing the tasks to their own tastes. Importantly, Boyd (2002) pointed out, "Each of the features that supported students' literacy motivation were developed and enhanced over time through instruction about literature. In addition, through facilitation and encouragement of their roles within the program, the high school students were enabled to experience positive and effective ways to talk about books" (p. 266). This study increased students feelings of competence, autonomy, while making the experience relevant and related to the students.

The Boyd (2002) study is compelling because it created an environment where students could feel competency, autonomy, and relatedness. The students who participated did feel challenged but not so challenged that the goals were unattainable. The students were held accountable for their work with the younger students by their performances as teachers. The younger students' interest drove the ninth graders to put an effort into their teaching because of its relevance. This study was limited because it had a very small sample of students. Its generalizability is difficult to ascertain from only these four students. The study is also limited because it would be difficult to implement in a public school classroom.

Boyd (2002) found that students were engaged through peer tutoring because the tasks were attainable and they could feel

competent in accomplishing them while they had the freedom to control their own learning by creating and implementing their own plans, and while connecting with their peers and sharing their own perspectives. Struggling students' writing was relevant to a real purpose where students were given immediate feedback from the lessons they taught.

Student Opinions about Engagement with Writing

Another study in Australia researched by Hawthorne (2008) looked at the differences between engaged writers and reluctant writers and what a teacher could do to improve engagement. There were twenty-eight students in tenth year classes from two different schools participating in the study. Students were given a questionnaire in their English classes and focus groups were formed from the students who were most reluctance to write, and also those who were most engaged. The researcher then facilitated fifty minute audio taped discussions around focus questions on what students liked and disliked and what helped or hindered their engagement with writing at school. The discussions were later transcribed and themes were identified as the transcripts were coded. Results tended to fall into six categories, "interest/relevance factors, choice or control factors, environmental factors, knowledge or skill factors, self-belief factors and teacher factors" (Hawthorne, 2008, p. 33). These categories correspond nicely with the three psychological needs for intrinsic motivation.

The big result Hawthorne (2008) found was that interest in a topic or its perceived relevance was the most dominant factor in engagement across both groups. Both reluctant and engaged writers recognized the influence of environmental factors. Reluctant girls made the most comments about the effect of the teacher on their

engagement. Participants also felt that when their competence was challenged it affected their engagement. Reluctant groups pointed out, “how experiencing failure, or believing they would fail, was an important factor in hindering their engagement with writing” (Hawthorne, 2008, p. 39). This comment gets at the students’ feeling of competence.

Hawthorne’s (2008) study carried some flaws worthy of critique. The study relied on self-report data based on student opinions alone and lacked triangulation. The sample size of the participants was small, which limits its generalizability. The researcher found that four conditions were required to enhance the motivation to write, recommending: nurture students’ functional beliefs about writing, use authentic writing goals and contexts, provide a supportive context for writing, and create a positive writing environment. Hawthorne recommended that teachers can improve engagement by allowing students choice in writing tasks, explaining the purpose and relevance of each task, allowing collaboration, being open to negotiating deadlines and task expectations so students feel they are realistic, ensuring that students understand the components of the task, ensuring students have the strategies, skills, and knowledge to complete the task, and by giving detailed and constructive feedback.

Discussion

Throughout this paper studies were analyzed through the lens of the three psychological needs for intrinsic motivation in education and results often blended into more than one category of intrinsic motivation. The following is a synopsis of how the studies might be used by a teacher in their classroom.

To encourage students to feel competent, there seemed to be a pattern between the teacher’s ability to provide adequate scaffolding to student needs and

the student’s ability to observe their own growth. Scaffolding was defined as “...any support system that enables students to succeed with tasks they find genuinely challenging...” (Tomlinson & Strickland, 2005, p. 356). In the Miller et al. (2009) study, when teachers implemented higher expectations on students, the students had the most difficulty when the teachers were not there to intervene in the study environment. This is significant because student engagement with writing was raised when the students felt challenged, but students may have lost a sense of competency at home, where there was a lack of scaffolding. This finding suggested that although teachers may be able to engage students in writing in the classroom, they may have difficulty getting the majority of students to work independently at home. In the study by Smith et al., (2007) students also relied on teacher scaffolding in the form of using metacognitive and affective questions. In the study by Graham et al., (1993) results indicated that students held positive beliefs about their writing abilities despite a history of school failure. Students with learning disabilities tended to focus on the neatness of their work and not on the conceptual framework of the writing. Self-evaluations were suggested by the researchers to help students connect their work with the results they earn. Autonomy is similar to competence because the independent and self-determination aspects of autonomy could contribute to a student’s confidence in their academic abilities.

To encourage students to feel autonomous teachers can create autonomy supportive contexts where students can make choices based on self evaluations of their effectiveness, set goals and use learning strategies, self monitor changes, and adjust their strategies methods (Martin et al., 2003). Teachers could create autonomy-supportive contexts where they

empathize with the learner's perspective, allow opportunities for self-initiation and choice, provide meaningful rationale if choice is constrained, refrain from the use of pressures and contingencies to motivate behavior, and provide timely positive feedback" (Vansteenkiste et al., 2006, p.21). One strategy that enhanced engagement was to use self-determination contracts, where students decided how time was spent. Allowing students the freedom to make choices also could create an environment where students feel have the opportunity to build feelings of competence, which may also increase their motivation to write.

To encourage students to feel relatedness teachers can include the lived experiences of their students in their curriculum. Students were engaged when they were reading books that were culturally relevant (Bean, 1999), when projects incorporated their interests (O'Brien, 2007), when they had ways to relate personal experiences through affective questioning (Graham, 1993) and when their work was relevant to the peers around them (Boyd, 2002). When classrooms function as communities, students felt that the work in the class was important (O'Brien et al., (2007) because students would disengage if they felt isolated from the rest of the class.

Further Research

Although these studies illuminate aspects of intrinsic motivation in writing, the three psychological needs were not always used together. Many of these studies had difficulty isolating variables to create strong correlations with their results and conclusions.

The group of studies as a whole is only a very small sample of what is available to be learned from research on engagement with writing. In the future it would be useful to understand the relationships between creating competency, allowing

autonomy, and including relatedness in writing classrooms. Understanding how these concepts can most powerfully be tied together and how the strategies may be less successful would be useful information.

The classroom environment seemed to be a very important aspect of each study that was not always accounted for by the researchers. Constructivist teaching may be more conducive to creating autonomy and relatedness for students, whereas an authoritarian classroom may stress extrinsic motivation instead. It would be useful to understand what aspects of the teaching environment researchers find to be most conducive to creating intrinsic motivation in students.

Although the research began incorporating aspects of autonomy by looking at self-determination contracts, the one article was insufficient for pulling all three aspects of intrinsic motivation together. More research on the strategies that are most successful for writing in the English classroom would enrich this study on the psychological needs of intrinsic motivation.

Although the studies each took on aspects of competency, autonomy, and relatedness, it was rare to find units that attended to all three psychological needs. Finding unit materials that include all three aspects would be worth investigation. Understanding the components needed to create strong units that provide for students' basic psychological needs could be a powerful tool in the English language arts classroom.

References

- Bean, T., Cantu'Valerio, P., Senior, H., & White, F. (1999). Secondary English students' engagement in reading and writing about a multicultural novel. *Journal of Educational Research*,

- 93(1), 32. Retrieved from Academic Search Complete database.
- Boyd, F. (2002). Motivation to continue: enhancing literacy learning for struggling readers and writers. *Reading & Writing Quarterly*, 18(3), 257-277. doi:10.1080/07487630290061818
- Christensen, L., (2000) *Reading, Writing, and Rising Up: Teaching about Social Justice and the Power of the Written Word*. Milwaukee: Rethinking Schools, Ltd.
- Fredrick, T. (2006). Choosing to belong: increasing adolescent male engagement in the ELA classroom. *Changing English: Studies in Culture & Education*, 13(1), 151-159. doi:10.1080/13586840500523596 (NOTAN IMPIRICAL STUDY!)
- Freire, P. (2005) *Teachers as Cultural Workers*. Boulder: Westview Press.
- Graham, S., Schwartz, S., & MacArthur, C. (1993). Knowledge of writing and the composing process, attitude toward writing, and self-efficacy for students with and without learning disabilities. *Journal of Learning Disabilities*, 26(4), Retrieved from Academic Search Complete database.
- Hawthorne, S. (2008). Students' beliefs about barriers to engagement with writing in secondary school English: a focus group study. *Australian Journal of Language & Literacy*, 31(1), 30-42. Retrieved from Academic Search Complete database.
- Kjellin, M., & Wennerström, K. (2006). Classroom activities and engagement for children with reading and writing difficulties. *European Journal of Special Needs Education*, 21(2), 187-200. doi:10.1080/08856250600600885
- Martin, J., Mithaug, D., Cox, P., Peterson, L., Van Dycke, J., & Cash, M. (2003). Increasing self-determination: teaching students to plan, work, evaluate, and adjust. *Exceptional Children*, 69(4), 431-447. Retrieved from EBSCOhost.
- Miller, S., Heafner, T., & Massey, D. (2009). High-school teachers' attempts to promote self-regulated learning: "I may learn from you, yet how do I do it?". *Urban Review*, 41(2), 121-140. doi:10.1007/s11256-008-0100-3
- O'Brien, D., Beach, R., & Scharber, C. (2007). "Struggling" middle schoolers: engagement and literate competence in a reading writing intervention class. *Reading Psychology*, 28(1), 51-73. doi:10.1080/02702710601115463
- Shui-Fong, L., & Yin-Kum, L. (2007). The roles of instructional practices and motivation in writing performance. *Journal of Experimental Education*, 75(2), 145-164. Retrieved from Academic Search Complete database.
- Sideridis, G. (2005). Attitudes and motivation of poor and good spellers: broadening planned behavior theory. *Reading & Writing Quarterly*, 21(1), 87-103. doi:10.1080/10573560590523685
- Smith, K., Rook, J., & Smith, T. (2007). Increasing student engagement using effective and metacognitive writing strategies in content areas. *Preventing School Failure*, 51(3), 43-48. Retrieved from Academic Search Complete database.
- Tomlinson, C., & Strickland, C., (2005) *Differentiation in Practice: A Resource Guide for Differentiating Curriculum*. Alexandria: Association for Supervision and Curriculum Development.
- Vansteenkiste, M., Lens, W., & Deci, E. L. (2006). Intrinsic versus extrinsic goal contents in self-determination theory: another look at the quality of academic motivation. *Educational Psychologist*,

41(1), 19-31.
doi:10.1207/s15326985ep4101_4

Creativity and Community: Multicultural Practices in Visual Arts Education

Nationwide assessments of student participation and achievement in the visual arts have revealed racial disproportionalities, most notably the underperformance of African American students. Multicultural education theories suggest that this may be a result of limited cultural relevance in the curriculum and instructional methods. This paper examines peer-reviewed, empirical research on the potential benefits of visual arts education to diverse student populations. Case studies of multicultural art instruction are examined in terms of student outcomes, teacher preparation, and pedagogical frameworks. Student participants varied widely in age (elementary to undergraduate), geography (including Brazil, Portugal, Serbia, and America), and ethnicity (White, Hispanic, African American). Teacher participants were studied in both Canada and America. Visual arts instruction showed benefits to student self-esteem and school participation, while multicultural curricula fostered intercultural understandings. However, multicultural content and interrogation of stereotypes sometimes heightened student awareness of racial/ethnic differences, with consequent alienation of both White students and students of color. While the studies had various methodological limitations, it is concluded that arts education offers many opportunities to foster understanding across differences. Such intercultural skills are essential to democratic citizenship. The goal of multicultural art education is not cultural unity, but rather student development of both personal identity and inter-subjectivity. Cross-cultural understanding is not automatic and must be facilitated through pedagogical strategies. Multicultural approaches can be integrated into the existing framework of Discipline Based Art Education, adding social context to the established standards. Further research is recommended to clarify best practices in contemporary classroom settings.

As a teacher intern in a high school art classroom, I had an opportunity to teach visual arts to students from a diverse range of backgrounds. I structured my lessons to concur with the state academic learning standards (OSPI, 2009), which inform instruction in the four categories of discipline-based arts education (DBAE): art production, art history, art criticism, and aesthetics. Using this framework, I introduced students to elements of art through visual presentations, discrete art skills, applied vocabulary, and critical reflections. The DBAE structure informed my use of age-appropriate lessons that reflected authentic issues and practices in the arts discipline. However, the standards

did not give specific guidance towards making the curriculum culturally responsive to the student population.

Insights from my own classroom experience as well as from educational theorists such as Banks (2009) led me to see that cultural aspects of personal engagement can be critical to student learning outcomes. Students who make personal or cultural connections with the lessons and their own artwork are more likely to complete assignments and gain deep, nuanced understandings. Lessons that lack cultural relevance may result in lower student motivation and participation.

How can multicultural approaches be used to improve motivation and

achievement among diverse students in the visual arts classroom? As an effort to inform and improve my teaching practice, this paper explores that question through a review of the professional literature. To gain insight to this question, educational theory and empirical research are reviewed to shed light on the intersection of multicultural and visual arts education.

This question is also pertinent to the larger community of art educators. Student populations in American schools continue to grow more racially and culturally diverse, with students of color making up 43% of the contemporary public school population (Johnson, 2008). In some states and most large urban schools, students of color collectively constitute a majority of the student population. In contrast, teacher populations do not show the same proportions of racial or cultural diversity. Currently, the ranks of American teachers are largely White and middle class (87%), and thus the “cultural mismatch” between students and teachers can constitute a serious pedagogical problem. This mismatch may partly explain the “achievement gap” among ethnic populations, a gap that has persisted in both general education and the visual arts. The recent National Assessment of Educational Progress revealed that in the visual arts, Black and Hispanic students averaged about 10% lower than White and Asian/Pacific Islander students in scores on both responding and creating tasks (Keiper, Sandene, Persky, & Kuang, 2009). While the achievement gap can be in part attributed to issues of poverty and school resources, the importance of cultural relevance cannot be overlooked. Multicultural education strategies may aid educators in supporting the learning of students from diverse backgrounds. In order to effectively and equitably serve the increasingly diverse student population in the United States,

educators need to support students in developing their own cultural identity and collaborating effectively across cultural differences (Chalmers, 1996).

The importance of multicultural education is supported by many strands in educational theory. The work of Vygotskii (1978) established the importance of the “zone of proximal development” (ZPD) in learning. This theory holds that students learn best from instruction that models skills and behaviors just beyond their current capacities. Rogoff (2003) demonstrated how cultural practices and frames of reference are crucial elements of the ZPD. Within the field of developmental psychology, Erikson (1968) established identity exploration and formation to be the primary task of adolescence. An exploration of personal and cultural identity therefore supports the basic psychological needs of students.

Multicultural education is generally defined to constitute methods that equitably support achievement for all students, such as culturally responsive curriculum and instructional methods, equitable assessments, and positive interactions across ethnic and racial lines (Nieto, 2003). The prominent model of multicultural education, as set forth by Banks (2006), includes five key dimensions: content integration, knowledge construction, prejudice reduction, equity pedagogy, and an empowering school culture. The implementation of these dimensions is intended to promote social justice and student performance by acknowledging the validity of students various worldviews, prior experiences, and approaches to learning.

Multicultural education is appropriate for all student populations. Even among ethnically homogenous populations, multicultural education can support mutual respect and collaboration across differences

of gender, sexuality, and physical ability. A consideration of cultural difference prompts students “to understand their own culture more fully, to see how it is unique and distinct from other cultures, and to understand better how it relates to and interacts with other cultures” (Banks, 1989, p. 190). Multicultural education can support individual student achievement while fostering a democratic classroom environment.

Not all educators and theorists are in agreement about the importance of multicultural education. To some, the acknowledgement and accommodation of cultural difference appears as a threat to the cultural unity of America (Schlesinger, 1992). From this perspective, multiculturalism can be construed to promote a fractured populace, without a common sense of culture, language, history, ideals, and purpose. Champions of the dominant cultural narrative may resent any decline in the centrality of a Eurocentric view of American culture, regardless of the diverse backgrounds of American students.

Visual arts educators can fail to embrace multicultural education for a number of reasons. Given their predominantly Eurocentric background, many educators can have difficulty in acknowledging the validity of other cultures’ artistic and social practices. Other educators who are supportive of pluralistic inclusion can feel limited by their own lack of knowledge about other cultures and may feel more comfortable teaching the familiar. Some teachers may conclude that the aims of multicultural education fall outside of the discrete skills and knowledge of DBAE and are more of an extraneous political imposition than a method to connect students to core discipline content (Chalmers, 1996). To address the reservations of such educators towards multicultural art education, it is critical that

the rationale and evidence for its positive impact on student learning be clearly established. Additionally, arts educators need to have practical means for implementing and trouble-shooting multicultural curricula within the prevailing DBAE framework.

Other critics of multicultural education fault the field for not being sufficiently polemical or empowering to marginalized student populations (Sleeter, 1995). Detractors note that multicultural education can essentialize concepts of cultural identity, thereby failing to acknowledge the hybrid conjunctions of race, gender, and sexual orientation. Some feel that it offers only psychological placation in the face of systemic political and economic injustices.

Multicultural education theory is relatively young, having emerged only since the 1970s. Due to this recent inception and the peripheral importance of the arts in education research, there is relatively little professional literature on the impact of multicultural practices on art education. Additionally, the subjective and qualitative natures of art education outcomes do not always allow clear comparisons to be made within and between research studies. The limited amount of empirical research in this field and the uniqueness of those studies make it difficult to generalize the results of this research. Much research on multiculturalism is frequently limited to considerations of race and ethnicity, thereby neglecting the multicultural diversity around gender, class, language, age, and sexuality. Because of these limitations, this paper cannot conclusively prove the efficacy of multicultural art education or establish best practices in the field. Rather, this paper is intended to review the available literature and note concurrences, themes, and contentions therein. Additionally, I attempt to highlight unresolved questions and areas where further research and dialog are

necessary.

Literature Review

The research studies reviewed in this paper were gathered from the Educational Resources Information Center (ERIC) and the Academic Search Complete databases in December of 2010, using the search terms “arts education,” “visual arts,” “multicultural,” and “intercultural”. The search was limited to peer reviewed, empirical research reports. Additional resources used to develop this qualitative meta-synthesis include educational reference handbooks and arts education monographs available from The Evergreen State College library. The literature review begins with a survey of the general benefits attributed to arts education for all students. The following section reviews how socio-cultural differences may influence student achievement in the visual arts. The third section reviews case studies of visual arts education implemented among diverse student populations. The final section reviews multicultural visual arts education from the perspectives of the teachers charged with implementing it, examining overall objectives, strategies, and preparation programs.

General Benefits of Visual Arts Education

A quality visual arts education is widely believed to support student learning in four core areas (New, 2007). Students expand their *observation skills and perceptual-spatial awareness* through focused attention on visual experience. Students develop skills of *personal and emotional expressivity* through the creation of individual compositions. Students develop *creativity and imagination* through exposure to new artistic perspectives and use of novel materials and processes. Finally, students learn concrete *knowledge of art materials and techniques*, as well as the

unifying conceptual framework of artistic elements and design principles. The multicultural approach to arts education introduces another dimension of *anthropological and socio-political awareness* (Chalmers, 1996).

Study in the arts can have benefits inherent to the arts discipline as well as instrumental benefits in supporting vocational development and growth in other academic areas (Efland, 2002). Arts education may positively influence overall academic performance by fostering a student’s self-esteem, school engagement, and problem solving skills. Visual and spatial thinking, which are central to visual arts education, have been linked to student success in fields such as geography, mathematics, reading, and science (Edens & Potter, 2007).

Research shows a significant correlation between students’ artistic understanding of space and proportion and their mathematical problem solving ability (Edens & Potter, 2007). The authors gave a *Draw for Math* task to 214 4th and 5th grade students in an art class within a southeastern American city. The participants included 128 African American students, 71 White students, and 15 students who were either Asian or Latino. Both genders were equally represented among the students. Students were instructed to make drawings to help them solve mathematical word problems. These drawings were assessed for their use of relevant figures, elaborations, overlapping, and schematic representation. Results of the research showed a significant correlation ($r = .27, p < .001$) between the students’ levels of spatial understanding and their problem solving ability. Further, the use of schematic representations was positively related to problem solving ($r = .29, p < .001$). The large sample size and quantitative methodology of the study give strong validity to its findings, but the results

are complicated by some anomalies. For instance, though girls in the study outperformed boys in their use of schematic representations, they did not also outperform boys on mathematical problem solving. While the study establishes a clear correlation between schematic art and math skills, further research would need to establish causality between schematic art instruction and consequent benefits to mathematical problem solving.

Researchers such as Hetland (2007) of Harvard's Project Zero have discouraged the search for instrumental justifications for art education. Rather than indirectly validate the arts through their influence on other disciplines, her research team chose to examine the benefits to student learning that visual arts education had by itself. Their research closely studied the classrooms of 6 peer-recommended arts educators to assess patterns of teacher and student behaviors, as well as learning outcomes. Through compiling the directly observed and anecdotal benefits to students, the researchers noted that the studio art classroom taught students to develop craft, engage and persist, envision, express, observe, reflect, stretch and explore, and understand the art world. These inherent values were seen to support students' cognitive and emotional development. The research examined exemplary art classrooms, rather than a random sampling, and offered no comparative or quantitative analysis of student outcomes. Therefore, the results can only suggest general goals and practices for student learning in visual art education.

The fine arts classroom can provide a unique opportunity for mixing motor skills with higher order thinking. Cognitive researchers have noted functional differences between the hemispheres of the brain, and instruction in the visual arts may support coordination of the logical and

intuitive hemispheres (Walker, 1997). The art classroom's atmosphere of "controlled freedom" (Walker, 1997, p. 16) invites personal motivation and responsibility while also supporting collaboration and camaraderie.

Research on the effects of an after school fine arts program in Lansing, Michigan, suggests that the program positively affected students' involvement with the school community and extra-curricular activities (Walker, 1997). The 18 week study was conducted at an urban high school, where the student population was 46% African American, 42% White, 6% Hispanic, and 4% Asian. A target group of 68 students was selected, of which 54 had GPAs in the lowest 40% of their grade level. Data compared students from this target group who participated in the program with a control group who did not participate, disaggregated by race/ethnicity.

The study found that 45% of participants increased their GPA, but fails to note whether the remaining 55% of students held a stable GPA or in fact lowered their GPA during the study. The author found that all of the participants joined a school club or sport, an indicator that has a positive correlation with academic success. Parents and hall monitors reported an improved attitude among the program participants. However, the attendance and discipline referral data was not presented and many of the benefits of the program were presented in anecdotal form only. The participants in the study were volunteers, and cannot be said to represent a random sample. Further, the influence of the visual arts was not isolated in the study, as the fine arts program also included dance, drama, gospel choir, instrumental music, and forensics/debate.

The research of O'Thearling and Bickley-Green (1996) examined student perceptions on art among two populations, contrasting the schema of a group of 11 at-

risk high school students with a group of 35 general education college students. The results showed significant differences in outlook, with 74% of the college students mentioning the role of self-expression in art, compared to only 27% of at-risk high school students. The at-risk students were less likely to acknowledge the intentional roles of artists and viewers in determining what was art. The authors suggest that the at-risk students' conception of a disembodied authority that defines art reflects their sense of powerlessness and low self-esteem.

The 11 at-risk students participated twice a week in 90 minute art classes after school. Students' appreciation of the quality of their work correlated with an expansion of self-esteem. Students' work showed evolution of self-concept, with varying depictions of self in different personae. The evolution of student self-representations reflects the importance of identity formation in adolescent development (Erikson, 1968). Unfortunately, the study's small sample size and lack of a control group limit any conclusive findings on the effectiveness of arts education interventions for at-risk youth.

The research reviewed in this first section has outlined how a visual arts education may support students of all cultural backgrounds in their cognitive, emotional, social, and behavioral development. Positive engagement in the visual arts classroom can have instrumental benefits to other disciplines and to a student's overall motivation and achievement. How best to provide such an arts education to students from diverse cultural backgrounds? The following section examines how socio-cultural aspects may influence student attitudes and abilities in the arts classroom.

Socio-cultural Influences on Visual Arts Learning

In order to establish culturally appropriate teaching strategies, researchers have examined the relationship of students' learning profiles and their cultural identity. While studies have demonstrated cultural *differences* in student drawings, students from distinct cultures have been shown to respond *similarly* to specific art instruction strategies (Richards, 1998). In a comparison study of drawing instruction 94 similarly aged students from eastern Jamaica and the U.S. Midwest were assessed for their response to instruction in creating still life and figure drawings. In each location, students were randomly split into a control group and an experimental group. The experimental groups were taught contour line drawing techniques through five demonstrations and 11 art activities over a period of five days, using equivalent instructional practices. The control groups received no art instruction. Both groups were given pretests and posttests consisting of a Still-Life Drawing Test (SDT) and a Goodenough-Harris Drawing Test (GHDT). The results showed significant ($p < .05$) improvement in student scores on the SDT for both Jamaican and American students in the experimental groups, with comparable benefits in each location. Neither of the control groups showed significant gains on the SDT. The GHDT "Draw a Man" test revealed no significant change in skill for the experimental or control groups in either location. The research showed comparable responses to curriculum irrespective of race or geography, but all the subjects came from similar socio-economic backgrounds. Consequently, the cultural difference presumed among the subjects may not be as great as the geography suggests, considering the formative influence of economic class.

While supporting students' mastery of technical skills, multicultural educators also seek to understand and respond to the cultural contexts of the students and community. Art activities with student-chosen subjects can be used as a pre-assessment of both technical skill and socio-cultural concept. In research with 5th graders in a Brazilian private school, Stokrocki and Coutinho (2000) describe how cultural schemae are revealed in children's drawings. This micro-ethnographic study involved 19 students (9 male, 10 female) through a month of once-weekly, 50-minute art lessons. The study suggests the importance of imitation to students at this age in their artistic development when teachers, textbooks, and commercial media supply critical models of what art looks like. The study found that the Brazilian students generated images in a seemingly international style of "school art" (Efland, 1976), that is characterized by conventional themes and stereotypes such as smiling suns, flowers, and apple trees. Students' drawings showed prominent themes of romance and hero worship that were thought to reflect media models of local culture. The overwhelming dominance of commercial soccer games among the boys' artworks demonstrated the power of persuasive media tropes to displace other personal and cultural interests. The research was limited by the small sample size and lack of comparative statistical data, preventing any externally valid generalizations to be drawn from the study.

Culturally influenced conceptions of art may influence students' motivation in the visual arts classroom. Negative cultural dispositions toward the visual arts may undermine student achievement, even among students who display strong technical skills and personal satisfaction in making art. The collusion of negative stereotypes and lack of role models may be responsible

for lower achievement (Keiper et al., 2009) among African Americans in the visual arts. African American participation is similar to that of Hispanics and Whites in every art area except visual art where it is significantly lower (DiMaggio & Ostrower, 1992).

To examine the relation of identity formation and professional aspirations among African American youth, Charland (2010) used interviews and group discussions to study the conceptions of art and artists among 58 students (29 male, 29 female) in 4 urban high schools in the Midwest. The results show students making deliberate foreclosure on the prospect of establishing a visual arts identity according to a rational consideration of their cultural experiences. Students' awareness of role models in their community was found to structure their sense of potential ethnic identity achievement. The subjects' common stereotype of an artist was of an arrogant French male, who was poor, isolated, and perhaps mentally unsound. Rather than viewing such a character in a romantic light, the subjects found the stereotype to be disturbingly similar to the irresponsible or destitute members of their own community. Another factor contributing to the students' artistic identity foreclosure was the perceived racism of the hegemonic Western art canon and the professional art world. Charland noted that while such institutional racism is also present in the business world, the symbolic prestige of business occupations is higher within the African American community, and African American participation in business is therefore greater than in visual art. Students expressed interest in personal qualities such as "creativity, talent, self-expression, self-motivation, concentration, and sensitivity" (p. 125), but did not foresee the applicability of those qualities in future artistic careers. While production of visual

forms abounded in their culture, they often did not consider them as “art”, and largely considered art and artists to be outside of their cultural aspirations. This constructivist study concluded that African American students lacked role models in the visual arts that were congruent with their racial and family identities, which may help to explain the national achievement gap among African Americans in the visual arts. However, the study results cannot be generalized due to the single study location and modest sample size.

The research reviewed in this section suggests that students from different cultures do not have significant variation in physical and perceptual abilities, but that their cultural concepts about art may differ widely. To better engage and motivate multicultural students towards achievement in the visual arts, teachers must carefully set purpose, highlight role models, and confront the influence of media stereotypes. The following section features case studies that evaluate student outcomes from several multicultural arts education interventions, including changes to students’ personal achievement and their respect for other cultures.

Student Outcomes in Multicultural Art Education Case Studies

The Humanitas program of the Los Angeles school district offers quantifiable data to illustrate how achievement among diverse students can be supported with an interdisciplinary curriculum that features arts integration. Aschbacher and Herman (1995) evaluated the program from 1989 to 1991, when it was serving approximately 3500 students per year from 29 different area high schools. The voluntary program interwove arts instruction with various events from literature, history, and general culture. Students attended performances and museum exhibits, and at 6 of the schools

there was a media artist-in-residence. The professional development and collaboration of teachers was supported with a week long training program, ongoing meetings, summer workshops, and teacher resource centers. The research study included student surveys, test scores, writing samples, attendance scores, and teacher surveys from fall and spring of each school year. Humanitas students demonstrated higher conceptual and interdisciplinary understandings and higher quality writing overall. Even the lower achieving Humanitas students showed gains on the essay equivalent to the higher achieving students. Among lower achieving students, those in the program were less likely to drop out of school than those not in the program. Humanitas students showed significantly higher attendance, and the students were more likely to make positive responses on surveys than those not in the program.

The large scale of the Humanitas program suggests strong validity for such a program's benefits to urban, multicultural student populations. However, it is impossible to disaggregate the particular influence of the visual arts within such an integrated program. As opposed to a random sampling, the subjects’ voluntary participation in the program gives less validity to the study’s comparison of student outcomes. Furthermore, while the research showed a relationship between integrated arts education and student reading, writing, and affective response, the research did not indicate any corresponding progress on visual arts achievement itself.

The visual arts are often seen as a potent site for cultural exchange. Jovana and Olivera (2010) describe their action research wherein 170 Italian and Serbian students, ages 5-10, took part in the Feel Art educational program at two museums in Novi Sad, Serbia, and Palermo, Italy. Over a 6-month period, the program was

implemented through work with kindergartens and schools, exhibition tours, educational workshops, and presentations of student artwork. Tactile experiences with artworks were encouraged to develop students' sense of the varied materials used in art, such as bronze and wood. Children responded to artworks in the museum through independent drawings and question prompts on worksheets. The findings suggest that a museum context may be effective in supporting students' development of cultural identity and intercultural respect. The study model did not incorporate a control group, though, so the purported benefits to student motivation and art skills must be considered anecdotally. Likewise, the reported benefits of intercultural dialog created by the cooperation of these two institutions are not clearly substantiated in the study by statistics or even qualitative comparisons.

Research in two Portuguese 5th grade classrooms shows a more careful study of the effects of intercultural arts education (Lopes da Silva & Villas-Boas, 2006). While all the students in these classes were born in Portugal, 7 of the 29 students in the experimental class and 7 of the 27 students in the control class were of immigrant heritage. To assess student schema before and after the intervention, a "Draw-Two-Persons-Test" was administered wherein students were asked to depict one European and one non-European. Student drawings were evaluated as to the depicted persons' sizes and positions on the paper, the distance between the two figures, and the use of ethnic or distinguishing characteristics in facial features and clothing.

The experimental group participated in 10 instructional sections of 90 minutes each in which they analyzed the aesthetic properties of art objects from a variety of cultures. Multicultural art was introduced to the students by using posters, slides, videos,

art objects, music, and ethnic clothing presented by student family members. Results from student surveys and artwork showed a significant growth in intercultural respect in the experimental group. Problematically, though, students of immigrant heritage showed a heightened awareness of ethnic differences, with a corresponding decrease in these minority students' self-esteem.

While the focus of this study was on quantifiable differences, such as the square millimeter area of figures in the students drawing, the interpretation of this data remains somewhat subjective. Additionally, the unique Portuguese context of the study may restrict the findings from generalized validity in U. S. classrooms.

Research reviewed in this section suggests that arts education can benefit students' personal motivation and achievement in a multicultural setting. Additionally, the research gives some support to the claim that multicultural art education fosters cooperative behaviors and pluralistic perspectives. The previous studies have suggested a number of pedagogical issues that should be attended to within a multicultural art education curriculum. The following section assesses issues of concern to the classroom teachers who must provide such curriculum, including teacher training, classroom experiences, and pedagogical orientations.

Teacher Perspectives on Implementing Multicultural Art Education

The importance of teacher training can be critical in establishing an effective multicultural education program. Previous research has demonstrated that a simplistic approach of exposure to cultural diversity produced negative results as often as it decreased prejudice (Heard, 1990). Teachers often lack the intercultural understandings that they are supposed to

instill in their students. To analyze context specific problems in multicultural art education, Heard studied 17 teachers involved a variety of arts situations in New Jersey. The participants had varied educational backgrounds, with their length of teaching experience ranging from 0 to 22 years, with a mean of 8.2 years. Their teaching contexts varied from nursery schools and K-12 settings to nursing homes and programs for retarded adults.

Over the 16-week study, participants reflected on their teaching practice through discussion groups, interviews, questionnaires, journal entries, and photography. They reported many benefits from the program's focus on fostering teachers-as-researchers. The reflective practices reportedly helped teachers evaluate various instructional strategies and identify successes and struggles in the progress of individual students. While the research study did not comparatively assess the value of different pedagogies, it underlined the important role of ongoing reflection, research, and experimentation in refining a teacher's practices. The participants developed strategies of multicultural teaching that included gathering information on students' feelings and beliefs, modifying curriculum, researching alternative pedagogies, comparing student and teacher goals, as well as learning more about the cultures of students and colleagues. Though it offered an anecdotal and categorical analysis of teacher training in multicultural education, this constructivist study did not substantiate any quantifiable benefits to student learning or teacher performance.

Research by Dunn, Kirova, Cooley, and Ogilvie (2009) suggests that pre-service teachers are aware of the need to develop multicultural teaching practices, but feel unprepared and anxious about their ability to work effectively with classroom diversity. Pre-service teachers enrolled in an

undergraduate program at the University of Alberta were studied for one academic term, and their experiences were evaluated using student assignments, questionnaires, and interview transcripts. The participants included 8 students in a second language education class, 16 students in an early childhood methods class, and 32 students in an elementary art education class.

Field experiences were found to be important in exposing participants to student diversity, as this intercultural contact was lacking in the cultural background of most participants. The classroom experience helped participants develop non-language based teaching strategies as well as empathy for the challenges that ESL students face. An arts education component required participants to create sculptures, paintings, and masks that expressed their family's immigrant background, their concept of community, and their concept of contemporary immigrant experience. While the study provided insight into issues and methods of teacher training for multicultural education, it offered only anecdotal evaluation of the program's effectiveness. The influences of such training on the participants' future professional practices and student outcomes were not evaluated.

Teachers of multicultural art education endeavor to present art history through a broad survey of cross-cultural themes and media (Chalmers, 1996). In surveying artworks from many cultures, questions are often raised about fundamental definitions of art and beauty. The Eurocentric valorization of individualism and art-for-art's-sake may alienate students from other cultural backgrounds. Conversely, the work of contemporary artists of color that prioritizes social critique over aesthetics may cause confusion or discomfort in some White students. The research of Tapley (2001) examined how the choice of works shown in an art history course can stimulate

both intercultural understanding and reactionary alienation in students.

For the duration of an Art History II course she taught at the University of Wisconsin, Tapley (2001) analyzed 65 students' written and verbal responses to the work and biographies of artists of color such as Kara Walker, Jean Michel-Basquiat, and Guillermo Gomez-Pena. The results showed that many White students struggled to appreciate the aesthetic legitimacy of artworks that featured controversy and social unrest. However, many students were also alienated by the modernist and conceptual aesthetics of some European artists. Students generally began the course with a concept of aesthetics that valued visual pleasure and personal expression. In contrast, many of the featured works of artists of color focused on negative stereotypes of ethnicity and culture. The interrogation of stereotypes is often used to critically examine the overt and underlying biases of students and media culture (Chalmers, 1996).

Students responded that the artworks that played with stereotypes caught their attention primarily through shock value, but that these works also prompted students to rethink their attitudes and assumptions around cultural differences. Alternately, some students thought the use of extreme stereotypes perpetuated the negative cultural conceptions that they were supposed to critique. Some students felt that artworks that operated under the auspices of social criticism actually polarized intercultural difference rather than creating common understanding or harmony. Due to the particularities of the research subjects, setting, and curriculum, the research results cannot be clearly generalized outside of the specific context of the study.

Researchers Seltzer-Kelly, Westood, and Pena-Guzman (2010) have suggested that such a heightened awareness of

difference may be an appropriate goal for multicultural art education. Their research investigated student responses to an undergraduate course on multicultural art taught at the University of Nevada-Reno in 2007. Students viewed classical and modernistic artworks, such as Da Vinci's *Mona Lisa* and Warhol's *Brillo*, as well as the more informal arts of cartoons, graffiti, clothing, dancing, and tattoos. The course broadened the Eurocentric art canon to include works of Asian, Native American, and Australian artists. Five anonymous surveys were given to the 95 students before and during their academic quarter. These surveys asked students to express their views on beauty, diversity education, minority experience, and the role of stereotypes in shaping people's ideas and behaviors.

While the authors had hoped to catalyze an intercultural solidarity through the introduction of multicultural artworks, the surveys demonstrated that "people tend to relate only to those they perceive to be members of their same community" (Seltzer-Kelly et al., p. 453). Students' cultural attitudes remained largely fixed throughout the multicultural exposure, with one notable exception. An analysis of contemporary hip-hop culture prompted students to examine the underlying sexism and violence promoted by a culture many found personally relevant. The authors found that the quality of student writing in this course was superior to that seen in comparable courses, which was attributed to the welcoming of student's prior beliefs and evolving perspectives. Rather than intercultural harmony, the diverse artworks prompted many students to express an unresolved sense of difference and an awareness of the limitations of their understanding. The researchers propose that such a sense of inter-subjectivity is preferable to a sense of multicultural

“knowledge”, wherein Otherness is reduced to a known and finite value. This qualitative study lacked an experimental comparison of subjects and quantifiable outcomes, so the findings have little demonstrable validity to other educational settings.

The research outlined in this section reviewed preparations and responsive strategies that support teachers in developing their multicultural pedagogy. By considering the insights and challenges of their peers, teachers can strengthen their practice. Such professional development can help teachers responsively cultivate the motivation and achievement of their students.

Discussion

This paper reviewed relevant empirical research studies to investigate the use of multicultural education for improving achievement and motivation among diverse students in the visual arts. The findings of these studies offered insights into how arts education can benefit all student populations, and how arts education may need to be differentiated to address student diversity. Case studies of art education programs serving multicultural populations and/or presenting multicultural curricula provided contextual evaluations of student learning outcomes and teachers’ pedagogical strategies. The studies suggest strong opportunities to positively impact student learning, but also reveal persistent challenges and potential disconnects in multicultural visual art education.

The visual arts show potential for benefitting students in developing personal identity and cultural awareness, as well as skills in perception, composition, visualization, and communication (Chalmers, 1996; Efland, 2002; New, 2007; O’Thearling & Bickley-Green, 1996). Studio work creates an atmosphere of “controlled freedom” (Walker, 1997, p. 16)

where students can develop imagination, self-expression, and self-discipline while persisting towards mastery of a craft (Hetland, 2007). A visual arts education can have instrumental benefits that support student performance in a range of academic subjects including geography, math, reading, and science (Edens & Potter, 2007). Additionally, engagement in the visual arts can increase student involvement with the school community and extra-curricular activities (Walker, 1997).

The cultural diversity of students does not significantly affect their perceptual abilities or response to instruction in art technique (Richards, 1998). The artwork of geographically or ethnically distinct students can show common influences from international educational tropes and media stereotypes (Stockrocki & Coutinho, 2000). Cultural differences may have a profound effect on student motivation in the arts. Culturally influenced perceptions of professional prospects in the arts can decrease student participation and achievement through aspirational foreclosure (Charland, 2010).

The interdisciplinary integration of arts education has shown many benefits to multicultural student populations, including increased attendance, lower drop-out rates, higher quality writing, and greater conceptual understandings (Aschbacher & Herman, 1995). Use of multicultural curricula and instructional methods has shown positive benefits to intercultural dialog and understanding (Jovana & Olivera, 2010; Lopes da Silva & Villas-Boas, 2006). However, the heightened awareness of difference caused by some multicultural education programs can also result in lowered self-esteem among minority students. White students can be alienated by the polemical works of artists of color, and critiques of negative racial stereotypes can actually reinforce cultural Othering (Seltzer-

Kelly et al., 2010; Tapley, 2001).

Exposing students to intercultural curriculum does not guarantee intercultural harmony, and the establishment of pluralistic, multicultural classrooms requires real investment in teacher training, resources, and family/community integration (Chalmers, 1996). Pre-service teachers are often anxious about their ability to overcome the cultural mismatch between themselves and their students, and intercultural field experiences are a valuable part of teacher preparation programs (Dunn et al., 2009). Ongoing pedagogical practices of research, experimentation, reflection, and peer communication can help teachers develop their effectiveness as multicultural educators (Heard, 1990).

Conclusion

Student motivation and achievement in the visual arts can be fostered by making discipline content culturally relevant and by supporting student explorations of personal and cultural identity. Lesson planning should respond to assessments of students' backgrounds and interests, as well as the local community context. Local culture can provide a reference point when experiencing and evaluating global themes and roles of art. To overcome the limitations of the teacher's cultural encapsulation, students should be supported in pursuing their own areas of cultural interest and expertise. Group collaborations should be used to engage student voices, problematize unilateral assumptions, and teach both individual accountability and cooperative work. Students should come to understand that culture is not a discrete commodity to be consumed, but an ongoing dialog actively created by participants such as themselves.

The implementation of multicultural education in the visual arts should not displace the core DBAE standards of art

skills and knowledge, art history, art criticism, and aesthetics. Rather, the multicultural approach should use this disciplinary framework to investigate how art influences the development and perpetuation of human culture. By considering the social role of art in multiple cultural contexts, students are empowered to address culture-bound assumptions and bias while forming cross-cultural understandings. Such intercultural skills are crucial to participation in a pluralistic, democratic society.

Multicultural education is not intended to create a unified "melting pot" of cultural identity. Rather than dissolving differences or circumscribing the culture of others through study, multiculturalism teaches the multiplicity of perspectives and inter-subjectivity common to pluralistic societies. Multicultural art education can promote individual identity formation and meaningful collaboration across differences.

Further Research

Given the scarcity of empirical research in the area, further study of the influence of multicultural art education on student motivation and achievement in the arts is invaluable. The external validity of such studies would be enhanced by large sample sizes, diverse student populations, standardized assessment criteria, and experimental designs that clearly contrast intervention groups with comparable control groups. To accurately reflect achievement in the discipline, visual arts assessments should include both technical art skills and written evidence of understandings in art criticism, art history, and aesthetics. Further, students' current interest and future aspirations in art should be assessed to reveal patterns of motivation.

Research among African American students is particularly needed, as this population appears to be the most

underserved by contemporary visual arts education (Keiper et al., 2009). To be of the most value, such research should be conducted in public school settings, during school hours, using random or whole class student subjects. Conforming the research design to prevalent classroom conditions would increase the relevance and applicability of any interventions that prove beneficial. It would be advisable to have the same teacher oversee both the experimental and control classes so as to better isolate the curriculum variable and insure comparable instruction and assessment. Research studies that also assessed teacher experiences would contribute a valuable dimension to the study of multicultural visual art education.

References

- Aschbacher, P., & Herman, J. (1995). The Humanitas program evaluation, 1990-1991. In Welch, N. (Ed.), *Schools, Communities, and the Arts: A Research Compendium* (pp. 24-26). (Eric Document Reproduction Service No. ED 394 868)
- Banks, J. A. (1989). Integrating the curriculum with ethnic content: Approaches and guidelines. In J. A. Banks, & C. A. McGee-Banks (Eds.) *Multicultural education issues and perspectives*. Boston: Allyn & Bacon.
- Banks, J. A. (2009). Multicultural education: Dimensions and paradigms. In J.A. Banks (Ed.), *The Routledge international companion to multicultural education* (pp. 9-32). New York: Routledge.
- Chalmers, F. G., (1996). *Celebrating pluralism: Art education, and cultural diversity*. Santa Monica, CA: Getty Center for Education in the Arts.
- Charland, W. (2010). African American youth and the artist's identity: Cultural models and aspirational foreclosure. *Studies in Art Education: A Journal of Issues and Research in Art Education*, 51(2), 115-133. Retrieved from <http://www.naea-reston.org/research>
- Dimaggio, P. & Ostrower, F. (1992). *Race, ethnicity and participation in the arts; Patterns of participation by Hispanics, Whites, and African-Americans in selected activities from the 1982 and 1985 surveys of public participation in the arts*. Research Division Report #25, National Endowment for the Arts. Washington, DC: Seven Locks Press.
- Dunn, W., Kirova, A., Cooley, M., & Ogilvie, G. (2009). Fostering intercultural inquiry in subject-area curriculum courses. *Canadian Journal of Education*, 32(3), 533-557. Retrieved from <http://csse.ca/CJE/Articles/FullText/CJE32-3/CJE32-3-DunnEtAl.pdf>
- Edens, K., & Potter, E. (2007). The relationship of drawing and mathematical problem solving: "Draw for math" tasks. *Studies in Art Education*, 48(3), 282-298.
- Efland, A. D. (1976). The school art style: A functional analysis. *Studies in Art Education*, 17(2), 37-44.
- Efland, A. D. (2002). *Art and cognition: Integrating the visual arts in the curriculum*. New York, and Reston, VA: Teachers College Press and the National Art Education Association.
- Erikson, E. H. (1968). *Identity, youth, and crisis*. New York: W. W. Norton.
- Heard, D. (1990). How do teachers identify multicultural and cross-cultural pedagogical phenomena in and out of arts classrooms? *Educational Review*, 42(3), 303-318. Retrieved from ERIC database.
- Hetland, L. (2007). *Studio thinking: The real benefits of visual arts education*. New York: Teachers College Press.
- Johnson, L. (2008). Multicultural education.

- In T. L. Good (Ed.), *21st century education: A reference handbook* (pp. 308-315). Thousand Oaks, CA: SAGE Publications.
- Jovana, M., & Olivera, G. (2010). Intercultural dialogue in the museum context. *US-China Education Review* 7(7), 30-42.
- Keiper, S., Sandene, B. A., Persksy, H. R., & Kuang, M. (2009). *The nation's report card: Arts 2008 music & visual arts* (NCES 2009-488). Washington, D. C.: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.
- Lopes da Silva, J., & Villas-Boas, M. (2006). Research note: Promoting intercultural education through art education. *Intercultural Education*, 17(1), 95-103. doi: 10.1080/146759495
- New, R. S., & Cochran M. (Eds.). (2007). *Early childhood education: An international encyclopedia*. Westport, CT: Praeger Publishers.
- Nieto, S. (2003). Profoundly multicultural questions. *Educational Leadership*, 60(4), 6-10.
- Office of the Superintendent of Public Instruction (2009). *Washington state visual arts K-12 learning standards - draft*. Retrieved from <http://www.k12.wa.us/Arts/Standards/pubdocs/ArtsRefinedEALRsComponents2009.pdf>
- O'Thearing, S. & Bickley-Green, C. A. (1996). Art education and at-risk youth: Enabling factors of visual expressions. *Visual Arts Research*, 22, 20-25.
- Richards, A. (1988). Perceptual training in drawing among students from two countries. *Studies in Art Education*, 29(3), 302-308. Retrieved from <http://0-www.jstor.org.cals.evergreen.edu/stabl>
- e/1320812
- Rogoff, B. (2003) *The cultural nature of human development*. New York: Oxford University Press.
- Schlesinger, A. M. (1992). *The disuniting of America*. Knoxville, TN: Whittle Direct Books.
- Sleeter, C. E. (1995). An analysis of the critiques of multicultural education. In J. A. Banks, J. A., & C. C. M. Banks (Eds.), *Handbook of research in multicultural education* (pp. 81-94). New York, NY: Macmillan.
- Seltzer-Kelly, D., Westwood, S., & Pena-Guzman, D. (2010). Deweyan multicultural democracy, Rortian solidarity, and the popular arts: Krumping into presence. *Studies in Philosophy and Education*, 29(5), 441-457. doi: 10.1007/s11217-010-9190-y
- Stokrocki, M., & Coutinho, R. (2000). Sociocultural influences and issues in an art class for Brazilian preservice teachers. *Art Education* 53(1), 12-17. Retrieved from <http://0www.jstor.org.cals.evergreen.edu/stable/3193857>
- Tapley, E. (February, 2001). *Art of anger, art of humor: Reactions of white students to radical minority visual arts*. Paper presented at the meeting of The National Association of African American Studies, National Association of Hispanic & Latino Studies, National Association of Native American Studies, and International Association of Asian Studies, Houston, TX. (Eric Document Reproduction Service No. ED 478 050)
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Walker, D. M. (1995, November). *Connecting right and left brain: Increasing academic performance of*

African-American students through the arts. Paper presented at the annual meeting of the National Alliance of

Black School Educators, Dallas, TX.
(Eric Document Reproduction Service
No. ED 390 857)

Impact of Students' Emotions on Behavior and Academic Outcomes

This paper addressed the question, what is the relationship among emotions, behavior, and academic achievement? The chosen studies were selected based on research that examined emotions, behavior, academic achievement, and emotional disturbances. The ages of the participants varied from a range of 10 to 18. Participants included African American, Latino, Caucasian, and students diagnosed with emotional disturbances. The findings of each study demonstrated the connections between students' emotions and academic achievement and between emotions and behavior. There seemed to be a connection between family involvement, level of instruction of parents, social support from peers and family, involvement in bullying, and academic achievement. Neither race nor achievement of mainstream students is analyzed in any of the studies. Limitations about race and economic resources in students are discussed in the recommendations section. Based on this review, restriction of access to academic content and social interactions needs to be analyzed by teachers and administrators to avoid neglect students whose emotional intelligence skills are not well developed.

Emotions play an important role in every individual's life. In this paper, I discuss the relationship among emotions, behavior, and academic outcomes. I chose to learn more about emotions and how they relate to behavior and academic outcomes because, as a teacher intern, I observed that for some students, emotional distress governed their attitudes in the classroom. As a result, students could not control their emotions in an academic setting. I experienced students being frustrated and angry, and as a result, they would scream loudly showing disrespect for the classroom learning environment. Not only did I consider these reactions to be intense and out of control, but I wanted to learn where they came from because disruptive emotions did not allow students to focus and engage in with the assigned tasks. I wanted to understand the reasons for this unexpected behavior.

This topic is relevant to my future work as a teacher because I want to better

predict and understand how emotions affect student behavior, so I can make changes to the class learning. This topic is also of concern for educators, administrators, and parents because it can provide information about the traits of students who present challenging behaviors, which are different from those of their peers. This information can guide curriculum adaptations, as well as home support strategies to best serve these students who are struggling in the classroom.

Educators, administrators and parents can benefit from learning about proper identification of behaviors that characterize students with emotional distress and behavioral problems, as opposed to emotional disturbances in order to avoid incorrect referrals to special services, and to provide support for students who could struggle with graduating from high school. This will reduce drop outs and miserable long term outcomes for the students such as arrest, substance abuse, job instability, usage

of welfare and mental health services (Lane et al., 2005).

In this paper, I use the term emotional intelligence (EI) which refers to a person's ability to handle one's personal emotional life and other people (Goleman & Plant, 1998). This paper will not address the discrepancy of the many definitions of EI or the different ideologies around the concept. Rather, this paper focuses on the importance of knowing about EI, its relations to behavior and grade point average (GPA). The main focus of this paper is on students who are emotionally distressed. However, this paper includes participants who have been diagnosed with an emotional disturbance (ED). An ED is a disability outlined in the Individuals with Disabilities Education Act (IDEA) that describes children who constantly behave aggressively and as a result, cannot maintain satisfactory interpersonal relationships with peers and teachers. This paper includes studies that researched students with ED and the type of instruction they have received based on their placement. Some students with ED were placed in special education classrooms with other students with ED, while others were placed in schools for students with ED only.

Emotional intelligence is a concept rooted in the theory of social intelligence (Harrod et al., 2006). The main author of the theory of EI is Daniel Goleman (1995). Goleman has two definitions of EI, one definition denotes EI as the combination of factors that allow a person to feel, to be motivated, regulate mood, control impulse, persist in the face of frustration, and thereby succeed in day-to-day living. The second definition denotes EI as a "different way of being smart." According to Goleman, 80 % of a person's success in life is predicted by EI, while IQ predicts only 20%. Thus, in order to provide educational opportunities for students to succeed in school, attend post secondary education, be employed, and out

of jail, education should balance academic content with emotional intelligence skills (Lane et al., 2006).

To know about emotional distress and behavior benefits teachers, students, administrators, parents, and the whole community because as human beings, we need social interactions that lead to the construction of social networks. Without a balance in our emotions, the social system of interaction can collapse and result in a society incompetent of working cooperatively integrating all its members.

Literature Review

Previous research has analyzed the impact of emotions on behavior and on academic outcomes of children and adolescents. Studies included represent the vast field of investigation that needs to be conducted in order to confirm theories established by psychologists such as Goleman (1995). One major database, ERIC, was searched to identify research articles on emotional intelligence published from 1990 through 2010. Reference books were obtained from the library at The Evergreen State College. This section will identify the various contributions to education in regards to four subcategories: emotions and behavior, emotions and academic outcomes, emotions and emotional disturbances, and testing behavior.

Emotions and Behavior

The following compilation of research articles discuss about the relationship between emotions and behavior. This section contains three topics that talk about the relationship between emotions and disruptive behaviors, emotions and bullying, and emotions and suicidal ideation in Latino youth. Because of low rates of success in public schools and bleak long-term outcomes, it is apparent that students with emotion and behavioral problems present a

variety of complex and challenging behaviors (Benner et al., 2009).

A study by Esturgó-Deu and Sala-Roca (2010) analyzed the relation between disruptive behaviors and the emotional abilities of children in primary education. Researchers studied 1422 pupils aged between 6 and 12 years of age, and 69 teachers working in 11 anonymous education centers. A questionnaire was distributed to identify children that teachers identified as presenting disruptive behavior. The results did not find a relationship between disruptive behaviors and age, but one relationship was found between students' gender and emotional abilities. Boys presented more disruptive behaviors than girls. There was a significant relationship between disruptive behaviors and emotional intelligence. All the pupils who presented disruptive behaviors had lower scores for emotional intelligence and stress management skills than pupils who did not present disruptive behaviors. Children who were rated as higher in behavior problems showed deficits in emotional understanding and were less able to identify emotional signals (Esturgó-Deu & Sala-Roca, 2010).

The validity of this study is the questionnaire written by the researchers. The validity was reduced because results were drawn from personal opinion of one teacher only. The given information was subjective because of teachers' perceptions and assumptions about students at the time of the test. The strength of the study was to use the Reuven Bar-on's Emotional Quotient Inventory test (EQI) to measure emotional intelligence. Results were drawn from both tests to determine the relationship between emotional abilities and disruptive conducts.

A study by O'Brennan, Bradshaw, and Sawyer (2009) examined the association between frequent involvement in bullying and aggressive impulsivity, attitudes toward

aggressive retaliation, internalizing symptoms, peer relations, and perceptions of school climate. The researchers studied 24,345 students from elementary, middle, and high school in a large Maryland public school district over a three-week period in group format during school hours. Students participated by completing an anonymous web-based survey regarding their experiences with bullying, aggressive retaliatory beliefs, aggressive-impulsive behavior, social-emotional functioning, and perceptions of safety and belonging. Some questions were only asked to middle school or high school because of students' developmental stages and reading abilities. The testing session was led by the teacher and proctored by the guidance counselor or school psychologist to ensure that students were not discussing their answers and to reduce student distractions and interruptions.

The result of this study showed that children who bully or are involved in bullying tended to be at the greatest risk for displaying aggressive-impulsive behavior and social-emotional problems. Similarly, data supported that younger children (elementary and middle school), who were frequently involved in bullying, were more likely to report impulsive aggressive behaviors than high school students who are involved in bullying (O'Brennan, 2009). Also, children involved in bullying have more problems with internalized thoughts like sadness, loneliness, or worry. Data reflected that boys are more bullies or are involved in bullying than girls.

The results of this study linked behavior problems with bullying. However, a limitation of this study was that the term "bully" was defined on the survey, which may have biased some children's responses to the questions. Also, the study did not offer an examination of possible effects of genetics, personality, and family environment in bullying (O' Brennan,

2009). The sample size was large enough to draw conclusions from the answers of children who bully or are involved with bullying about their internalized thoughts.

There seems to be a correlation between emotions and suicidal ideation in Latino youth. In a recent article, Garcia, Skay, Sieving, Naughton, and Bearinger (2008) described a correlation between ethnicity and suicidal ideation and attempts. The study used 3178 respondents, selected from a data base from the Minnesota Student Survey (MSS) based on responses to a single 2004 MSS item on race/ethnicity. The 3178 students who indicated that they were (1) Mexican American or Chicano/a and/or (2) Puerto Rican or other Latin American were included in the sample. 70% of the total sample were in the 9th grade and the remainder in the 12th grade. Both grades were evenly split by gender, and the majority of respondents (64% of 9th graders; 72% of 12th graders) reported to be Latino-only versus Latino-mixed (35.6%; 27.8%). The measures of the study consisted of an analysis of a survey regarding suicide ideation and attempt in past year, levels of emotional distress in the past 30 days, levels of parents care, and levels of family connectedness (Garcia et al., 2008).

In the context of this article, Latino youth experienced disproportionate rates of mental health problems including suicide and depression compared to their white counterparts. The results showed that nearly 40 % of ninth-grade Latino-mixed females and 29 % of ninth-grade Latino-only females reported suicidal ideation in the past year. The ninth-grade Latino males and all Latino 12th graders reported lower rates of suicidal ideation in the past year than the ninth-grade females. The results also showed that all grade and gender groups reported substantially higher levels of mother communication than father

communication. For all groups of ninth-grade males and females, those whose fathers and mothers were not around were significantly more likely to report suicidal ideation in the past year than were those who were able to talk to with their parents. Low family connectedness was associated with suicidal ideation in all groups. The study suggests a greater concern for addressing mental health issues of Latino youth (Garcia et al., 2008).

The exploration of identity is not addressed and considered at the time of determining if a student categorizes as Latino. Thus, the conclusion that states that Latino youth are at risk of mental health problems is an overgeneralization of the population studied. Another factor to consider is the sample size in relation to the place it was taken. A sample of 3178 participants from Minnesota only, is less likely to hold true over the larger Latino population in the United States; therefore, concluding that all Latino students in the country who do not have connectedness with their family are associated with suicide and emotional distress is not accurate.

These three empirical studies showed a correlation between emotions and behavior in students with emotional problems. Disruptive behavior and emotional intelligence were significantly related. Boys presented both more disruptive behaviors than girls and lower scores for interpersonal skills and abilities in EI. Children who bullied or were involved with bullying had more internalizing problems like sadness and loneliness. Boys were more involved with bullying than girls. Latino youth who did not have family connectedness with their parents or a safe environment to express their emotions tended to have more suicidal attempts and ideations than their white classmates.

Emotions and Academic Outcomes

Emotions guide learning in all humans. If the emotional system in the body is not working properly, learning will not occur easily (Zull, 2002). The following empirical articles discussed the relationship between emotions and academic outcomes. Specifically, they addressed emotions and the amount of formal education parents attained; EI, verbal IQ, and Grade Point Average (GPA); and academic outcomes of students with learning disabilities (LD) and emotional disturbances (ED) in comparison to students in the main stream classroom.

Emotional intelligence and academic outcomes can be influenced by the level of education of the parents of students demonstrated by Harrod and Sheer (2005). In this study, there were 200 students from an age range of 16-19, in three Midwestern schools, two of the schools were rural, the other one private. The assessment was administered in an introductory or homeroom type class to ensure a more widespread sampling of the student body. Students that participated had previously turned in a consent form signed by their parents. The researchers showed that there was a significant positive relationship between emotional intelligence and parents' education. The higher the level of mothers' and fathers' education, the higher reported EI. Also, there was a correlation between EI and household income. The results implied that as a household income increased, so did EI scores. The study suggested that there was no significant relationship between EI and/or location of demographics. However, as stated previously, there was a correlation between education of the parents and level of EI (Harrod & Sheer, 2005).

This study presented an issue of validity by not considering important issues such as race and ethnicity of students and their parents. It could have been that the results of this study have to do with its

location and socioeconomic levels of the students studied, and not with the general population of the country that is not as homogenous as the sample studied.

Externalized behavior in the form of speech and social interactions can have a correlation with emotions. Hogan, Parker, Wiener, Watters, Wood, and Oke (2010) studied 192 students in the 10th grade in two schools in Southern Ontario, Canada, with two objectives. They were, first to find a correlation between verbal IQ, emotional intelligence (EI) and Grade Point Average (GPA) scores and second, to refine the understanding of how EI, peer social support, and family social support contributed to variability in GPA. Researchers divided EI into intrapersonal, interpersonal, adaptability, and stress management. All students volunteered to participate in the study by completing a questionnaire about their demographic characteristics, a youth version of the Bar-On Emotional Quotient inventory (EQ-i:YV) with 60 statements rated from 1 to 5 (very seldom, to very often true), 45 questions on the Social Support Behaviors Scale (SSB) based on their past experience, and three 10-minute tests for the Canadian Cognitive Abilities Test (Hogan et al., 2010).

Researchers found that in male adolescents, EI and peer social support predicted GPA and EI mediated the association between verbal IQ and GPA. In female students, EI, peer social support, and family support predicted GPA but did not mediate the association between verbal IQ and GPA. Their finding regarding the second objective was that adaptability and stress management (two aspects of EI) predicted GPA beyond verbal IQ, and gender. This research demonstrates how adolescents with well developed EI can obtain higher GPAs than those who have not yet developed their EI skills. As a result,

educating adolescents for success in adulthood requires education that fosters both academic and EI mastery (Hogan et al., 2010).

In Hogan's study the correlation between social support and academic outcomes was not always the cause for low academic success. Sometimes negative peer social support can have a negative influence on academic success, but it is not the only reason for a student to not succeed in school.

In a recent research article by Lane, Carter, Pierson, and Glaeser (2006) researchers examined the relationship between emotional disturbances and academic outcomes. Participants were 45 high school students with ED and 49 high school students with LD. These students ranged in age from 14 to 19 years. The majority were male. Researchers randomly selected 4 high schools from two large ethnically and culturally diverse southern California school districts that served students with ED. Researchers used a variety of psychometrically sound assessments like the Social Skills Rating System-Secondary Teachers Version (SSRS), the Walker-McConnell Scale of Social Competence and School Adjustment, the Woodcock-Jonson III Tests of Achievement, and the School Archival Records Search (SARS) (Lane et al., 2006).

Data analysis lead to the conclusion that students with emotional disturbances and learning disabilities experienced elevated dropout rates; and these outcomes served as indicators that these students may have had skill and performance deficits in academic, social, and behavioral domains that hindered their transition from school to adult life (Lane et al., 2006).

The specific nature of these deficits among adolescents, however, has been largely under-investigated, particularly among students with emotional disturbances. Not only do students with ED

perform below their peers, evidence has also indicated that academic skills in these students are lower than students with LD. Special attention is needed to students with ED because they struggle even more than students with LD. Additionally, results showed that teachers do not see students with ED as efficient as students with LD. Thus, teachers might not have provided enough resources and accommodations to their needs, and as a result, students with ED did not achieve higher levels on their grade point average (GPA) (Lane et al., 2006).

The accuracy of the diagnosis of students with ED and LD was not verified prior or during the study. The study did not include a group of typically developing students; thus, it was not possible to establish where students were academically according to their age and cognitive levels.

The three studies described explained the relationship between emotions and academic outcomes. Education of parents seemed to influence the level of academic achievement in their children. Verbal IQ and EI skills predicted academic success. Peer support predicted GPA in males, while in females, family support predicted GPA. Students with ED have lower academic achievements than students with LD.

Emotions and Emotional Disturbances

Under the umbrella of EI there is a space for students diagnosed with an emotional disturbance (ED). Recent attention has been devoted to the academic deficits that are characteristic of these students. Students with ED are noted for academic underachievement with levels of a year or more below grade level in all content areas (Lane et al., 2006). The following studies investigated the options of placement for students with ED and the academic and social outcomes from this placement, as well as teachers' perceptions of behavior of African American students with ED.

Every school treats their students differently and as a result, students receive education that varies across districts. Wagner, Friend, Bursuck, Kutash, Duchnowski, Sumi, and Epstein (2006) conducted a nationwide longitudinal study with 1212 students with emotional disturbances in elementary, middle, and high school. Students were randomly selected from 245 school districts and 30 special schools (for students with learning disabilities and emotional disturbances). Students who participated in the study attended general education, magnet, or charter schools across the country. Data about the students was collected in forms of surveys or phone calls (Wagner et al., 2006).

The findings indicated that students with emotional disturbances (ED) spent less time in general education than other students with other disabilities which suggested that the type of content material they were exposed to was not equal as students without disabilities. Also, the study found that there was a reduction of supports and services for students in high school grades as opposed to students in elementary school grades (Wagner et al., 2006).

The issue of validity in this study was instrumentation at the time of data collection. When researchers collected information from phone calls, the answers of the respondents might have been influenced by the person performing the survey.

Students labeled as emotionally disturbed can be placed in a classroom with other students with disabilities on general education campuses, or they can be placed in a school with other students who are also labeled as emotionally disturbed. Lane, Wehby, Little, and Cooley (2005) compared students educated in self-contained classrooms to students educated in self-contained schools to determine if the academic, behavioral, and social deficits of student education in the more restrictive

setting had greater deficits. The sample was comprised of 72 students (29 in self-contained classrooms, and 43 in a self-contained school), from 6 to 14 years of age in a southern metropolitan public school district. Students labeled as emotionally disturbed by the district and attending a self-contained school were sent a consent form with permission from the principal and those who returned it were part of the study. The district provided a matched sample of students who were enrolled in self-contained classes across the district. Students in the self-contained classes selected for possible participation were matched on primary disability category such as emotionally disturbed, learning disabled, etc. The study also included 37 teachers (9 from a self-contained school and 28 from self contained classroom) who were responsible for teaching the district's core curriculum and addressing district standards. Students were evaluated from multiple views during the school year using a range of psychometrically sound tools and procedures.

Researchers found that students educated in a self-contained classroom had higher academic skills than students educated in a self-contained school. Findings also indicated that there were no significant differences in the social skills of students receiving services in either setting. There were significant differences between the groups in terms of disciplinary contacts and narratives comments from the teachers, with the students in the self-contained school receiving significantly more disciplinary contacts and negatively worded items in their cumulative folders.

Additionally, students in self-contained classes had significantly higher levels of internalizing behaviors, such as social withdrawal, depression, obsessive-compulsive or selective mutism, than students in the self-contained school.

Internalizing behavior in students with ED could have been due to responses to the environment, personality, or to teacher's perspective. In addition, internalizing behavior was not as visible to capture as externalizing behavior was (Lanet et al., 2005).

Placements observed and examined in the study presented the assumptions that students with more significant academic and behavioral deficits were placed in the more restrictive setting. It seemed that these deficits were the only justification for placement instead of an appropriate screening test. Decisions of restrictiveness of placement for students with ED need to be determined on a concise consensus rather than on lack of tolerance and discipline control by teachers as it seemed to be the case in the study (Lane et al., 2005).

These two studies researched the placement options of students with ED and the outcomes from these placements. Students with ED can be placed in general education classes and have access to the same content material as students without ED; or students with ED can be placed in special education classes and receive limited academic instruction. At the same time, students with ED can be placed in self-contained classrooms with other ED students and socialize with the general body of students; or students with ED can be placed in self-contained schools where all the students have either an ED or LD. The less restrictive placement seemed to benefit the academic and social skills for students with ED.

There seemed to be a connection between emotional reactions and inappropriate behavior with the race of teachers. The study performed by Cullinam and Kauffman (2005) aimed to look a relationship between race of student and race of teacher to influence ratings of emotional and behavioral problem of

students with emotional disturbances. Researchers studied 769 students with emotional disturbances and their teachers in 31 states representing all U.S. census regions. Participants were chosen from elementary, middle school, and high school. Their race status was either African American (n=245) or European American (n=524). Students of other race-ethnic status were not included in the present analysis. At each school level 32 % of study participants were African American. Also, approximately one in five students with ED was female; thus, at each school level 20 % of participants were female students (Cullinam, 2005).

The students that participated in the study were rated by educators, mostly teachers, in a few cases their counselors or school psychologists. The educators completed a rating scale about each student's emotional and behavioral problems addressing the five characteristics of ED and socially maladjusted. The raters self-identified either black or white race status. Educators of other race-ethnic statuses were not included in the analyses due to small numbers. Black teachers provided data on 11 % of the students (n=82), white raters provided data on 89 % (n=687) (Cullinam, 2005).

A general finding in the study is that the teacher's perceptions of students' emotional and behavioral problems varied depending on the emotional and behavioral problem of the student. Differences by student race were found on two dependent variables. On unhappiness or depression and physical symptoms or fears, European American students with ED showed greater problems than African American students with ED. Differences by school level were found on three subscales. On inappropriate behavior and unhappiness or depression, middle school students showed more problems than elementary school students,

and high school students did not differ from elementary. On socially maladjusted, middle and high school students showed more problems than elementary students, but high school and middle school students did not differ (Cullinam, 2008).

The findings of the study need to be applied with caution to other populations because the study addressed only two race-ethnic groups of both students and teachers. The sample included a relatively small number of Black teachers of students with ED. Also, the study data was based on students who had already been identified with ED. Therefore, the results cannot be applied to students of other race-ethnic groups or to students without disabilities in general.

Testing Behavior

Students need to be carefully diagnosed when they present a behavior conduct that is different from that of mainstream students. Schools are conscious of the difficulty in accurately identifying the presence of behavior disorders in students and rely heavily upon behavior rating scales to identify students who would benefit from behavioral supports to improve school performance (Benner et al., 2009).

In a recent study by Benner, Uhing, Pierce, Beaudoin, Ralson, and Mooney (2009), the validity of the Systematic Screening for Behavior Disorders (SSBD) was tested by analyzing the data of 65 public school students receiving special education services for ED in an urban northwestern city. Ages of students ranged from 12 to 20 years. The study compared the results of the SSBD with the results of the Achenbach Child Behavior Checklist-Teacher's Report Form (TRF). Thirteen special education teachers serving students with ED in self-contained classrooms completed the SSBD and TRF for each participating student. The results showed a potential use of the SSBD

to be a valid measure of the behavioral functioning of students with emotional disturbances from K-12. Behavioral conduct that affected the performance of students in school can be addressed by using the SSBD test as it has been proved to be a valid measure of behavioral functioning in the study described by Benner.

There were limitations within this study. First, the 9 schools in which all of the participants were enrolled were located within the same northwestern city in the United States. Thus, it may not be generalizable to other areas of the US. Second, the majority of data was collected from middle school. Data collection from elementary and high school might have shown different results. The strength of the study refers to the positive correlation found between the TRF and the SSBD. There is a more scientific and professional resource to diagnose students who present disruptive behavior in the classroom.

Discussion

The investigated studies in this literature review explained a possible relationship between emotions, behavior and academic outcomes in students who are emotionally distressed, and in students who are emotionally disturbed. Emotional intelligence seemed to affect the behavior of students and their academic achievement. There was a connection between gender and emotional intelligence skills. Esturgo and Sala-Roca (2010) found that boys need more attention because they cannot control their stress and interpersonal skills as girls did. O'Brennan et al. (2009) also found that boys were more involved in bullying than girls, and by participating in bullying, their behavior became more internalized and showed more frustration and aggressiveness than girls. Hogan et al. (2010) found that male adolescents paid more attention to peer

support to predict GPA, while females paid more attention to family support.

Age was not significant to define EI, but education of parents helped predict GPA as studied by Harrod et al. (2005). The more education the parents had, the higher level of GPA of their children. Family support seems to also affect suicidal thoughts in female and male Latino youth. The more connected adolescents felt with their parents, the less thoughts or intents to suicide they had.

Race of students seemed to affect the way teachers viewed their students in regards to behavior. African American students were regarded as happier and less depressed than their White counterparts. Teachers believed that African American students had more behavioral adaptations than White students, but data reflected the opposite (Cullinan & Kauffman, 2005).

It appeared that students with ED are alienated from the rest of the student body even by students with LD. Teachers do not pay the same attention to students with ED than to students with LD or other disabilities. Students with ED are viewed as less competent even when test results show the contrary. Students with ED struggle more than students with other disabilities, but tend to be more ignored (Lane et al., 2006). Placement of students with ED in restrictive settings seemed to have affected negatively their social and academic skills (Lane et al., 2005).

Conclusion

There was not a clear answer about the relationship between emotions, behavior, and academic achievement. Emotions, behavior, and academics can be affected by so many different factors including EI skills, peer and family support, and education of parents. A future analysis of influence of race and economic status will help clarify the answer to this question.

Based on this review, there were several aspects that can affect the relationship between emotions, behavior, and academic achievement such as education levels of parents, and family or social support. More research needs to be done in regards to effects and correlations of race in students who are emotionally distressed. This literature review suggests that students who are properly diagnosed with ED are placed in either restrictive or non restrictive settings. However, further research can explain placement for students who are mislabeled as ED while they are emotionally distressed.

References

- Benner, G., Uhing, B., Pierce, C., Beaudoin, K., Ralson, N., & Mooney, P. (2009). An extension convergent validity study of the "Systematic Screening for Behavior Disorders" and the Achenbach "Teacher's Report Form" with middle and high school students with emotional disturbances. *Journal of At-Risk Issues, 15*(1), 9-15.
- Cullinan, D., & Kauffman, J., (2005). Do race of student and race of teacher influence ratings of emotional and behavioral problem characteristics of students with emotional disturbance? *Behavioral Disorders, 30*(4), 393-402.
- Esturgó-Deu, M., & Sala-Roca, J. (2010). Disruptive behavior of students in primary education and emotional intelligence. *Teaching & Teacher Education, 26*(4), 830-837.
- Garcia, C., Skay, C., Sieving, R., Naughton, S., & Bearinger, L. (2008). Family and racial factors associated with suicide and emotional distress among Latino students. *Journal of School Health, 78*(9), 487-495.
- Goleman, D., & Plant, S., (1998). *Emotional Intelligence: A New vision for Educators* [videocassette]. United

- States: National Professional Resources.
- Harrod, N., & Scheer, S., (2005). An exploration of adolescent emotional intelligence in relation to demographic characteristics. *Adolescence*, 40(159), 503-513.
- Hogan, M. J., Parker, J. A., Wiener, J., Watters, C., Wood, L. M., & Oke, A. (2010). Academic success in adolescence: Relationships among verbal IQ, social support and emotional intelligence. *Australian Journal of Psychology*, 62(1), 30-41.
- Lane, K., Wehby, J., Little, A., & Cooley, C., (2005). Academic, social, and behavioral profiles of students with emotional and behavioral disorders educated in self-contained classrooms and self-contained schools: Part I-Are They More Alike Than Different? *Journal of Emotional & Behavioral Disorders*, 30(4), 349-361.
- Lane, K., Carter, E., Pierson, M., & Glaeser, B. (2006). Academic, social, and behavioral characteristics of high school students with emotional disturbances or learning disabilities. *Journal of Emotional and Behavioral Disorder*, 14(2), 108-117.
- O'Brennan, L., Bradshaw, C., & Sawyer, A., (2009). Examining developmental differences in the social-emotional problems among frequent bullies, victims, and bully/victims. *Psychology in the Schools*, 46(2), 100-115.
- Sacks, O., (2000). *Seeing Voices*. A journey into the world of the deaf. Vintage Books, NY.
- Vaugh, S., Bos, C., & Schumm, J. (2007). Teaching students who are exceptional, diverse, and at risk in the general education classroom. Pearson Education, Inc. Boston, MA.
- Wagner, M., Friend, M., Bursuck, W., Kutash, K., Duchnowski, A., Sumi, C., & Epstein, M. (2006). Educating students with emotional disturbances: a national perspective on school programs and services. *Journal of Emotional and Behavioral Disorders*, 14(1), 12-30.
- Zull, J., (2002). *The art of changing the brain*. Enriching teaching by exploring the biology of learning. Stylus Publishing, LLC. Sterling, VA.

The Role of Feedback in the Self-Efficacy of Elementary Students: ‘Good Job’ Is Not Enough

The role of feedback in elementary students’ appraisal of self-efficacy in learning tasks is discussed. After presenting an overview of self-efficacy theory, the relationship between learner identities and self-efficacy is outlined. Research studies which have investigated the effect of specific forms of teacher feedback on self-efficacy are reviewed, including attributional feedback and learning process centered feedback. Studies reviewed were conducted with elementary students. Results of studies reveal differences in how students interpret feedback based on age, learner identity, and culture. Correlations between the effects of attributional feedback on both self-efficacy and learner identities are highlighted to draw attention to the potential for this type of feedback to enhance or detract from these student appraisals of competence. Recommendations are made for classroom practices which foster goal-oriented instruction with strategy use to support feedback which is specific to learning processes.

Academic achievement is evaluated continually in an elementary classroom, by teachers and students. There is a continual interplay between the feedback that students receive from the classroom environment, their conceptions of competence and approaches to learning, and their resulting academic experiences (Dweck, 1986; Schunk, 1991). The reasons that students give for success or failure in academic achievement can provide teachers insight into students’ unique conceptions of competence. This insight can inform teachers of the types of feedback that will most effectively support students’ developing self-efficacy and motivated approaches to learning in the classroom.

In my experience student teaching, I found that feedback was not a one-size-fits-all aspect of my practice. Students listened intently to the comments, suggestions, and instructions that I gave to individuals and the class as a whole. There were times when my comments were a one-way communication from myself to a student, and others in which they were part of a

conversation that included the student’s reflections. A comment made to one student could result in a positive response, while the same comment to another may result in a different conception of meaning altogether. I found myself questioning how well my intentions were aligning with the outcomes of my feedback. Without being able to read the inner thoughts of individual students, I was left with the hope that my feedback was building a ‘can do’ attitude towards learning. In response to this lingering question, my research this quarter will focus on research-based suggestions for the types of feedback that are most effective in supporting students’ conceptions of competence in learning activities.

This literature review will begin by defining self-efficacy and outlining the factors that may contribute to its development. From this general framework, I will present research that looks at how feedback is given in classrooms and the ways in which students interpret and use it. Furthermore, I will present studies that investigate the relationships between learner

identities, self-efficacy, and motivation as related to feedback in the classroom. In addition, I will review research studies that investigate the reasons given by students and teachers for success and failure in achievement and how attributional feedback can reinforce or negate students' causal conceptions. Finally, I will present research studies which show that teaching strategy use and giving progress feedback can positively influence self-efficacy throughout subject areas.

There is some debate among researchers regarding the types of feedback that are best suited to students based on learner identity, age, and experience. While some researchers emphasize the need for feedback that is focused on effort alone, others suggest that caution should be taken regarding when and to what extent this type of feedback is given (Dweck & Elliot, 2005; Schunk, 1983). These ideas stem from the differences of conception that exist among individual students. While these areas of current research stress variations in uses of attributional feedback, there is no debate as to the goal of teaching students to be lifelong learners who approach academic achievement with self-efficacy.

There are several factors related to how students appraise their self-efficacy that will not be reviewed in this paper. First, feedback in the form of reward systems and normative evaluative formats such as homework or tests will not be included. Also, while researchers emphasize the important role that experiences of success have in the appraisal of self-efficacy, there are not studies in this review to document the impact of this factor alone. Furthermore, the value that students give to an outcome also plays a role in their motivation, effort, and persistence in tasks (Bandura, 1977). While teachers' classroom practices and feedback may influence perceptions of value, this paper will not review the

influence of these perceived values of outcomes on motivation and self-efficacy.

Literature Review

Self-Efficacy Theory

Throughout the 20th century, researchers within various theoretical domains have asked what motivates people in achievement settings. What makes people take risks or avoid potential failure? Research has stemmed from the idea that what we expect to happen in a situation plays a role in behavioral instigation, direction, effort, and persistence (Weiner, 1979). Albert Bandura (1977) introduced the concept of self-efficacy in defining motivation within his social learning theory. He postulated that when we encounter a task, we assess what behavior is needed to perform it, and then we appraise our sense of competence in performing successfully. It is that appraisal that constitutes our sense of self-efficacy for the particular task. In the school setting, whether a student approaches a learning task with eagerness or avoidance is directly influenced by their sense of self-efficacy and therefore, it plays a significant role in developing both competence and motivation.

Formation of Self-Efficacy

Rather than a single disposition, self-efficacy beliefs are multidimensional and differ according to the domain of a given task (Zimmerman, 2000). A student may feel confident in his or her ability to perform a math task, yet lack confidence in writing a paragraph. In a review of literature on self-efficacy development, Schunk (1991) states, "An individual's own performances offer the most reliable guides for assessing self-efficacy. Successes raise efficacy and failure lowers it, but once a strong sense of self-efficacy is developed, a failure may not have as much impact" (pg. 208).

Schunk (1991) outlined how self-efficacy might operate during a classroom learning activity. Each student in a classroom will begin an activity with different beliefs about his or her capabilities to perform skills, gain knowledge, and generally show competence. The student's self-efficacy varies according to unique aptitudes and prior experiences. In addition, while students are involved in an activity, they are affected by both personal and situational factors related to the milieu of the classroom environment. Personal factors include such things as the difficulty of the task, the level of effort put into it, the assistance received, the conditions under which the task was performed, the student's emotional and physical state, and perceptions of improvement over time. Prominent situational factors include external rewards, social comparison, and teacher feedback. These factors are interrelated and provide information to students in assessing how well they are learning during an activity, which in turn provides experiential feedback for appraising self-efficacy in future learning (pg. 209).

The Relationship of Self-Efficacy and Learner Identities

Learner identity and self-efficacy are closely linked in approaches to learning. Whereas learner identity can be seen as a more general self-concept and self-efficacy as specific to learning tasks, both are conceptions of ability that impact how a student approaches a learning task. Elliot and Dweck (2005) outline the two major categories of learner identity as mastery-oriented and learned helpless. Students who are identified as mastery-oriented view learning as an incremental process and perceive effort as a means of achieving competence. Conversely, students identified as learned helpless view ability as a fixed

trait and are seen to set goals which avoid perceived potential for failure. It is hypothesized that a student's learner identity may then frame how they interpret the feedback that is given to them (pg. 56). A student who perceives that they have a limited capacity to learn may see effort feedback as a confirmation of their perceived lack of ability.

Causal Attributions and Attributional Feedback

Many of the studies reviewed in this paper have focused on the attributions that students give to their experiences of success and failure. The most common of these attributions are ability, effort, difficulty of task, and luck (Weiner, 1979). In addition to individual perceptions of causes of outcomes, students *receive* attributional feedback directly from teachers and significant others. Researchers have given particular attention to attributional feedback in the classroom and how it functions in the development of self-efficacy. Attributional feedback ties a cause to an outcome, such as relating success to ability or effort. How students interpret this type of feedback may be influenced by their age, their learner identity, and the value that they give to it. While younger children are seen to associate ability with hard work, older students have developed differentiated conceptions of ability and effort and may begin to hold beliefs that effort implies lack of ability (Folmer, et al., 2008). Researchers have investigated the types of feedback students get in the classroom, how age and learner dispositions influence interpretations of that feedback, and the types of feedback that are most beneficial to the development of self-efficacy.

Student Conceptions of Feedback

To determine student conceptions of praise and feedback in the elementary school

setting, a small scale qualitative study was conducted by Burnett and Mandel (2010) in Australia. Using interviews and classroom observations, researchers investigated three questions: (1) what are the students' perspectives of effective types of praise? What are their responses to these types of praise? Do they prefer ability or effort feedback? (2) What are teachers' perspectives of the use of praise or feedback in their classrooms? And, (3) how often do teachers use praise and feedback in their classrooms? Four categories of praise and feedback were measured, including: ability feedback ("You are a good reader"), effort feedback ("You have been working hard"), general praise ("Good work"), and negative statements ("That's not good enough").

Overall, the students in this study demonstrated a preference for effort feedback (57%) over ability feedback. However, there were discriminations made in age groups, with older students (grades 3-6) wanting effort feedback when a subject was difficult for them and wanting ability feedback in areas they felt confident in due to prior experience. Younger students (grades 1-2) preferred both ability feedback and praise for their behavior, described by them as being good in class, sitting up straight, listening to the teacher, being nice, and following instructions. They also preferred getting tangible rewards, such as stickers and stamps. By grade 3, students responded that they preferred praise aimed at their academic behavior, such as getting their work done on time, trying their best, and having a positive attitude, suggesting a shift in perceptions of effort and ability as related to their classroom performances. Additionally, most students responded that they preferred to be praised privately rather than publicly.

In looking at the types of feedback and praise observed in the classroom, these researchers found that teacher's pre-study

perceptions of the feedback they gave in their classrooms did not match what was actually observed. Most of the teachers reported giving effort feedback and general praise often and consistently in their classrooms. In general, non-targeted praise was most used. In addition, only 6% of the feedback given to children was for effort and it was given publicly. The teachers who had taken part in the study reported surprise at these results, suggesting that the type of feedback and the way in which it is given may not match a teacher's own perception of their verbal responses in the classroom.

This study may be limited in informing the question of feedback in U.S. classrooms due to the small sample size of students and teachers and that it was conducted in Australia. While the researchers suggest that the participants were of European descent and therefore may reflect similar cultural contexts as individuals living in the U.S., there may still exist cultural variations in how students interpreted causal attributions. However, the disparity between the types and amounts of feedback teachers perceived they were giving and the measurements taken in the classroom observations are notable and do not appear to have limitations beyond the small scale of this study.

In a similar study, Burnett (2002) investigated the relationships between teacher praise, attributional feedback and students' resulting conceptions of the classroom environment and relationship with their teacher. A large sample of students in grades 3 through 6 from six rural elementary schools in Australia were chosen for the study. The schools were predominantly lower middle-class and most students were of European descent. Questionnaires were used to measure the amount of ability feedback, effort feedback, negative feedback, and general praise that students received from their teachers,

satisfaction with the classroom environment, and students' relationship with their teacher.

Researchers found that feedback influences students' relationships with teachers and their perceptions of the classroom environment. Students that reported receiving more negative feedback described negative relationships. However, students who received more effort feedback reported positive relationships with their teacher. General praise was not related to students' perceptions of the classroom environment or their relationship with the teacher. This is important, given that general praise has been found to be a prevalent form of feedback in elementary classrooms.

This study may have limited applicability to classrooms in the United States, given that it was conducted in Australia. Cultural interpretations of effort, ability, success, and failure may vary. In addition, the perceived relationships between teacher and student may have sociocultural variations.

Jain, Bruce, and Stellern (2007) investigated the effect of different types of attributional feedback on self-efficacy judgments among a group of 12 to 14 year old students in India. This group of 192 students, both boys and girls were chosen for the study because they had been identified as 'deficient in mathematical ability.' Self-efficacy in solving a type of mathematical problem was measured using a self-efficacy scale developed by Bandura and Schunk (1981). Differences in pretest and posttest beliefs about self-efficacy were evaluated based on the existence of four attributional feedback conditions: ability linked to prior achievement, effort linked to prior achievement, ability *and* effort, and no attributional feedback.

Results of this study found that effort feedback was the most effective for raising the self-efficacy beliefs in students. Ability feedback was the second most positive

influence, ability-effort feedback came in third, and those who received no feedback had no change in their ratings.

The applicability of this study to the question of feedback in elementary classrooms in the U.S. is limited in that it was conducted in India and the participants were older students. However, the measures used in the study were developed by researchers in the United States and the results reflect those found in other studies. Additionally, this study focused specifically on feedback given for prior performance, rather than feedback aimed at future performance. While the findings support those of other researchers in suggesting that effort feedback based on prior performance has a positive impact on self-efficacy, it does not offer comparable data for feedback that suggests future performance ("you put effort into this task, therefore you accomplished the goal" vs. "If you put effort into the task, you will be able to accomplish the goal").

Research has also focused on whether cultural differences may impact how students interpret causal attributions. A study was conducted by Liu and Yussen (2005) to examine similarities and differences in elementary student's attributional beliefs related to achievement among urban Chinese, rural Chinese, and suburban American schools. 1720 students were chosen from 2 Beijing schools, 2 rural Chinese schools, and from a suburban Los Angeles school district. Data was analyzed in four categories to examine: (1) the comparability of latent structures of perceived control among the different groups; (2) the impact of the cultural difference as well as the increase in grade level on the development of perceived control beliefs; (3) the developmental patterns of global control expectancy and attributional beliefs across grade levels; and (4) the relationships between the dimensions

of perceived control beliefs and school performance.

While the findings of this research may be limited to interpretations of Chinese and urban U.S. culture, their importance to the question of feedback in the classroom is in validating differences of interpretation of commonly used attributes of ability and effort. The results of the data analysis showed latent structures of perceived control beliefs for Chinese and American students were similar. However, several noticeable differences were shown relative to perceptions of luck, effort, and ability. Whereas American students reported some correlation between luck and outcomes, Chinese students did not. The researchers suggest that these conceptions of the role of luck are culturally-based, with Chinese culture viewing luck as neither a personal trait nor a dependable instrument in measuring achievement. However, American culture often refers to luck as a potential factor in outcomes, seen as either a personal trait (“He’s lucky”) or a second-order aspect of agency when combined with effort or ability (“good luck on the test!”). In addition, differences among the American and Chinese groups existed for their perceptions of ability and effort, with Chinese students reporting higher perceptions of effort in performance in grades 3-6, while American students rated ability as the highest attribution to performance. The researchers suggested that these differences reflect the cultural norms of Chinese students being more ‘effort-oriented’ and American students more ‘ability-oriented’. This study suggests that while some dimensions of perceived self-efficacy are developmentally similar across cultures, perceptions of causal attributions may differ depending on the cultural context. This research supports sociocultural learning theory and the interrelationship between personal constructs of identity and

the external influences that exist in the school setting.

The overall results of these studies suggest that praise and attributional feedback are common features in elementary classrooms and that these forms of feedback are interpreted by students differently according to age, learner identity, and culture. Effort feedback based on past performance showed the highest positive correlation with self-efficacy. In addition, teacher perceptions of the types and amounts of feedback given in a classroom may not be accurate, as demonstrated through interviews and observations in classrooms. These results suggest that what teachers intend to convey to students through praise and attributional feedback is dependent on student interpretation and thus may impact self-efficacy negatively. In addition, student age plays a role in how feedback is interpreted and thus, how it affects self-efficacy.

Learner Identities and Attributional Feedback

Research has focused on the relationship between learner identity and attributional feedback. To support a hypothesis that learner identity mediates student perceptions of causal attributions, Hokoda, Fincham, and Diener (1989) conducted a study to investigate the effects of social comparison feedback on learned helpless and mastery-oriented student’s attributions, behavior, and affect following an experience of failure.

Fifth graders from 3 elementary schools in a Midwestern town participated in the study. After assessment of learner orientations and achievement motivation, students were asked to solve a series of puzzles, not knowing that some were insolvable. Following the resulting failures to solve the puzzles, groups were given social comparison feedback in 3 conditions:

some got personal failure feedback that compared their scores to other fifth graders who had scored higher, others got group failure feedback which compared their low scores with similar low scores of another fifth grade group, and a third group received no social comparison feedback. Students' affects and the reasons they gave for their failures were measured.

Due to the fact that this study only looked at students in the fifth grade, results may be limited to this age group. Conceptions of ability and effort become more differentiated in upper elementary grades and therefore, children in earlier grades may vary in their interpretations of socially comparative feedback.

The results of this study confirmed the research of others regarding learned helplessness; children identified as learned helpless both discounted their successes by attributing them to external factors and disregarded social comparison information that implies task difficulty. Conversely, students identified as mastery-oriented, when given group failure information made appropriate attributions of task difficulty. With personal failure or no comparison information groups, no differences were found between those identified as mastery-oriented or learned helpless. Both groups attributed the failure to ability rather than task difficulty. These researchers suggest that this study replicates others in finding that students identified as learned helpless consistently display self-derogatory attribution bias in their assessments of performance. Mastery-oriented students, however, appear to make appropriate connections to performance across the attributes specified in the study.

The results of this study could be limited in applicability of results across age groups in elementary school, as it was conducted with fifth graders. Students at this grade level are beginning to form distinct

conceptions of ability and effort, whereas younger children may have little to no differentiation between these causal attributions. While these studies did not specifically measure self-efficacy beliefs of students, the results show that causal attributions are influenced by learner identity and are factors used in the appraisal of self-efficacy (Dweck, 1986; Schunk, 1991).

Teacher Influence on Attributional Perceptions

Researchers have sought to determine whether students can be retrained in how they appraise the causes of success and failure. Horner and Gaither (2004) conducted an investigation into whether attribution retraining instruction (ARI) embedded into a 2nd grade math class could guide students to attribute their successes or failures to effort or lack of effort and further, *not* attribute them to uncontrollable factors, such as ability and luck. For this study, two 2nd grade classrooms were chosen from an urban elementary school. None of the students received special education services, and none were identified as gifted. Students were predominantly African American and of lower socioeconomic status. Two classrooms were given the same math lessons over a period of eight days. One class had the attributional retraining instruction which included four components: specific strategy review; modeling and guided discussion on perceptions of attributions; individual practice using the specific strategy with self-talk; and teacher feedback on effort. During the modeling of mistakes with guided discussion, the teacher modeled making a mistake, asked students if they thought it was because of ability, effort, difficulty, or luck. The teacher then stated it was because she hadn't used effort. She modeled solving the problem correctly using self-talk for strategy use and effort. Self-talk

consisted of stating the steps of the strategy out loud and saying statements such as, "I will try even if it's hard" and "I'll take it one part at a time." In the giving of effort feedback, the teacher commented on both the successes and failures of the students as they worked individually on problems. Statements for successes included "You got that right. That means you tried hard." When a child was incorrect, the teacher stated such comments as "No, you didn't get that correct. If you try harder, you will be able to get the right answer."

The results of this study showed no differences between the two groups on attributing their successes or failures to effort after one received the ARI. However, they did find a significant decrease in the attributions to uncontrolled factors such as ability and luck from pretest to posttest in the ARI group. The researchers noted that their results may have been impacted by the choice to include students who had started the experiment with the highest possible ratings for attributions for effort, making them unable to show whether they had any further increase following the ARI. In addition, they noted that the teachers in both classrooms reported difficulty in providing the amount of continual feedback necessary for the experiment. They also noted that previous ARI research has shown positive correlations between ARI and increase in student attributions for effort but these studies have been done in experimental conditions outside of the regular classroom setting.

Many research studies have focused solely on attribution feedback that is given to students by teachers. In a study conducted in Chicago, Yasutake, Bryan, and Dohrn (1996) investigated the effect of attributional feedback training on elementary students in a peer tutoring setting. They aimed to determine if the students who were trained to tutor peers using attributional progress

feedback would also internalize the idea that strategy use coupled with positive statements of progress can improve a person's capabilities. Students identified as LD and at-risk for referral were assigned to tutor students who were average achievers and 2 years younger. The tutors were trained to give attributional feedback that combined ability and effort when tutees gave correct responses to questions. They were given cue cards for this and were instructed to record each time they gave the feedback or a strategy statement, helping them to self-monitor and focus on these two interventions.

This study is limited in its applicability to the question of teacher feedback as an influence on self-efficacy, in that it looked only at the effect of feedback given by peers. However, the results of the data suggest that attribution training combined with peer tutoring can positively influence third through eighth grade students' perception of competence. Both the tutors and the tutees exposed to ability plus effort feedback perceived themselves more positively in academic skills and behavior, relative to those who were exposed to strategy training only. Researchers noted that students' attributions, while positive, were more generalized than expected or desired, as students generally applied the positive feedback to both correct and incorrect answers. They noted that this was a factor that was difficult to account for, as students placed in peer situations were less likely to interpret and respond to inaccurate responses.

Strategy Use and Progress Feedback

Appraisal of self-efficacy is strongly influenced by performance experiences and having the requisite skills to accomplish a task is necessary in experiencing success (Schunk, 1991). Researchers have therefore focused on the relationship between strategy

use and progress feedback as means of improving goal setting, persistence, and effort in academic achievement. In referring to Bandura's research, Schunk (1991) asserted that, "given adequate skills, positive outcome expectations, and personally valued outcomes, self-efficacy is hypothesized to influence the choice and direction of much human behavior" (pg. 209).

Schunk & Gunn (2001) conducted a study to determine how children's self-efficacy beliefs were influenced by student attributions for task success and how task strategies influenced those perceived attributions. Third graders from two middle-class elementary schools were chosen based on their lack of division skills. They received specific strategy training and practiced solving problems. To measure their use of strategies, children were instructed to verbalize all thoughts they had throughout problem solving sessions and these were recorded. On the third of four consecutive training days, children's attributions for their problem solving during training were measured. Children were asked to rate themselves on ability, effort, task difficulty, and luck. They were advised to think about their work doing the division problems and mark how much they thought each factor helped them to solve the problems. A posttest was given for self-efficacy and division-skills.

Given that this study was limited to students in the third grade, the findings may be reflective of developmental age and experience in mathematics. Students at higher grade levels may approach mathematics with greater resistance due to prior experiences and thus rate their causal attributions differently.

The findings from this study indicate that students who believe that they can successfully use task strategies in learning tasks experience higher self-efficacy for performing well on the task. Their self-

efficacy is then validated when they employ strategies while working on a task and experience success in solving problems. "Successful problem solving is a prominent cue in formulating ability attributions and is also associated with perceptions of lower task difficulty" (Weiner, 1974). Thus, students who experience facility in problem solving should place less emphasis on effort and luck as causes for their success.

In another study on strategy use and progress feedback, Schunk (1993) investigated the effects of strategy verbalization and progress feedback on self-efficacy and comprehension among students receiving remedial reading services. In this study, 52 fifth grade students who regularly received remedial reading comprehension were chosen from two elementary schools. Researchers wanted to measure whether training students to verbalize strategies out loud, with eventual fading to internalized self-talk, in addition to progress feedback, would positively impact their comprehension skills and resulting self-efficacy.

For this study, students were trained with a specific reading strategy and placed into four experimental conditions: fading only, feedback only, fading plus feedback, and no fading or feedback. For the students assigned to the fading-plus-feedback and feedback-only conditions, strategy-value feedback linked to prior successes was given when they used a strategy correctly. This included statements such as, "You got it right because you followed the steps in the right order." "Answering questions is easier when you follow the steps." "Do you see how thinking about what the details have in common helps you answer the question correctly?" It is important to note that this feedback was only given when children used the strategy to correctly answer the questions, making the feedback valid to the student. Also, the feedback is linked to the

prior successes rather than encouraging strategy use for future success (“You should try harder next time”).

Results supported the researcher’s hypothesis that strategy use and progress feedback showed the highest positive impact on self-efficacy. They suggest that the importance of strategy fading is in the internalization that occurs when children are repeatedly and progressively verbalizing the strategy in different forms, leading to better encoding, retention, and retrieval from memory. The strategy-value feedback informs students that the strategy is important and thus leads to greater motivation to use it.

Researchers have questioned whether mastery-oriented students experience the same benefits as lower achieving students in classrooms that employ strategy training and progress feedback given that they are considered to already have an achievement orientation and apply causal attributions appropriately. In a study to determine the effects of strategy goals and feedback with gifted students, Schunk & Swartz (1993) used writing strategy instruction with 4th grade students. Students were asked to measure their perceived capabilities in performing five paragraph writing tasks: generate ideas, decide on the main idea, plan the paragraph, write the topic sentence, and write the supporting sentences. They were then given a skill test to determine their current writing skills prior to training. In addition, a strategy use instrument was used to determine their familiarity and previous use of the strategies that were involved in paragraph writing. Further, a goal orientation inventory was administered to determine if students had orientations of task (desire to independently master and understand academic work), ego (desire to perform well to please others and avoid trouble), affiliate (desire to share ideas and work with peers), or work avoidant (desire

to accomplish academic work with minimal effort). These goal orientations were presented to students to rate their general approach to school.

Investigators used three experimental conditions for this study to determine which had the most positive impact on self-efficacy and skills: a generalized paragraph goal, a specific writing strategy goal, and a strategy goal plus progress feedback. For the group with a paragraph goal, the teacher stated “While you are working, it helps to keep in mind what you’re trying to do. You will be trying to write a (descriptive) paragraph.” For the students assigned to the strategy goal condition, the teacher stated, “While you’re working, it helps to keep in mind what you’re trying to do. You’ll be trying to learn how to use these steps to write a (descriptive) paragraph. Students in the strategy goal plus feedback group were told the strategy and were given progress feedback 3-4 times during each session. This was given privately during independent work and included statements such as, “You are learning to use the steps” and “You are doing well because you are following the steps in order.” However, this feedback was contingent on the student using the steps correctly. The posttest included the pretest measures in addition to measures for progress in strategy learning and strategy value. Children were asked to rate how they were able to use the strategy to write paragraphs now as compared to when the sessions began.

The findings from this study may be limited to students who generally experience high achievement and their related learner identities. While the pre and posttests measured goal orientations, it did not account for the level of perceived difficulty of the task which could also influence approaches to learning.

Results of the study showed that the group that received the strategy goal plus

progress feedback demonstrated the highest increase in achievement outcomes and transfer, judging their self-efficacy as higher. In addition, this group showed a shift in goal orientation from ego to task orientation, suggesting that the enhanced sense of efficacy and skill led them to focus more on improvement of their writing skills. The researchers noted that these results were surprising, as gifted students are identified as being more strategic, show greater understanding of how strategy use raises performance, are more likely to transfer strategy use, and are more likely to generate their own strategies for learning. In contrast, those who received only the paragraph goal may have questioned the importance of the strategy, as its uses were not explicitly verbalized to them. Schunk & Schwartz (1993) suggest that if learners do not believe a strategy is useful, they are not likely to use it systematically or transfer its use to other areas of learning.

The results of these previous studies indicate that when students are taught strategies for attaining learning goals and are given progress feedback in using the strategies, they develop greater skills and self-efficacy for future learning. These results have important implications for teaching, in that students who experience success in using strategies for attaining learning goals are more likely to make correlations between ability and the processes of learning.

Conclusion

The results of these studies have important implications for teaching. While there are many personal and situational factors that influence student appraisals of competence, these studies reveal direct relationships between teacher feedback and self-efficacy in learning tasks. In addition, correlations between self-efficacy, learner identity, and motivation have been

demonstrated. Specifically, these findings suggest that feedback has the potential to enhance or detract from self-efficacy, pointing to the need for careful evaluation of communication with students.

In the simplest of terms, students often explain their success or failure in academic tasks according to their ability, whether it is seen as an innate trait or a developed set of skills and knowledge. The studies reviewed indicate that student conceptions of ability vary according to age, learner identity, and culture (Burnett & Mandel, 2010; Dweck, 1986; Liu & Yussen, 2005). In investigations of age-related conceptions of ability and effort, older students were seen to interpret effort feedback alone as a confirmation that they lack ability, thus the feedback detracted from their self-efficacy (Schunk, 1993). In addition, research into the influence of learner identity on self-efficacy revealed that students identified as learned helpless demonstrate self-derogatory bias in how they interpret feedback, and thus use feedback inaccurately in their appraisal of self-efficacy (Hokoda, Fincham & Diener, 1989). Finally, investigations into cultural differences in interpretation of causal attributions demonstrated that concepts of ability and effort vary across cultures and thus related feedback may not be aligned with student conceptions (Liu & Yussen, 2005). These different views suggest a need for teachers to carefully evaluate the types of praise and feedback given to students along the continuum of their development and learning. It is important to understand how our students conceive of concepts of ability and effort in order to modify our feedback to match their conceptions. In this way, when we are trying to support students in viewing learning as an incremental process, we are aligning our language use with their conceptions.

Suggestions for the use of attributional feedback in the classroom are slightly varied

within the research reviewed. Some argue that only effort feedback should be used because it implies to students that learning is an incremental process and thus effort leads to progress (Dweck, 1986; Dweck & Legget, 1988; Folmer et al, 2008) In a review of research on self-efficacy, this assertion is questioned, as Schunk (1991) states, "Effort feedback over an extended period of time might actually lower self-efficacy, because as students become more skillful they might wonder why they still have to work hard to succeed" (pg. 219). He suggests that teachers should focus on the credibility of the feedback. Specifically, if a student has early success in a task, ability feedback is appropriate and may enhance self-efficacy for continued learning. Likewise, if a task has difficult features, such as subtracting increasingly larger numbers, and requires greater effort to achieve success, giving effort feedback associated with task difficulty will cue students to relate success to effort in developing ability (Schunk & Schwartz, 1993). Periodic assessments of students' skills, efficacy, and interpretations of feedback may give educators valuable information to consider how feedback sequences could impact motivation and performance. Further research into how ability feedback is interpreted by students may help teachers navigate this common attribution for success and failure.

In addition to the variations in student perceptions of attributional feedback, studies reviewed in this paper also pointed to variations in how teachers perceive the feedback they give. Studies that investigated teacher and student perceptions of feedback in the classroom revealed that teachers were not accurate in their perceptions of the types of feedback they were giving and the way it was delivered. Teachers reported giving effort feedback most often and consistently in their classroom, however, observations revealed that this was the least used form of

feedback. Instead, general praise was the most prevalent form of communication and this type of feedback was seen to have no impact on student conceptions of the classroom environment or their relationship with the teacher (Burnett & Mandel, 2010). This is an important consideration for teachers because it implies that it may be difficult to gain objective and accurate analysis of established routines and practices for evaluating students. Teachers' intentions in giving feedback may not match actual actions. Therefore, it may be useful for teachers to use videotaping for self-evaluation and to ask others to observe them for purposes of evaluating feedback.

The studies within this review that focused on strategy use and progress monitoring showed strong correlations between these teaching practices and student appraisal of self-efficacy. The results of these studies revealed that students with varying learner identities and pre-existing skill levels in subjects showed improvements in self-efficacy following instruction with strategy use and progress-monitoring (Schunk & Gunn, 2001; Schunk, 1993; Schunk & Schwartz, 1993). These findings provide implications for how teachers design and approach instruction in their classrooms. Progress monitoring of strategy use provides a focus for feedback that is goal-oriented, supporting the development of incremental learner identities.

In summary, feedback in the classroom has the potential to move students forward in developing self-efficacy and learner identities that are goal-oriented, or it can reinforce a learned helpless identity and detract from self-efficacy in future learning. It is a critical feature in instructional practices. The research indicates that best practice revolves around designing a classroom that is centered on learning goals that are attainable through strategy use.

These practices provide a context for giving progress feedback that is related directly and accurately to the steps students have taken to achieve their goals and minimize general praise. While hearing 'good job' may give a student good feelings in the moment, the results are short-lived. Meaningful feedback supports students in seeing that learning happens when they take steps to reach their goals. The more often students experience success in learning, the more self-efficacy they will feel in approaching learning tasks.

References

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Burnett, P. C. & Mandel, V. (2010). Praise and feedback in the primary classroom: Teachers' and students' perspectives. *Australian Journal of Educational & Developmental Psychology*, 10, 145-154.
- Burnett, P. C. (2002). Elementary school students' learner self-concept, academic self-concepts, and approaches to learning. *Educational Psychology in Practice*, 18, no. 4: 325-333.
- Dweck, C. S. (1986) Motivational processes affecting learning. *American Psychologist*, 41, 1040-1048.
- Dweck, C. S. & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95, 256-273.
- Folmer, A. S., Cole, D. A., Sigal, A. B., Benbow, L. D., Satterwhite, L. F., Swygert, K. E., & Ciesla, J. A. (2008). Age-related changes in children's understanding of effort and ability: Implications for attribution theory and motivation. *Journal of Experimental Child Psychology*, 99, 114-134.
- Hokoda, A.J., Fincham, F. D., & Diener, C. I. (1989). The effect of social comparison information on learned helpless and mastery-oriented children in achievement settings. *European Journal of Social Psychology*, 19, 527-542.
- Horner, S. L. & Gaither, S. M. (2004). Attribution retraining instruction with a second-grade class. *Early Childhood Education Journal*, 31, 165-170.
- Jackson, R. II (Editor) & Hogg, M., A. (Consulting Editor) (2010). Self-concept; self-efficacy. In *Encyclopedia of Identity* (Vol. 2, pp. 674-677, pp. 687-690), Thousand Oaks, CA: Sage Publications, Inc.
- Jain, S., Bruce, M. A., & Stellern, J. (2007). Self-efficacy as a function of attributional feedback. *Journal of School Counseling*, 5, 1-22.
- Liu, Y. & Yussen, S. R. (2005). A comparison of perceived control beliefs between Chinese and American students. *International Journal of Behavior Development*, 29, 14-23.
- Rogoff, B. (2003). *The cultural nature of human development*. Oxford, New York: Oxford University Press.
- Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist*, 26, no.s 3 & 4; 207-231.
- Schunk, D. H. (1993). Writing strategy instruction with gifted students: Effects of goals and feedback on self-efficacy and skills. *Roeper Review*, 15, 225-230.
- Schunk, D. H. & Gunn, T. P. (2001). Self-efficacy and skill development: Influence of task strategies and attributions. *Journal of Educational Research*, 79, 238-244.
- Yasutake, D., Bryan, T., & Dohrn, E. (1996). The effects of combining peer tutoring and attribution training on students' perceived self-competence. *Remedial and Special Education*, 17, 83-91.

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn.

Contemporary Psychology, 25, 82-91.

Educational

What are Effective Classroom Management Strategies that Maximize Student Engagement?

This literature review, informed the question: “What are effective classroom management strategies that maximize student engagement?” Classroom management (CRM) is divided into its interconnected subcategories of classroom instruction and behavior management. This paper focuses is on the behavior management aspect of classroom management. Two schools of thought regarding classroom management were revealed: the teacher-centered approach and the student-centered approach. The studies were gathered form a search completed in December 2010 using Education Resources Information Center (ERIC) and JSTOR databases. Advanced searches were selected for peer reviewed, empirical studies conducted in elementary classrooms. Originally the terms “classroom management’ and “student engagement” were used to identify possible studies to use in my literature review. The findings revealed (i) student-teacher relationships were related to a reduction of student misbehavior and increased student engagement and that (ii) reinforcement of appropriate student behavior was related to lower levels of student misbehavior. In addition, the findings demonstrated the complementary nature of teacher-centered and student-centered classroom management; and the importance of implementing consistent classroom management beginning at the start of the school year. Implications for teaching suggest the following practices may decrease student off-task behavior and increase student engagement: (i) decreasing negative teacher responses to student behavior, (ii) using praise of appropriate student behavior, (iii) implementing a combination of teacher-centered and student-centered approaches, and (iv) implementing clear expectations at the start of the school year.

The topic of classroom management (CRM) is something that every educator will need to negotiate in the classroom. Evertson, C. (2003) defined CRM as “the orchestration of the learning environment of a group of individuals within a classroom setting” (p. 229). Managing the classroom so that students spend more time learning and engaging in the work rather than being redirected and disciplined by the teacher is a constant balancing act in the classroom. Ineffective classroom management, what Brophy (1998) referred to as “management that focuses on the misbehavior and places more emphasis on after-the-fact discipline” (p. 44), is highly tense and stressful, and has led to an alarming statistic, reported by

Ingersoll, that “30% of those leaving the teaching profession, reported doing so out of stress, at least partly from poor CRM skills” (as cited by Little & Atkin-Little, 2008, p. 232). Given the immense importance of effective classroom management, it is necessary to gather information for best practices to inform my instruction so as to maximize student engagement.

Classroom management consists of the two interrelated subcategories of classroom instruction and behavior management. According to Evertson (2003), the traditional view of CRM in the educational community was that CRM was completely separate from that of instruction. She explained that, “Research in the 1980’s,

however demonstrated that management and instruction are not separate, but are inextricably interwoven” (p. 299). Emmer and Stough (2001), as cited in Oliver and Reschly (2007), elaborated on the interdependent nature of classroom instruction and student behavior management: “Although sound behavior management does not guarantee effective instruction, it establishes the environmental context that makes good instruction possible. Reciprocally, highly effective instruction reduces, but does not eliminate, classroom behavior problems” (p. 1).

The issue of classroom management emerged from my frustration at times with implementing ineffective classroom behavior management during my student teaching. I realized that my ineffective management of student behavior was negatively affecting student time on-task. I had very engaging lessons, but the challenge was managing the behavior of the student so that learning could happen and that students could get to the task. I felt that I was spending more time trying to control student behavior so that I could teach a lesson compared to time engaging in the instructional activity. The same concern about the amount of time spent on managing student behavior was expressed by Clunies-Ross, et al. (2008) who reported that, “teachers are spending a considerable amount of time on behaviour management issues” (p. 693). Thus, ineffective CRM directly affects students’ education as well.

The main contention or controversy in CRM lies in within difference between teacher-centered and student-centered approaches, as they relates to student engagement, is that of student “off-task” behavior. In the teacher-centered approach, off-task is primarily defined as disruptive behavior (Garret, 2008). However, the student-centered approach defines off-task behavior as disruptive behavior as well as

inattentiveness and non-engagement in the learning process. The definition of effective CRM, in terms of maximizing student engagement, is significantly different based on these two schools of thought. These two schools of thought will be further analyzed in the section to follow.

The studies were gathered form a search completed in December 2010 using Education Resources Information Center (ERIC) and JSTOR databases. Advanced searches were selected for peer reviewed, empirical studies conducted in elementary schools. Originally the terms “classroom management’ and “student engagement” were used to identify possible studies to use in my literature review. This paper is a tool for narrowing my focus as to the kinds of CRM strategies to continue exploring through additional research to find specific strategies to incorporate into my teaching practice.

Literature Review

In conducting a review of literature of the different schools of thought regarding this issue, two principal categories of *teacher-centered* and *student-centered* approaches to classroom management emerge.

The teacher-centered method, according to Garret (2008), is an authoritarian approach, which is based in the behavioral model in which the teacher has the ultimate authority regarding classroom rules, activities, lectures, etc. All seating is pointing toward the teacher, usually in rows to discourage talking amongst peers. In this authoritarian approach, which is consistent with a traditional or transmission approach to instruction, the teacher is thought to possess the knowledge that is to be primarily transmitted to students through talking. Bophry (as cited by Garret, 2008, p. 34) claimed: “The primary emphasis for classroom management in a behavioral

model is the use of techniques that bring students' behavior under stimulus control." This mode of operation is highly dependent on reward and punishment of student behavior.

In contrast to the authoritarian, teacher-centered school of thought, the student-centered approach, according to Walker (2009), is based in the authoritative method of classroom management, which strives to meet students' intellectual and social needs. The student-centered approach is based in the constructivist principles of learning in which the purpose is "to create a learning environment where knowledge is constructed by the teacher and students rather than transmitted directly by the teacher" (Garret, 2008, pp. 34-35). This student-centered approach to CRM focuses on inquiry and authentic activity in the meaning making process and is closely related to the humanistic perspective that attaches "great significance to the relationship between teacher and pupil" (Hart, 2010, p. 358). According to Emmer and Evertson (1980), community building starts at the beginning of the year and is a primary tool to facilitate student engagement through co-creating classroom norms. Students are often grouped together to encourage peer interaction and discussion. The standards are explained and made explicit. The expectations for student performance are maintained at a high level. According to Garrett (2008) the expectation of students in the student-centered approach is that they be self-monitoring and that their voices be represented through participation and engaging in their learning in order to create a democratic society within the classroom.

Further research studies will now be discussed as they relate to classroom management and the schools of thought that they represent. The following studies were sorted by the following themes: (i)

incorporating emotions and feelings into the classroom, (ii) the effect and importance of teacher response, (iii) the complementary nature of teacher-centered and student centered approaches; and finally (iv) the importance of starting CRM at the beginning of the school year. The following studies explore their effect on student behavior and student engagement.

Incorporating Emotions and Feelings into the Classroom

The following three studies share a common theme in their findings of incorporating emotions and feelings into the classroom as a way to increase student engagement, as well as to decrease student misbehavior and off-task behavior.

In a quantitative study, Hoffman, Hutchinson, and Reiss (2009) implemented a student-centered approach to the intervention model. The authors examined the impact of trainings on self-control, conflict resolution, and improved emotional intelligence given to early childhood teachers in a classroom management program titled *Conscious Discipline*. In this program, emotional intelligence is "the self-perceiving ability to identify, assess, and manage emotions to better communicate, solve problems and build relationships" (p. 14). The purpose of this study was to intervene on schools that operated out of a behaviorist approach to CRM, consisting of reliance on external rewards and punishment, and make the transition to a more humanistic approach that focuses on the principles of releasing external control, embracing conflict resolution, and implementing a more emotionally targeted reward structure in the classroom through *Conscious Discipline*, which is "designed to help teachers enhance social and emotional skills of children and thus enhance the overall school climate"(p. 17). The implementation of this workshop model

consisted of a one-day overview of Conscious Discipline followed at the beginning of the school year followed by seven monthly trainings over the course of the school year. These monthly trainings focused on specific skills including self-control, conflict resolution, and improved emotional intelligence.

The data consisted of teacher surveys in which they answered 45 environment and conscious discipline questions, which measured teacher's opinions about their students' behavior and participation, their own comfort levels, relationships with colleagues and the involvement of the principle in the school, teacher's use of rewards systems, teaching/learning locus of responsibility, job satisfaction and level of support for innovation. These surveys were also conducted at the end of the school year and compared with those at the beginning of the school year, as well as to the control group, comprised of teachers who subscribe to a behavioral theory of rewards and punishment. This control group completed the initial survey and received no intervention.

The results found measured positive improvement in student-teacher relationships and colleague support by teachers who completed the workshop trainings and were committed to using the Conscious Discipline skills in their classroom, as well as heightened positive feelings regarding their school climate. In regards to classroom management strategies, this study demonstrated a positive correlation between use of self-control, conflict resolution, and emotional intelligence on improving student engagement, student-teacher relationships, as well as the overall school climate.

A threat to the internal validity of this study was the experimental mortality of the participants from the 206 initial surveys conducted to the 117 surveys that were

collected at the end of the study. There is also an aspect of subjectivity in the collection of data, which was self-reported by the teachers. Further research involving data from the students in these classrooms involving student voice through survey or questionnaires at the beginning of the year, compared to student surveys at the end of the school year, would facilitate more accurate conclusion of the intervention's effect on student-teacher relationships.

In the second study, Schetman, and Leichtentritt (2004) quantitatively compared the effects of *affective* teaching with those of *cognitive* teaching on CRM in special education classrooms in Israel. Affective teaching referred to "the personal lives of the children, including perceptions, emotions and behavior... Cognitive teaching referred to a regular lesson taught on the informative and conceptual levels, but excluded affect and emotions" (p. 326). Both affective teaching and cognitive teaching were conducted in special education classes with the purpose of reducing misbehavior, which was categorized by off-task behaviors (to include day-dreaming, inattentiveness and playing with something), talking without permission, moving without permission and aggression, and increasing positive behavior, which included expression of personal thoughts, ideas, perceptions; expression of emotions and feelings, negative or positive; self-awareness, self-understanding or insight; expression of support, positive feedback and encouragement of classmates. Three observations, each lasting 90 minutes, were divided equally into the two teaching styles: 45 minutes of affective teaching followed by 45 minutes of cognitive teaching. The classroom teacher made the observations while a student teacher taught the class.

The results indicated that, in affective lessons, the same students demonstrated less off-task behavior and a decrease in other

disturbing behavior. Not only did negative behavior decline, but positive, pro-social behavior increased. “In affective lessons children expressed themselves more frequently, cognitively and emotionally, and expressed some understanding and insight” (p. 329). The reported decrease in misbehavior in the affective half of the lesson was especially significant because this period tended to be more difficult as the students grew tired and tended to lose concentration.

Threats to validity were seen in the data collection method, as well as cultural and ethnic homogeneity. The internal validity of this study was threatened due to the fact that the data collected were observational surveys conducted by the classroom teachers, which allows for unaccounted subjectivity and may have affected the results. Having an objective observer may have resulted in a different outcome. Also, further research would need to be conducted in general education classrooms, to verify this study’s generalizability.

The study makes a strong case for affective teaching in which students’ personal lives, emotions and feelings are incorporated into the classroom, which demonstrated decreased misbehavior and increased pro-social behavior and student engagement. It is particularly important that the study distinguished misbehavior from off-task behavior to clearly analyze student engagement. Also, this study makes a strong claim that affective teaching should not replace cognitive teaching, but rather it should accompany it.

In the third study of this section, Ullucci (2009) conducted qualitative research examining the way in which “well-respected teachers in urban schools utilize their classroom space, manage their students and build community in culturally responsive ways” (p. 13). These well-

respected teachers were identified by nominations from school staff and administrators, based on criteria described in a document created by the author entitled, “*Indicators of Effective Teachers of Students of Color*,” also based on exceeding the norm/average for standardized test scores, as an academic proxy. The author conducted individual observations of these 6 white, public elementary school teachers in urban classrooms made up of over 90% students of color. Each teacher was observed 4-6 times, with each visit lasting from 45 minutes to 2 ½ hours. The data collected was analyzed for similarities that these effective teachers shared in their classroom organization, relationship building strategies, and classroom management techniques.

The study found that all teachers set up the physical environment to reflect the diversity of students in their classrooms and to facilitate communication and interaction. Communication and interaction were encouraged by arranging students in groups of four to six. All teachers talked a lot about feelings, talked explicitly about race and racism, and celebrated students’ cultural capital, including multiple language identities.

In regards to CRM techniques, the results showed that teachers relied on community building first, and management tactics second. “Management was less about rewards and punishments and more about norms” (p. 25). Teachers often used humor to redirect students who were off-task and chose not to make every infraction a serious offense. The teachers in this study were all direct and sharp with their discipline, but held great commitment and respect for their students while being disciplinarians.

In terms of the validity of this study, there would need to be further research explored in classrooms where students of color were not the majority in order for

transfer to be possible for students of color in predominantly white classrooms. Also, to solidify the effectiveness of these teaching strategies, student surveys/interviews would help to determine validity of the study's findings.

In terms of effective CRM strategies for maximizing student engagement, results demonstrated that the most important aspect in a learning community is the foundation set through building a sense of community and belonging in the classroom. Encouraging communication and interaction among students, through the physical organization of the classroom, incorporating feelings and emotions, along with talking explicitly about oppression, were all related to student engagement and creating a community of learners. Humor was also effective in redirecting students who are off-task, as well as implementing discipline in a direct and sharp manner, while maintaining respect and dignity of the student.

These studies demonstrated a positive relationship between incorporating emotions and feelings into the classroom and increased student engagement and decreased student off-task behavior (Hoffman, et al., 2009; f2004). A relationship was also found between self-control, conflict resolution, emotional intelligence and increased student engagement (Hoffman, et al., 2009). The student-teacher relationship was found to be of primary importance in the students' education experience and a foundation for effective CRM (Ullucci, 2009).

Teacher's Response

The following four quantitative studies demonstrate the effect that positive and negative teacher responses have on student misbehavior as well as student engagement.

The first quantitative study in this section, conducted by Leflot, Lier, Onghena, and Colpin (2010), took place in the Flemish speaking part of Belgium. This longitudinal

study investigated the role of teacher behavior management in the development of students' disruptive behavior using a universal classroom intervention called the Good Behavior Game (GBG). "The GBG is a classroom team-based behavior management strategy that provides the teacher with tools to reinforce prosocial and on-task behavior and reduce antisocial and disruptive behavior" (p. 872). The authors conducted observations of teacher management of student behavior, children's on-task behavior and off-task classroom behavior, as well as peer reports of hyperactive and oppositional behavior. The categories of student behavior consisted of "on-task," "talking out," and "out-of-seat." Categories of teacher behavior management were defined as "negative remarks" and "praise." Second grade students were followed through third grade and compared the findings to the control condition.

The results demonstrated that the reduction of negative remarks by the teacher had a positive correlation to student's on-task behavior, while simultaneously decreasing disruptive student off-task behavior.

Threats to the validity and transferability of this study related to sample homogeneity and the very strict observation system. In regards to ethnic homogeneity, most of the children had a Flemish Belgian background. Further research is needed that includes a more diverse sample before its finding can be generalized. Data may have been collected in an overly general way. For instance, tallies were marked on observation sheets for out-of-seat behavior that included even small amounts of movement, which does not reflect actual of "out-of-seat" behavior. It would be interesting to see if the "off task" definition of student behavior of "out of seat" were changed, would it then affect the relation to student praise, giving it a different outcome.

The second quantitative study in this section is a classwide teacher consultation called the *Classroom Check-Up* (CCU). Reinke, Lewis-Palmer, and Merrell (2008) created and implemented the CCU as a tool to “target teachers’ motivation to maintain current practices that are important for student success, reduce teacher-student interactions that are likely to exacerbate problems, and increase teacher behaviors that promote student competence and success” (p. 5). The purpose of the study was to evaluate the effects of the CCU on teacher and student behavior. The multiple strategies and behaviors that the researchers analyzed included: *praise*, defined as any verbal statement or gesture that indicated teacher approval; *reprimands*, which are verbal comments or gestures made by the teacher indicating disapproval of student behavior; *disruptive behavior*, defined as any statements of actions by an individual student or group of students that disrupted or interfered with ongoing classroom activities for the teacher.

The data was collected using teacher interviews, a classroom ecology checklist, and classroom observations. The data was triangulated to confirm their reliability and revealed an increase in all classrooms in use of behavior-specific praise. All classrooms showed a decrease in use of reprimands. The researchers found that decreases in classroom disruption directly coincided with increased rates of praise, as compared to the initial baseline phase of the study, which revealed higher rates of classroom disruptions than teacher praise for all classrooms. This information concluded that there is a positive correlation between teacher praise and increased student engagement.

Threats to validity in this study are found in sample size, interaction of time of measurement and treatment effects, homogeneity of participants, and the

subjectivity of participating teachers. The small sample size, consisting of only four teachers and their classrooms, limits the generalizability of the results to a broader context. The time of observations are a threat to this study’s validity, due to the fact that observations were conducted during the same time of day during math class. Systematic replications of this study across content areas, diversified participants, and settings are needed to increase its external validity.

In analyzing this study, in regards to CRM, it can be concluded that increasing student praise has a direct positive correlation to decreased disruptive student behavior, as well as increased student engagement.

The third quantitative intervention of this section, conducted by Evertson (1989), was a fusion of teacher-centered and student-centered approach to CRM consisting of using praise and encouragement, displaying student work, allowing privileges more frequently, as well as using behavior cuing and making expectations explicit to the students. This study sought to measure the intervention’s effectiveness of CRM strategies on student outcomes. These student outcomes consisted of student misbehavior and student engagement. Student misbehavior was distinguished as *disruptive*, meaning that a student’s behavior was distracting, or *inappropriate*, meaning that s/he was not engaged in assigned task. Student engagement was rated in terms of on-task and off-task. The method of the study was a randomized field experiment employing a workshop model, which was conducted in 29 voluntary elementary school classrooms, all in rural settings. The treatment group of 15 teachers received a one-day workshop training before the school year, followed by an additional 1-day follow-up workshop in October. The control group received

workshops at the end of the year only. Both groups were individually observed in their classrooms six times, with each observation lasting from 30 -50 minutes starting on the first or second day of school and spanning content areas.

The results of this study concluded that the treatment group exceeded the control group in higher rates of student engagement, as well as lower rates of student misbehavior and inappropriate behavior. This marked difference was particularly significant due to the reported experimental treatment diffusion, in which discussion between groups lead to the control group implementing ideas into their classrooms. The transferability of the study's findings is somewhat limited due to the fact of the common rural setting of participating classrooms. No student demographics were reported, which is important information for transferability for public schools in urban and suburban locations consisting of diverse student bodies.

The fourth and final quantitative study, conducted by Clunies-Ross, Little, and Kienhuis (2008), investigated how the use of *proactive* and *reactive* CRM strategies relates to teacher stress and student behavior. Proactive strategies were described as teacher behaviors used to lessen the likelihood of student-off task behavior and involve addressing a situation before it escalates. Specific proactive strategies include: active listening and negotiating, instructing the child in coping skills, modifying current teaching style, pending time and energy to help a child, reading articles about the issue, providing nurturance and support, and stating the rules and expecting compliance. Reactive strategies, on the other hand, are teacher behaviors that occur in response to students' misbehavior. Specific reactive strategies include: recommending drug medications, using lectures and threats, using rewards and

punishments, having the child removed and using corporal punishments. The authors had each of the 97 teachers from primary schools, in Melbourne, Australia, completed four questionnaires that gathered information on demographics, disruptive student behavior, teacher management strategies, as well as self-reported stress. Then, observations of 30 minutes each were conducted of 20 teachers, which were then matched to the questionnaires.

The results of this study found that a significant positive correlation was established between positive academic and social responses, as well as student on-task behavior. Similarly, reactive management and negative teacher responses exacerbated student disruptive behavior, elevated teacher stress and decreased student on-task behavior. The results of this study isolated the fact that a lack of negative teacher responses to student behavior had a statistically higher positive correlation to student on-task behavior, then did positive teacher remarks of student behavior. A threat to external validity that exists in this study is found in the fact that the research was conducted in Australia. The possibility of cultural encapsulation may have affected the results.

In reviewing these four studies regarding the effect of teacher response on student behavior, the reduction of negative remarks by the teacher had a positive correlation to student's on-task behavior, while simultaneously decreasing disruptive student off-task behavior. Conversely, a positive correlation was found between decreased negative teacher response and decreased student off-task and misbehavior.

Teacher-Centered and Student-Centered

The following two studies demonstrate the complimentary relationship between teacher-centered and student-centered classroom management in regards to

decreasing student misbehavior and increasing student engagement.

In the first study of this section, Hart (2010) conducted qualitative research that explored the views of educational psychologists concerning classroom behavior management (CBM), which is used by the author as a synonym for CRM, and is described as “an attempt to control or alter other people’s behaviour, for example, increasing motivation, engagement or compliance” (p. 354). The author conducted this study during an Educational Psychology Service (EPS), or training day, in which they were prompted to individually list the top 10 strategies that they would see in a classroom that implemented highly effective management. After creating lists individually, the participants were put in groups of 7 or 8, asked to discuss their responses over a period of 30 minutes, and form a consensus of the 10 best strategies and techniques. The results of the consensus groups received a thematic analysis, in which 8 themes were identified.

The results of this study found that faith in behavioral techniques does indeed remain strong. This is demonstrated by the fact that the most widely identified tactic among educational psychologists was the behaviorist-rooted tactic of reinforcement of appropriate behavior. However, a multi-dimensional picture of effective CBM exists among educational psychologists, in which good CRM is not exclusively dependent on teachers’ response to behavior, “but also the environment that pupils learn in, pupils’ cognitions about themselves, the extent to which they feel valued and secure, positive social and emotional development, pedagogy and encouraging children to and young people to exercise autonomy” (p. 369). Results showed representation not only in the behaviorist theory, but also in the attachment and student-centered/humanistic theories as well.

In regards to the validity of this study, the fact that the educational psychologists were all collected from the same geographical location may have affected the outcome of the study due to similar trainings attended and similar selection process. In conclusion, further research sampling educational psychologists from various geographic locations would need to be explored to substantiate the study’s findings.

This study demonstrated that teacher-centered and student-centered approaches to CRM are not necessarily contradictory, but can be complimentary in maximizing student engagement. The results of this study revealed the importance of consistency, and of maximizing positive interventions and minimizing negative ones, both in frequency and severity.

The final study in this section, conducted by Nie and Lau (2009), used the self-determination theory, which emphasizes a person’s need for competence, relatedness and autonomy for self-motivation and healthy psychological growth, as a theoretical framework for understanding the roles of care and behavioral control in student outcomes. The five specific student outcomes that the authors measured were: *teacher behavior control*, explained as correcting misbehavior immediately, tells the class to keep quiet when it is noisy, taking notes of misbehaviors, and taking action to ensure that students behave; *teacher care*, described by the researchers as showing concern for students, *student engagement*, explained as paying attention, focusing on the work, listening carefully, completing class work, and answering the teacher’s questions; *misbehavior*, described as inattention, disruptive talk, making noise, walking around the classroom, and refusing to follow teachers’ request or rules; and lastly *satisfaction with school*, in which students are glad to be at the school, think that it is a nice place to study, and would

still want to stay in that school even if they had to move to another place. These five student outcomes were measured through online student surveys that were controlled for students' gender and socioeconomic status.

The results concluded that both care and behavioral control were positively related to student engagement. The researchers' findings "underscore the importance of blending care and behavioral control to achieve multiple goals of classroom management" (p. 185). The research advocates for teacher care for its facilitating role in engaging student learning and their satisfaction with school life. Also, teacher control was found to be effective in reducing student misbehavior and engaging student learning. It is suggested by this research that teachers may blend behavioral control and care to achieve positive student outcomes.

The external validity of the study is questioned due to the fact that the study was conducted in Singapore, in 9th grade classrooms, and in English classes exclusively. The homogeneity of the sample population, in regards to culture, second language learning, and age, may have concluded specific results that are effects of these factors. In order for the findings of the study to be more transferable, further research would need to be explored across content areas, across grade levels, as well as in the participants' first language. Further investigations of research with a control group with the absence of teacher care are needed for further validation.

In a qualitative study, Garret (2008) explored three teachers who implemented a student-centered instructional approach to CRM to study the relationship between student-centered instructional approach and its CRM approach. The guiding question that drove this study, more specifically, was: "do teachers who use student-centered

instruction also implement student-centered management?"

The author identified extremes in the approaches to CRM: *custodial* and *humanistic*. An educator with a "custodial orientation is likely to be highly controlling, employing punitive sanctions, moralistic perceptions, highly impersonal relationships with students, attitudes of general mistrust and a major focus on the maintenance of order" (p. 35). Conversely, an educator with a more humanistic orientation "is likely to maintain a classroom climate in which active interaction and communication, close personal relationships with students, mutual respect, positive attitudes, and flexibility of rules, as well as student self-discipline, self-determination and independence are fostered" (Willower et al., as cited in Garret, 2008, p. 36). The studies findings indicated that although all three teachers used an eclectic approach, two teachers leaned more towards student-centered, while the other teacher leaned more towards a teacher-centered approach to classroom management. Also, the study demonstrated that a continuum exists in the implementation of CRM. This was seen in the finding that all three teachers implemented some aspects of teacher-centered approach to CRM typical of traditional transmission classrooms. A threat to the transfer validity of this study was the small sample size. In order to make a definitive statement regarding the study's question regarding the relationship between classroom instruction and CRM, a greater number of teachers who practice student-centered instruction would need to be assessed. Although the study takes place in a school that is racially and ethnically diverse, with nearly equal representation between the sexes, the fact that this school is a science and technology magnet school may affect its transfer validity to that of a public school setting.

The results of this study demonstrate that these two approaches to CRM are not neatly divided into separate boxes, but rather exist on a continuum between teacher-centered and student-centered CRM and can be implemented in a complimentary manner to increase student engagement and decrease student off-task behavior.

In analyzing the results of these three studies, the complimentary nature of the implementation of teacher-centered and student centered was found to have a positive correlation to student engagement and decreased off task behavior.

Starting at The Beginning of the School Year

In this final section, the importance of implementing classroom management at the start of the school year has demonstrated a positive correlation to higher levels of student engagement and decreased rates of student misbehavior.

In a quantitative, pragmatic, longitudinal study, Emmer, Evertson, and Anderson (1980) researched the importance of implementing CRM at the start of the school year and its consequent effect throughout the year. The authors sought to discover how effective teachers, determined by the previous year's mean California Achievement Test reading score, implemented CRM and its effect on student engagement. Ineffective teachers were selected in the same way and formed the comparison group to the highly rated group. Consequently, 27 third-grade teachers in eight elementary schools, four of which were Title I, with a mixture of ethnically and racially diverse student body were observed. Observations of all teachers in both groups were conducted using classroom narrative records to determine specific characteristics of CRM as well as student engagement. Two different observers observed each teacher, 8-10 times in the first three weeks of the

school year followed by tri-weekly observations from November to the end of the school year.

The results found statistically significant difference between the highly rated group and the comparison group in the handling and practicing rules, monitoring and handling inappropriate behavior. This study found a strong positive correlation between implementing effective CRM strategies, which consist of clear and explicit expectations, at the beginning of the year and increased student engagement over the course of the school year. The study also concluded a positive correlation of setting rules, with student input, and practicing those rules, with higher rates of student engagement and decreased student off-task and misbehavior.

Conclusion

In reviewing this literature, which consists of both qualitative and quantitative studies, I have identified common themes of effective classroom management strategies that maximize student. The similar findings that the studies advocate as effective can be categorized in the themes of student-teacher relationships; the complimentary nature teacher-centered & student-centered approaches; and positive reinforcement of appropriate behavior.

In regards to student-teacher relationships, Ullucci (2009) concluded that the relationship between student and teacher are vital to students' engagement and can be achieved through talking explicitly about feelings and using humor to redirect off-task behavior. Along with humor, the author suggests the use of discernment as to what situations the teacher chooses to respond to and to what degree. Schetman and Leichtentritt (2004) echoed this recommendation of incorporation of feelings in affective teaching to lessen off-task behavior and increase pro-social behavior

and student engagement. Nie and Lau (2009) also found a direct positive correlation of teacher care on student learning as well as satisfaction with school life. The fundamental importance of student-teacher relationships was echoed by Marzano (2003) who claimed that the quality of teacher-student relationships is the foundation for all other facets of classroom management. He found that “teachers who had high-quality relationships with their students had 31 percent fewer discipline problems, rule violations, and related problems over a year’s time than did teachers who did not have high-quality relationships with their students” (p. 1). This research makes a strong implication for building and maintaining quality relationships with my students. I am confident that this will be a foundation to my teaching practice. I will investigate more research to solidify what specific strategies are recommended for building and maintaining strong relationships with my students, as well as strategies for incorporating feelings and emotions into my teaching practice.

The complimentary relationship between teacher-centered and student-centered CRM was found by Nie and Lau (2009) to be necessary in students’ success through their research of teacher care and behavior management. The collaborative dynamic between these two approaches was also shared by Garret (2008), whose findings suggest that teacher-centered and student-centered CRM are not neatly divided into separate boxes, but exist on a continuum between these two approaches to maximize student engagement and decrease student off-task behavior. Freire (2005) defined this balance of control and authority in the classroom as *democratic radicalism*, in which the teacher speaks “to” students and “with” students. In order to feel confident enough that I would incorporate

this into my practice, I would need to analyze more research that studies the nuances of combining both teacher-centered and student-centered CRM to increase student engagement.

In the area of reinforcement of appropriate student behavior, Hart (2010), along with Clunies-Ross, et al. (2008) and Reinke, et al (2008), all found that increased rates of praise had a direct positive correlation to decreased disruptive behavior and increased student on-task behavior. A strong positive correlation was found between the reduction of negative teacher reprimand and decreased disruptive student off-task behavior, as well as increased student on-task behavior. Similarly, increased negative teacher responses resulted in increased student off-task and disruptive behavior. However, a caveat exists to the effectiveness of reinforcement of student behavior. Kohn advocated for the humanistic approach, claimed that, “reinforcements do not generally alter the attitudes and emotional commitments that underlie our behaviors. They do not make deep, lasting changes because they are aimed at affecting only what we do” (as cited in Wolfgang, 2001, p. 41). I would need to do further investigation of studies regarding this issue in order to confidently incorporate this as part of my teaching practice. I feel confident, however that strong evidence exists for preventing increase student misbehavior by reducing negative responses in my teaching practice.

A common theme of stressing the importance of consistency in implementation of CRM practices is acknowledged regardless of the approach or theory that the given teacher implements (Evertson, 2003; Hart, 2010). There is a growing trend in education toward an authoritative, student-centered approach to CRM because of the increasing amount of research concluding its effectiveness. It is

important to take into consideration that these two approaches to CRM are not neatly divided into separate boxes, but according to Garret (2008), exists on a continuum between teacher-centered and student-centered. Wolfgang (2001) echoed this idea of a continuum existing between teacher control and student control and oscillating between both in order to decrease student misbehavior and maximize student engagement.

Finally, a positive correlation was found between implementing effective classroom management strategies, which consist of clear and explicit expectations, at the beginning of the year and increased student engagement over the course of the school year (Emmer et al., 1980). It was also demonstrated that a positive correlation between setting rules, with student input and explicit practice of those rules, with higher rates of student engagement and decreased student off-task and misbehavior. Kohn advocated the incorporation of student voice in rule making in order to help them grow into compassionate, principled people (as cited in Wolfgang, 2001). A strong implication for my teaching is found in implementing CRM from the very start of the school year, as well as maintaining clear and explicit expectations with co-created classroom rules to increase decrease off-task behavior and maximize student engagement over the course of the school year.

In my review of literature regarding effective CRM strategies to maximize student engagement, I focused on student behavior management and did not explore what strategies of classroom *instruction* are most effective to provide maximum student engagement. Thus, to answer this question, I would need to explore more research in regards to classroom instruction itself to determine how it promotes student engagement and on-task behavior.

References

- Clunies-Ross, P., Little, E., & Kienhuis, M. (2008). Self-reported and actual use of proactive and reactive classroom management strategies and their relationship with teacher stress and student behaviour. *Educational Psychology, 28*(6), 693-710. Retrieved from EBSCOhost.
- Emmer, E.T., Evertson, C.M., Anderson, L.M. (1980). Effective classroom management at the beginning of the school year. *The Elementary School Journal. 80*(5), pp. 219-231. Stable URL: <http://www.jstor.org/stable/1001461>
- Evertson, C.M. (1989). Improving elementary classroom management: A school-based training program for beginning the year. *Journal of Educational Research. 83*(2), pp. 82-90.
- Evertson, C.M. (2003). Classroom management. In J. Gunthrie, J. Braxton, J. Cooper, S. Goldsman, S. Heyman, J. Koppich, C. Kridel, C. smrekar (Eds.), *Encyclopedia of Education, (2nd ed.)*. pp. 229-303. New York: Macmillian References USA.
- Freire, P. (2005). *Teachers as cultural workers: Letters to those who dare teach*. Cambridge, MA: Westview Press.
- Garrett, T. (2008). Student-centered and teacher-centered classroom management: A case study of three elementary teachers. *Journal of Classroom Interaction 43*(1), pp. 34-47.
- Hart, R. (2010). Classroom behaviour management: Educational psychologists' views on effective practice. *Emotional & Behavioural Difficulties, 15*(4), pp. 353-371. Retrieved from EBSCOhost.

- Hoffman, L. L., Hutchinson, C. J., & Reiss, E. (2009). On Improving School Climate: Reducing Reliance on Rewards and Punishment. *International Journal of Whole Schooling*, 5(1), 13-24. Retrieved from EBSCOhost.
- Leflot, G., van Lier, P. C., Onghena, P., & Colpin, H. (2010). The role of teacher behavior management in the development of disruptive behaviors: An intervention study with the good behavior game. *Journal of Abnormal Child Psychology*, 38(6), pp. 869-882. Retrieved from EBSCOhost.
- Little, S. G., Akin-Little, A. (2008) Psychology's contribution to classroom management. *Psychology in the Schools*, 45 (3) pp. 227-234.
- Marzano, R.J. & Marzano, J.S. (2003). The key to classroom management. *Educational Leadership*. 61, 6-13.
- Oliver, R. & Reschly, J., PhD. (2007). Effective classroom management: Teacher preparation and professional development. Washington, DC: National Comprehensive Center for Teacher Quality.
- Nie, Y. & Lau, S. (2009). Complementary roles of care and behavioral control in classroom management: The self-determination theory perspective. *Contemporary Educational Psychology* 34, pp. 185-194.
- Reinke, W. M., Lewis-Palmer, T., & Merrell, K. (2008). The classroom check-up: A classwide teacher consultation model for increasing praise and decreasing disruptive behavior. *School Psychology Review*, 37(3), 315-332. Retrieved from EBSCOhost
- Shechtman, Z., & Leichtenritt, J. (2004). Affective teaching: A method to enhance classroom management. *European Journal of Teacher Education*, 27(3), 323-333. Retrieved from EBSCOhost.
- Ullicci, K. (2009). This has to be family: Humanizing classroom management in urban schools. *The Journal of Classroom Interaction*. 44(1), 13-28. Retrieved from EBSCOhost.
- Wolfgang, C.H. (Ed.). (2001). *Solving discipline and classroom management problems: Methods and models for today's teachers*. (5th ed.). New York: John Wiley & Sons, Inc.

Effects of Strict and Lenient Grading on Student Learning

The relationship between teacher-assigned grades and student learning is central to the issues surrounding how teachers grade student work. This paper examines peer reviewed studies that focus on the effects of grading systems on students ranging from elementary schools through undergraduate universities in developed countries. These studies show that higher grading criteria lead to higher test scores even though test work primarily requires low level thinking. They also show that teachers who make use of metacognition in their classrooms rarely consider metacognition in their grading system resulting in students disregarding this work. This paper concludes that teachers who wish to make metacognition a part of their practice must include it in their grading system and grade such work according to high criteria.

In the majority of schools in America a basic letter grading system is in place, usually utilizing an A through F scale, although alternatives are becoming more common. Grading is the practice of assigning a level of subject mastery, frequently using the letters A, B, C, D, and E/F, with A indicating excellent, and E/F indicating failing. The criteria for achieving each level of mastery, and thereby each letter grade, is usually determined by the teacher who creates a scale of percentage scores at which each specific letter grade is earned. This system of assigning letters to percentage scores originated on the college level at Harvard in the 1870s as a system to rank students who had passed with distinction (Durm, 1993). Throughout the late 1800s it was adopted by high schools and eventually passed on to elementary schools. Teachers are generally given control over which work is scored and the scale on which it is to be scored, but are ultimately required to submit letter grades for student report cards at the end of a term. A teacher is usually permitted to choose how they grade student work. He can choose use high criteria grading in which achieving the A grade, and each subsequent letter, is

more difficult for students or low criteria grading in which the A grade is relatively easy to achieve.

Regardless of teacher criteria chosen and the work graded, the majority of teachers are required to turn in letter grades for their students. These letter grades and the method by which they are derived can have a significant effect on students. Stiggins (2004) explains, "assessments of learning that contribute to a report card grade can affect students' motivation to learn, for better or worse. Our job as teachers, therefore, is first to ensure that grades are sound" (p. 301). Teachers must, therefore, understand the impact of their grading systems. Because letter grades are a current reality of education, teachers establishing their grading system should consider how it affect student learning.

During my student teaching in the fall of 2010 I was handed a grading system by my mentor teacher which I felt was not commensurate with the pedagogy I had sought to build. Though I created a rubric which assigned levels of competency to students, the system dictated that I transfer this into letter grades in a specific manner. Students who showed comprehension

significantly below expectations on the rubric in some areas were still able to achieve a B letter grade, indicating meeting expectations, if they exceeded expectations in other categories. I knew that I needed a clearer picture of how I should calculate grades and what work I should grade to best promote student learning. I believe that grades play a vital role in focusing a student's attention on what is important for them to learn.

I knew that if I wanted students to excel I needed to make students take metacognition, self-assessment, and critical thinking more seriously in the classroom. Flavell (1976) defined metacognition as referring "to one's knowledge concerning one's own cognitive processes or anything related to them, e.g., the learning-relevant properties of information or data" (p. 232). Without such an ability to be aware of one's own thinking Flavell stated that it would be difficult for students to apply their in school learning to other environments. This paper does not assess the validity of metacognition as a necessary piece of education but rather accepts this premise when evaluating methods used to assess student work and student learning.

Understanding the effects of grading criteria will help teachers who struggle with developing a grading system make an informed decision on what should be graded, whether they should be using high or low criteria grading, and how to include metacognitive work into their grading structure. Currently there is a demand for teachers to set higher academic standards for their students. There is a lack of clarity as to whether high criteria grading should play a role in higher academic standards. This is relevant to teachers as it is something that a teacher will have actual control over in their own practice. A single teacher is not necessarily able to change his students' history but he can influence student learning

within the bounds of the classroom shared for a particular course. Overall, this review of literature aims to give information regarding the advantages and disadvantages of setting either high or low criteria for grades.

There is much that this paper cannot cover with regards to grading. First off it does not address whether or not grades are a productive tool overall for the field of education as argued against by Kohn (1993). It accepts that grades are present and seeks to discover methods of making the best use of them. Secondly, questions of alternate grading methods, such as narrative evaluations versus grading, as well as the recent changes with regards to standards based grading, are larger questions that the literature in this paper will not cover. In addition, the issue of methods of feedback also lies mostly outside the bounds of this work. Though not revealing letter grades to students has shown to hold a significant impact on performance (Smith & Gorard, 2005) this review will not look at studies that compare various methods of giving feedback.

For the most part, pre-existing situations, teacher bias in grading and post class results will also be outside of the bounds of this review. The majority of subjects in the research that is reviewed will be assumed to have had extensive experience with letter grades. This paper will not account for students' life experiences with grading; it will only focus on the bounds of a specific class. Also issues of student learning will be limited to performance in assessments from the particular class, as well as issues regarding what work is included in the final grade, will be discussed. This paper will not examine other aspects of student learning such as life-long learning, attitude towards subject, or culturally appropriate education but it will raise concerns about these issues when

examining studies that only focus on performance on tests and quizzes. It will also not take into account performance in future classes or other classes in which the subjects are participating in simultaneously.

One question brought up by the issue of grading is the question of what a grade should represent. There are numerous studies that address whether grades should represent ranking comparative to peers, student learning, disciplinary factors, or applied effort. They also show that even when teachers are directed to grade solely on academic performance other factors are still often included (Randall, & Engelhard, 2010). Regardless of what the purpose of grading is, or should be, this literature review is focused on the response that students have to the structure of the grading scale and whether setting a higher criteria for letter grades increases their performance. It doesn't mean that the purpose of grades isn't a worthy question, only that it is a larger question outside the bounds of the literature examined in this paper.

Literature Review

Informing the question of how letter grades should be utilized in the classroom begins by looking at the effect that grading has on student work and student performance. This review will begin by looking at models of high and low criteria grading, called strict and lenient grading scales in the studies, and the performance that students give under different scales. Then this review will critique research which argues that students focus on the aspects of assigned work that is graded and frequently consider non-graded assignments irrelevant. Finally, this paper will examine literature that shows current assessment and grading practices in order to inform the reader of the status quo with regards to testing and grades in various educational systems.

Strict and Lenient Grading Scales

The following group of studies focuses on the effects of applying a strict, moderate, lenient, or peer based (curve) grading scale, on student test scores. They focus on applying high or low criteria on the percentage score requirement for specific letter grades of quizzes and exams to analyze the results that students produce under various grading scales. These studies, primarily rooted in behaviorism, built a foundation in the issue of grading as a system of rewards and punishments. They show that the criteria set to achieve letter grades directly impacts student performance on quizzes and tests.

Among the most foundational studies with regards to grading scale is work done in the early 1970s by Johnston and O'Neill (1973) who looked at the effects of numerous scales of grading with 65 undergraduate students in a junior level course in abnormal psychology. Students were divided into five groups. The first group was informed that their grade would be determined by their relative ranking to other students in the course. One other group was told what criteria would produce an A grade at the beginning of the course and at intervals throughout the course they were informed of what a B and C grade would require. The other three groups cycled through different high, medium, or low criteria for achieving an A grade on each examination.

Johnson and O'Neill (1973) found that as students encountered different criteria their performance rose and fell in tune with the requirements. When students encountered a low criteria exam they significantly underperformed when compared to their peers who encountered the same exam with high criteria. Students who were graded on a curve underperformed all other groups; even being presented with their current standing in the course did not

seem to increase student performance. Finally, the group which was exposed to grading criteria gradually over time in the course showed a significant decrease in performance as the criteria for lower grades were exposed.

Johnston and O'Neill (1973) concluded that students held to high grading criteria for will outperform those held to low criteria. They stated:

In other words, the data suggests that regardless of the particular terms of the criteria, the more precisely stated they are, the sharper will be the degree of control over academic performance. Conversely, the more vaguely described the criteria, the less clear will be their relation to performance, and the more variable that performance will become. (Johnston, & O'Neill, 1973, p. 267)

This study also suggests that grading based on relative ranking of students is an ineffective tool for provoking high student performance. Finally, this study suggests that teachers only define criteria for an A grade to their students. One major issue with this study is its limits in size and participant selection. Participants were all college students which presents a different population from public schools as well as different motivations for performance.

Other studies have further explored Johnston and O'Neill's (1973) work by investigating other forms of grading scales and looking at students' pursuit of mastery in a subject area (Semb, 1974). In this study 89 undergraduate students were divided into two groups in which they faced criteria of either high (100%) or low (60%) performance on quizzes for units of the course or they would have to retake the quiz. The group with high and low criteria alternated for each unit but students were

free to retake quizzes they had passed. Students were also required to take an overall assessment at each class meeting with questions that covered the breadth of the course to assess their retention and learning. The overall assessment was not graded. The results of Semb's (1974) work showed that students under the high requirements not only scored higher on their first attempt at the quizzes, but they also scored higher on parts of the overall assessment in related units. Students also took far more retests when they were required to by higher criteria than when they passed by a lower criteria.

Semb (1974) supports Johnson and O'Neill's (1973) work which indicated that higher criteria will equate better performance, but it adds to this concept by suggesting that higher criteria during learning examinations can result in better a better display of knowledge, even on ungraded work, showing a degree of transfer. This study proposes that high grading criteria could increase retention as well as increasing performance on graded work. Semb suggests that learning held to high grading criteria may carry on beyond the classroom better than learning held to low criteria. His study, while focusing on mastery criteria, does not deal directly with grades. Because it required retests below a certain score, we cannot know if the same effect would take place if quizzes were graded rather than requiring retests. This study does not show how grades may have or have not affected student performance. It also focuses on college students with a fairly limited number of participants.

Further support comes from Powell (1977) who compares grading scale, performance and student teacher evaluation (STE). In this study, five sections of an upper division course were examined over five quarters. Each section was divided into categories for stringent, moderate, and

lenient grading scale. The stringent and moderate scales were based on a percentage system with stringent having higher criteria grading. The lenient score was determined based on class ranking. Three sections were graded with stringent criteria and one with moderate and lenient criteria. Grades were determined based on three tests that were 50% essay and 50% short answer. At the end of the course students ranked their own level of effort as well as the professor and coursework.

Results show average test scores of 80.1% for students with the stringent requirements, 74.6% for students with the moderate requirements, and 70.9% for those with the lenient requirements. Students ranked their own level of effort significantly higher when they were graded on a stringent scale with 66.7% citing their effort level as intense, versus 40.9% for the moderate scale. The average rankings of the course and professor on the STE were all lower for students on the stringent scale than either the moderate or lenient scale. The lenient scale gave results that were equal to or higher than the moderate scale with regards to the STE.

The theory that higher requirements for an A letter grade will result in higher student performance is supported by Powell (1977). It also presents clear results about setting standards for a course that endure the entire length of the course while both Semb (1974) and Johnson and O'Neill (1973) alternated grading criteria over the course of a single class. Powell also supports the belief that students will apply extra effort to reach higher criteria. However, the results on the STE also pose significant questions regarding the effects of higher criteria on the relationship between students and their faculty. It suggests that students graded under high criteria are more likely to find their professors lacking in ability and knowledge than students graded under a more low criteria. This study suffers from

the same limitations as others in this field by dealing with grading only on a college level. While it focuses on a larger participant base than previous studies, it provides results for only one lenient and one moderate group. This means that the resulting decrease in scores possibly could serve more as an anomaly than a reliable trend.

One other look at this topic was performed to examine how the grading scale would affect students who had presented a lower academic aptitude (Johnson, & Beck, 1988). In this study strict and lenient grading scales were applied to 91 students in an elementary psychology course over three years consisting of 11 different sections of the course. Similar to Powell (1977) high and low criteria grading were used; however, grading on a curve was not. Results from the sections were compared with students' SAT scores from their college application. SAT scores were divided into three categories of high, medium and low, with 960 and above (out of a possible 1600) indicating high scores, and 850 and below indicating low scores. Students also filled out a STE at the end of the course with only one question which indicated if they would take another course with the same instructor.

Results for Johnson and Beck (1988) showed that overall course test scores increased with high criteria grading. Students with low SAT scores obtained significantly higher scores on course tests under the stringent scale than the lenient scale, a differential of 12 percent. This is especially remarkable when compared to the smaller differential in test scores for students with high SAT scores, just a couple of percentage points. Johnson and Beck also found a delayed response in the effect of the grading scale on student test scores. The first and second tests showed insignificant differential between high and low criteria grading. Finally, on the STE, students under the stringent scale were over three times

more likely to indicate they were not interested in taking another course with the same instructor.

These results support other findings that the grading scale effects student performance. But what is introduced to the conversation by Johnson and Beck (1988) is the significant effect that high criteria grading had on students with low SAT scores. It suggests that higher aptitude students, as defined by higher SAT scores, could likely manage to attain the grade they wanted regardless of the scale used but lower aptitude students were more likely to rise to the challenge of high criteria to achieve their desired grade in the course. The study states that the “most interesting finding was that the lenient grading policy had its most disastrous effect on the performance of students with low SAT scores” (Johnson, & Beck, 1998, p. 129). This would indicate that by increasing grading criteria, teachers are providing structural assistance to lower aptitude students. However, higher grading criteria had little effect on high aptitude students. One major issue with this study is that it equates high and low SAT scores to high and low aptitude students. Other studies have shown that high school grade point average acts as a better proxy for student performance in college than does aptitude tests (Grove, Wasserman, & Grodner, 2006). The use of SAT scores may not be the best representation of student aptitude as a number of other factors may be affecting student performance on this particular testing.

This entire body of research is heavily predicated on the use of test scores as a measure of student aptitude and performance. Furthermore, the vast majority of studies available utilize college students which present a significantly different population and age band than public school students. These four studies focused on strict

and lenient grading scales make a very strong argument by showing how high criteria grading resulted in higher test scores than low criteria grading in every study. However, it also brings up a number of concerns with setting high criteria grading. Students showed less faith in the abilities of the instructor under high criteria grading. Teachers should be aware that using high criteria grading scales for their classes will likely cause increased student effort and performance; it is also likely to bring about harsh feelings towards the teacher and subject matter, the effects of which are not covered in any of these studies. It is important to note that these studies also suggest that it is the performance of lower academic standing students that are likely to suffer most by low criteria grading. Therefore, when teachers feel the need to create a lenient grading scale to account for lower performing students, they may be causing harm by placing lower expectations on those students. Finally, this group of research is almost entirely based on student test scores which, while relevant in an age of high stakes testing, does not necessarily paint an accurate picture of student learning as a whole. Studies accounting for effects on other aspects of student learning are absent from available research.

Grades and Student Metacognition

While the implications of the above research seem to strongly suggest that increased grading criteria increases student performance and effort this research has primarily been done with regards to tests and quizzes. The next group of studies takes into consideration more recent research that indicates that metacognition and student self-assessment play major roles in student learning. They examine the effects of grading systems in which students are expected to perform critical thinking tasks and how those results are graded. Overall,

they address how it is necessary to grade metacognitive work if students are to consider the work meaningful.

A study which looks at the effects of grading policies with regards to selection of what is graded, rather than how it is graded, presents the issues of limiting grading to just tests and quizzes (Wilson, 1993). In this study observation took place over a three month period in a high school mathematics classroom. The study focused on looking at how teachers were implementing assessment reform in their own class. It consisted of observation followed by discussion with the teachers in question as well as formal interviews with the teachers and students.

One teacher was observed as encouraging student metacognition. Students were frequently asked to assess their own knowledge in subject areas and write down areas they needed to improve in. The teacher was able to accurately recall specific strengths and weaknesses of each individual student. Students were also asked “to respond to higher order thinking questions that go beyond the usual procedural aspects of the lesson” (Wilson, 1993, p. 12). These assignments were either performed in class or assigned as homework. Grades in the class were primarily determined by tests and quizzes on a traditional A through F scale with grades decreasing for each 10 percentage points below 100%. Homework was primarily graded on a check off system and was not reviewed in detail with about 50% of students failing to complete homework on a given day.

Wilson’s (1993) work suggested that one of the major issues in this classroom was that while metacognition was present in the teaching practice it was not experienced by the students. Students did not apply effort to parts of the class which did not affect their grade. It suggests that if metacognition is to be taken seriously in the classroom it must be included in the grading system

rather than exist as an afterthought or spare coursework that is not given serious consideration. If metacognition and student self-assessment are to be considered the most valuable form of student work it is worthy to suggest that they be graded according. This study’s qualitative nature draws conclusions primarily from observer perspective rather than student or teacher reports. It also is extremely limited to just one school and two classrooms.

Another study looks at the effects of imposing high criterion on grading metacognition in an honors college course (Albers, 2009). The class began with 17 students, 2 of which dropped within the first two weeks when the grades of their first essays were posted. The participants were primarily female with only three males and only two non-white students. The course was designed to “create a classroom environment focused on knowledge creation rather than the transmission of information where students felt part of an intellectual community that balanced support and control” (Albers, 2009, p. 270). In this course two tests made up 20% of the grade, a research project consisted 35% of the grade, four essays and six letters to classmates commenting on their essays each equated 15% of the total grade, and questions for the seminar group made up the remaining 10% of the course grade. Work was said to be graded to a high criterion, though no clear grading scale was established in the syllabus.

During the third week students were engaged in a classroom discussion in order to address concerns that had been raised both to the teacher and the director of the honors program. One third of the class expressed dissatisfaction with course and its focus in student directed learning. They expressed a desire for more teacher directed learning. By the middle of the semester about a quarter of students were still

dissatisfied with the course. Participants in the class “were adamant regarding the perceived lack of direction in areas such as course outcomes, grading criteria, and reaction letters to classmates’ essays” (Albers, 2009, p. 273). Students showed a high approval of metacognition and active learning. Several students expressed that the challenge of writing for metacognition proved disheartening because they had generally been considered skilled writers outside of this class. The response of lower than expected grades caused students to report that they would focus their efforts elsewhere, where they felt their effort would be more rewarded. Students who originally opposed the work in the course became more aware of how they were previously willing to settle for surface learning if it meant achieving a higher grade. One student stated that “I am no longer able to [settle for surface learning]. I have found myself striving to get a deeper understanding about my courses” (Albers, p. 276).

This study deals with a wide number of different issues within the topic of grading and student metacognition. First, it displays the potential effectiveness of using high criteria grading on metacognitive work. It also shows significant resistance by students who find their status challenged by this shift in assessment methods. The model of grading in this study suggests that it is possible to use high criteria grading on metacognition and student self-assessment rather than limiting grading to tests and quizzes. It supports the belief that high criteria grading is effective in directing student orientation towards metacognitive work when that work is graded. It also lays out the challenges that teachers should expect to face when implementing this structure. One major area of concern with this study is the participant base which consists of the top 20% of students at a state college. This is not at all representative of a

public school classroom in which perhaps one or two students might eventually qualify as a part of this grouping. It shows that grades do manage to direct orientation of students that already have a significant interest in their grades.

Wilson (1993) and Albers (2009) show examples of both success and failure in working with metacognition in a classroom. In Wilson’s case metacognitive prompts were present but students were not held accountable for their engagement with them. With Albers the structure of the grades in the course included self-examination and reflection as well as examining other student work. The classroom in Wilson’s study was met with failure while Albers experienced significant success. These two studies combined suggest that if teachers want students to be metacognitive they must include this work while assessing their students formally. It suggests that teachers who fail to grade metacognitive work also fail to hold students accountable for their learning. When combined with the studies on strict and lenient grading scale it suggests that holding students accountable to a high level of metacognition in their work and using high criteria grading on metacognitive work would likely result in a high level of metacognition in classrooms. Unfortunately, studies showing this are significantly more difficult to properly construct. The quantitative structure of tests and quizzes produces clearer data than the subjective interviews found in both Wilson and Albers’ work. It is difficult to prove that their method is significantly more successful than other work on grading scale when their work is predicated on the limitations of the method of assessment from the other studies.

Grading in Schools

To properly understand the changes that may be necessary on a large scale, we

must first understand what is graded in classrooms today. If, as Wilson (1993) and Albers (2009) suggest, high criteria grading on metacognitive work should improve student learning it is necessary to look at current grading practices to see if these practices are already in place in schools today. The following group of research shows what methods are being used by teachers to assess students and determine their grades. It also shows current teacher attitudes towards changes in the grading system which conflict significantly with both previous groups of research. It shows us that most teachers rely on low level thinking tests and quizzes to assess their students.

Senk, Thompson, and Beckman (1997) looked at 19 mathematics classrooms in 5 different high schools in 3 different states and Feldman, Alibrandi, and Kropf (1998) examined 91 science teachers from varying schools in Massachusetts. In both studies schools were selected that represented an array of urban, suburban and rural schools. Teachers completed a questionnaire and turned over the assessment instruments used in each class, as well as being interviewed with regards to their grading practices.

In Senk *et al.* (1997) an average of 77% of student grades was based on tests and quizzes with homework making up the majority of the remaining grades. The majority of test questions required only low level reasoning with the three teachers with the highest percentage of questions that required justification teaching geometry. Feldman *et al.* (1998) showed that teachers used tests, quizzes, and laboratory activities as the primary basis for determining report card grades. Classwork and homework also played a significant role in grading practices.

Senk *et al.* (1997) and Feldman *et al.* (1998) show that tests and quizzes are the predominate material used to determine

student grades. Perhaps the most interesting piece of Senk *et al.* is that an almost equal number of teachers stated that methods of assessment other than tests and quizzes were the most informative methods available to assess student knowledge, but only a sliver of this work is reflected in students' grades. This shows a disconnect between grading practices and effective assessment. "Teachers who are in the process of making the types of shifts in assessment practices advocated by the profession need guidance on how to aggregate results of students' performance on these new tasks" (Senk, *et al.*, 1997, p. 213). Without guidance on grading other forms of assessment the continuation of these grading practices would "reinforce the idea in students' minds that the purpose of schooling is the completion of tasks, rather than learning" (Feldman *et al.* 1998, p. 146). While the scale of these studies is relatively small, together they give a picture of grading practices in high school classrooms.

A study performed in Australia that looked at how teachers responded to alternate methods of assessment found that the majority of teachers were content with traditional testing as an accurate assessment (Watt, 2005). It examined 60 different mathematics teachers from 11 schools, eight of which were government and three were private schools. The mathematics staff was surveyed with regards to their attitudes towards traditional testing and alternate assessment methods. It included room for open comment with regards to forms of assessment that teachers felt were effective to assess students in mathematics.

Teachers showed less faith in traditional tests to measure mathematics ability with younger students than with older students. However, the mean response supported the belief that tests 'adequately' measured ability. Written tests were utilized by the vast majority of teachers with other

assignments being utilized by about a third of teachers. Homework as an assessment tool was utilized by less than 10% of teachers. The primary reason stated that teachers would not use alternative assessment methods was that they regarded them to be too subjective. Student journals and self-assessment were criticized as being inappropriate for mathematics (Watt, 2005).

While Watt's (2005) work doesn't directly address grading it is clear from its results that with so few teachers making use of alternate assessment methods it would be impossible for grades to be determined by anything but written tests and quizzes. This study suggests that requiring the use of alternate assessment methods in mathematics classrooms may be necessary in order to have teachers make use of them. This study is limited by its focus in a single metropolitan area in Australia, the results of which may not be reflected in America. It also does not discuss the specific grading policies of the classrooms in which the study takes place. It can help inform this review by showing current assessment methods and resistance to alternate methods of assessment and therefore grading.

Looking at non-math/science grades gives a somewhat different perspective on how grades are formed. A study that reported the grading practices of ten teachers in a high school in New York looked at their grading practices through interviews and evidence (Zoeckler, 2007). During interviews teachers were encouraged to give examples of typical and unusual grading decisions and explain their thinking in assigning grades. Documents such as students' grade books were also examined as well as comparison with local policy documents.

All teachers used a system made up of points either totaled by assignments or divided into categories by assignment type with certain percentages assigned to each

category. Teachers felt that the school's report system limited their means of expressing evaluations of their students. Teachers felt that a fault in the grading process was that report card grades would frequently be invalid by the time a student received it. The study found that grading systems were manipulated by teachers who sought to keep failure rates within acceptable levels for administrators. Also, areas where students had not presented mastery were left behind when the unit ended. None of the teachers interviewed felt that character could be graded directly and all of them stated that they avoided incorporating character in grades. However, many of them stated that they would decide borderline grading cases by ruling in favor of a student they deemed to have good character and ruling against a student they deemed to have bad character.

This study suggests that teachers create a grading system partially based on what they view to be an acceptable number of failures. The teachers in this study all had unique systems and practices with regards to their grading. This study looks into how grades are shaped by the teacher rather than by the students in disciplines where more subjectivity is permitted. It states that "the interpretation and accurate understanding of a grade requires an understanding both of the student receiving the grade and the teacher giving it" (Zoeckler, 2007, p. 100) reinforcing the understanding that the grade itself only has meaning within the context of the learning that takes place in the classroom. This study is severely limited by the context of the study at a single school and the extensive use of interviews in which teachers are likely to present themselves as they wish to be presented. While it does paint an interesting picture of the types of struggles faced by teachers of English this study's limited breadth should be taken into account when considering its general use.

This overview of grading practices shows that little metacognitive work is being graded in classrooms. According to Feldman *et al.* (1998) task completion, not learning, is the focus of students because of grading systems which reward tests, quizzes, and classwork. Senk *et al.* (1997) showed us the majority of tests cover only low level thinking questions but are the primary method of determining grades. Furthermore, Watt (2005) informs us that the majority of teachers feel that testing is an adequate method of assessment. If we believe research regarding the importance of metacognition, self-assessment, and critical thinking to student learning then a significant change is needed in grading practices. In order for change to occur teachers must be free to use high criteria and grade metacognitive work, and turn away from current practices which include grading systems based on achieving an acceptable number of failures (Zoeckler, 2007).

Conclusion

The research reviewed in this paper very clearly shows a link between high criteria grading and high test results for students (Johnson, & O'Neill, 1973). The link between high criteria grading and test results even goes beyond the tests on which the high criteria are set (Semb, 1974). This means that teachers seeking to get better results on standardized tests can likely do so by increasing their own grading criteria when dealing with test relevant material in class. A teacher whose students score low when dealing with decimals on standardized tests could use high criteria grading on his classroom examinations on this subject in order to increase student scores on the standardized tests.

Unfortunately moving towards quality teaching is not quite so simple. There are a number of concerns with regards to how

students respond to high criteria grading that have not yet been fully investigated. Study results show us a more negative perception of teachers and classes when higher criteria grades are used (Powell, 1977; Johnson, & Beck, 1988). There may be long term unintended effects of high criteria grading that are currently unknown. Future studies focusing on long term student learning and subject mastery with regards to high criteria grading are needed to further inform the issue of possible negative effects of high criteria grading. Also, the majority of studies that focus on strict and lenient grading scales have been performed at the college level. This paper has assumed that these effects will transfer into primary and secondary education but studies that inform this have not been made available. Studies that focus on the effect that high criteria grading on public school students are needed.

Though higher criteria grading may produce increased test scores, current concerns with student metacognition indicates that relying only on test scores as a measure of successful student learning simply isn't enough (Wilson, 1993). Studies that have been reviewed in this paper show that the majority of test questions are based on low level thinking problems (Senk *et al.*, 1997). If teachers desire to help prepare their students for the struggles they will encounter outside of the classroom, then teachers must not rely only on test scores as a measure of a student's progress.

Research reviewed in this paper indicates that teachers who are working with metacognition are generally not incorporating this work into student grades (Senk *et al.*, 1997). This is creating a disconnect between what is considered valuable by the teacher and what is considered valuable by the student (Wilson, 1993). This paper suggests that teachers who want to increase students' ability to be

metacognitive include this work heavily in their grading structure. By doing so students are more likely to focus on the metacognitive work as something that is important to their learning (Albers, 2009). Furthermore, based on the studies focused on strict and lenient grading structures, this paper suggests that teachers should set high grading criteria for this work. High criteria grading on metacognition would start with the inclusion of learning journals and portfolios into students' grades as well as students being graded on accurate self-assessment. This would help to train students to more accurately track their learning, assess their work and judge their ability, making them more cognizant of their own learning.

Studies showing the effects of graded metacognition are extremely limited in scope and provide a specific difficulty. Unlike studies that utilize test scores as an evaluation of student success, student metacognition provides somewhat less clearly identifiable results. Additional studies that focus on the most effective method for grading metacognition as well as instructions for using high criteria grading for metacognition are needed to provide a clear picture of the effects of grading this kind of work will have on student learning. While some are advocating grading student work that primarily lies outside of tests and quizzes (Albers, 2009; Winger, 2009), the research has not shown how to do so while making use of high criteria grading.

With regards to worldwide grading practices this paper suggests that the majority of work currently being graded by teachers requires only low level thinking on the part of students, (Senk *et al.* 1997) driving students towards believing this kind of thinking is what is valuable (Wilson, 1993; Feldman *et al.*, 1998). If students are to be required to think at a high level it is necessary that large scale change be made

with regards to how grades are determined and what work is graded. Currently, too many teachers are grading based on criteria that is predicated on providing an acceptable number of failures, setting the bar primarily by the results rather than the potential (Zoeckler, 2007). Students have continually shown that they are capable of rising to the call of high grading criteria. Work needs to be done to see how to change teacher's perceptions towards alternate assessment methods if teachers are to successfully encourage metacognition (Watt, 2005). Teachers must set their expectations appropriately to encourage students to excel.

References

- Albers, C. (2009) Teaching: From Disappointment to Ecstasy. *Teaching Sociology*, 37, 269-282.
- Durm, M. W. (1993) An A is not an A is not an A: A history of grading, *The Educational Forum*, 57, 294-297.
- Feldman, A., Alibrandi, M., & Kropf, A. (1998). Grading with points: The determination of report card grades by high school science teachers. *School Science & Mathematics*, 98(3),140-149.
- Flavell, J. H. (1976) Metacognitive aspects of problem solving. In L. B. Resnick (Ed.), *The nature of intelligence*. Hillsdale, NJ: Erlbaum
- Grove, W. A., Wasserman, T., & Grodner, W. A. (2006) Choosing a proxy for academic aptitude. *Journal of Economic Education*, 37(2), 131-148.
- Johnson, B. G., & Beck, H. P. (1988) Strict and lenient grading scales: How do they affect the performance of college students with high and low SAT scores. *Teaching of Psychology*, 15(3), 127-131.
- Johnston, J. M., and O'Neill, G. (1973). The analysis of performance criteria defining course grades as a

- determinant of college student academic performance. *Journal of Applied Behavior Analysis*, 6, 261-268.
- Kohn, A. (1993) *Punished by rewards*. New York, New York: Houghton Mifflin Company
- Powell, R. W. (1977) Grades, learning, and student evaluation of instruction. *Research in Higher Education*, 7, 193-205.
- Randall, J., & Engelhard, G. (2010) Examining the grading practices of teachers. *Teaching and Teacher Education*, 26, 1372-1380.
- Semb, G. (1974) The effects of mastery criteria and assignment length on college student test performance. *Journal of Applied Behavior Analysis*, 7, 61-69.
- Senk, S. L., Thompson, D. R., & Beckman, C. E. (1997). Assessment and grading in high school mathematics classrooms. *Journal for Research in Mathematics Education*, 28(2), 187-215.
- Smith, E., & Goddard, S. (2005) 'They don't give us our marks': The role of formative feedback in student progress. *Assessment in Education*, 12(1), 21-38.
- Stiggins, R. J., Arter, J. A., Chappuis, J., Chappuis, S. (2004) *Classroom Assessment for Student Learning*. Portland, Oregon: Assessment and Training Institute.
- Watt, H. G. M. (2005) Attitudes to the use of alternative assessment methods in mathematics: A study with secondary mathematics teachers in Sydney, Australia. *Educational Studies in Mathematics*, 58, 21-44.
- Winger, T. (2009) Grading what matters. *Educational Leadership*, 67(3), 73-75
- Wilson, L. D. (1993) What gets graded is what gets valued. *Mathematics Teacher*, 87, 412-414.
- Zoeckler, L. G. (2007) Moral aspects of grading: A study of high school English teachers' perceptions. *American Secondary Education*, 35(2), 83-102

Differentiation through Student-to-Student Interaction

Cooperative learning has been a contentious issue since the mid-1980s, as concerns have been raised for its efficacy in instructing students who are at either extreme of ability or readiness. This qualitative review describes research on two forms of cooperative learning: reciprocal peer tutoring and heterogeneous grouping. The included studies were published from 1982 to 2009, with an emphasis on secondary students and research related to world language classrooms. The review describes results from 10 studies as they relate to students with disabilities, high- and low- achieving students, and gifted students, with participant ages ranging from mid-elementary to undergraduate students. Studies specific to world language were limited, and secondary world language classes nearly non-existent. Results include quantitative performance outcomes as well as qualitative measures of student attitudes. Outcomes are mixed. Recommendations are made to include peer tutoring and heterogeneous grouping in a larger context of classroom strategies. Further research is needed to determine their impact on world language classes and to explore the effects of multiple treatments.

In every classroom there is great diversity in student abilities and developmental levels. Frequently, there are students with a diagnosed disability, whether physical, cognitive, or emotional. However, even students without individualized education plans (IEP) have differing needs that must be met to fully succeed in the classroom. One student may be very intelligent, but easily bored. Another may need additional direct instruction to stay on task. Yet another may be highly driven, self-motivated, and extremely interested in learning. Each of these examples of differing interests and abilities means one student might benefit from a teaching style different from that of their neighbor. Even students who cannot articulate their learning preferences and needs will need variety of content, methods, and structures to learn best.

From my experience as a teacher intern in a high school French classroom, I saw learners who had a strong understanding of structures and concepts in their native

language and students who did not have the skills to connect their verbal language with written. Whether students were native English speakers, whether they were interested in learning a new language, and whether they were ready to apply their understanding of one language to another were all factors I had no control over. This did not excuse me from teaching students who were neither ready to nor interested in learning a language. Because the students were in my class, I had the responsibility to teach each of them to the best of my ability, based on their needs, abilities, and interests.

Likewise, all teachers are expected to be able to display knowledge of both individuals and groups of students, to match instruction to student needs, and to thoroughly understand typical and atypical characteristics of the age group of students. Many teachers can meet these expectations on some level. However, the challenge is to do so in a reliably consistent and effective way for all students without sacrificing other important duties.

Differentiated instruction is one concept and set of methods that is intended to assist teachers in meeting all students' needs without experiencing teacher burnout. Differentiated instruction matches instruction to students by looking at three larger concepts: readiness, interest, and learning profile (Tomlinson, 1999). Readiness looks at a student's ability in the given moment to perform independently in a given subject. A student's readiness may be different in each subject. For example, a student who has an advanced understanding of math may not be a strong reader of English. Interest is related to concepts like intrinsic motivation and implies the possibility of change in level of interest in any given subject. Interest is not directly related to readiness: a student may excel in solving math problems, but may not be interested in pursuing math challenges. Learning profile is the way a student learns best, including "personal and environmental factors" (Tomlinson, 2005, p. 354). Learning profile has been interpreted in a variety of ways, including being linked to Gardner's Multiple Intelligences, cultural values, modalities, and many others (Tomlinson, 1999).

In order to address the wide variety of readiness, interests, and learning profiles in each classroom, changes can be made to the content, process, or the products. Content is the information and concepts students are asked to learn. Process refers to how this learning takes place, whether through direct instruction, groupwork, or other learning activities. Finally, product refers to the means by which students demonstrate their learning, with the potential for an audience beyond the teacher (Tomlinson, 1999).

Given the broad range of potential area for study under differentiated instruction, I have chosen to focus on the research dealing with alterations to classroom process. I am interested in this topic as a way to

accommodate all learners because it seems the most time-efficient way for a teacher to provide differentiation while also encouraging student social development. In particular, I will be focusing on research evidence of the efficacy of using the cooperative learning strategies of peer tutoring and heterogeneous grouping to differentiate instruction. As a generalization, the studies below seem to define heterogeneity as mixed-ability groups based on academic measures. Peer tutoring is generally defined as students paired together to work towards an academic outcome and may take the form of cross-age, reciprocal (both students taking turns as tutor), or fixed (one student is always tutor) tutoring.

Despite the sum of research that argues for the positive benefits of these student-led instructional strategies, some critics claim that gifted students may not benefit from these arrangements (Tomlinson, 2004; Winebrenner, 1992). Part of this challenge may be linked to a lack of focus on gifted students in the research (Robinson, 1990; Slavin, 1990b). Therefore, I will be examining the effects of peer tutoring and heterogeneous groupwork as components of cooperative learning strategies as they apply to students with disabilities, students of average or high ability, and to gifted students when possible. Due to my focus on teaching French, I will also be examining the limited research available on the application of peer tutoring and heterogeneous grouping to world language studies. I will conclude with recommendations for application of these strategies to the classroom as well as additional research recommendations.

As classrooms continue to increase in their diversity, teachers will need to expand and refine their strategies for teaching to all students in a classroom. At the same time, addressing every student's individual interests, readiness, and learning profile on a

daily basis may prove an overwhelming task that discourages continued attempts at differentiation. To help teachers meet the goal of differentiating instruction, they must use the resources already within the classroom: the students themselves.

Literature Review

Differentiation as a classroom strategy in elementary and secondary schools is generally accepted as an effective practice. Researchers such as Mastropieri et al. (2003, 2006) and McDuffie (2009) have found positive impacts for students with disabilities. Slavin (1990b) found overall positive results in meta-analysis of research on cooperative learning as a differentiation strategy, and Tomlinson (1999, 2004, 2005) has written a series of books and articles explaining why differentiation works and how to implement it in the classroom. However, a serious area of contention arises when looking at the top 3-5% of students. Looking at the percentages of classroom student performance is one way gifted students have been identified in research studies (Marland Report, 1972, as cited in Ellett, 1993). While differentiation itself is not contested by groups advocating for gifted learner-specific teaching strategies (Tomlinson, 2004; Winebrenner, 1992), the benefits of differentiation through strategies like heterogeneous grouping and peer tutoring are (Robinson, 1990; Rogers 1991).

Similar meta-analyses by various researchers have found very different results on the impact of cooperative learning on gifted students. Slavin (1990a), Kulik and Kulik (1990), and Johnson et al. (1982) found that cooperative learning positively impacted gifted students, whereas researchers like Feldhusen (1989) and Coleman (1994) found there were at times a negative impact on gifted students. In a meta-analysis of peer tutoring, Stenhoff & Lignugaris-Kraft (2007) reviewed 20 studies

involving students with mild disabilities at the secondary level. They found that peer tutoring generally increased student performance, both when students were measured in groups and as individuals. However, no similar meta-analysis or review exists for students deemed gifted. It is this conflict of results that led to the decision to search for and categorize studies on peer tutoring and heterogeneous grouping by the readiness categories of students. Therefore, each strategy will compare results of studies that look at students with disabilities, students of average readiness, and students considered gifted when available.

To pursue this qualitative meta-analysis, studies were collected using Education Resources Information Center (ERIC) and The Evergreen State College library database. Key terms for search included “heterogeneous grouping,” “peer tutoring,” “cooperative learning,” “gifted,” “academically gifted,” “disabilities,” and “differentiated instruction.”

Peer Tutoring

Peer tutoring initially evolved as a strategy to assist remedial readers in the classroom without resorting to tracking or an excess of on-on-one teacher assistance (Maheady et al., 2006). As previously described, peer tutoring can be comprised of cross-age, fixed, or reciprocal tutoring practices. To conserve reliability, all of the studies described here fall under the latter category, wherein students take turns being the ‘expert’ and the tutee within a pair (dyad). Reciprocal tutoring may occur more frequently than the other formats because of its relatively recent establishment and its apparent research-based success (Thurston et al., 2009). Although there are several studies referenced that focus on peer tutoring for students with disabilities, as well as for students of ‘average’ ability, none specifically focus on gifted students.

One such study by Mastropieri et al. (2003) looked at the difference between two kinds of differentiated strategies for process: guided notes versus peer tutoring. The qualitative and quantitative study looked at a high school world history class for students with mild disabilities. The sample size was 16 students in two classrooms. The control group worked individually with guided notes, which centered around teacher-directed instruction. In the treatment group, students worked in dyads based on reading readiness, reading and summarizing the content passages.

The results were drawn from pre, formative and summative tests, containing both short-answer and multiple-choice questions. Pre- and post- tests of fluency in reading aloud were also conducted, as well as a qualitative survey to measure student reactions to their classroom strategy. The summative test included questions that had not been covered in the class as an additional control measure. Except in reading fluency, a two-way analysis of variance indicated the peer tutoring group benefitted significantly more than the group with guided notes. Finally, qualitative data suggested that students were better able to articulate and understand the purpose of peer tutoring in comparison with guided notes, and would be more likely to want this strategy applied in other classrooms.

The limits of this study are that the sample size was very small and specific to students with disabilities, which may cause differences in effect for students in a mainstream classroom. However, the inclusion of information outside of the study unit does provide evidence that it was the difference between treatments, rather than student ability, that led to the difference in scores and qualitative reactions (Mastropieri et al., 2003).

A larger study by McDuffie et al. (2009) looked at the difference in student

performance between co-taught and non-co-taught inclusive classrooms and their interaction with peer tutoring. The participants were 203 students in 8 inclusive science classrooms over an 8-week period. There were 134 students without disabilities and 60 students with mild disabilities. The control conditions were traditional inclusion classrooms with teacher-directed instruction without a special education teacher and similarly structured co-taught classrooms with a special education specialist. The treatment group featured reciprocal peer tutoring to review material and practice concepts and vocabulary daily.

Results of the study were statistically analyzed comparing the pre, formative and summative tests. According to the data, students in co-taught classrooms outperformed those in non-co-taught classrooms, on both formative and summative tests. Additionally, students who had peer tutoring structures in the classroom performed better on the formative tests. However, results in the peer tutoring condition were not measurably different from those in traditional classrooms on the cumulative exam. This is likely due to the cumulative exam asking students to produce information, which was not a goal of the treatment

Although this study is much larger than the previous described study, there are still limitations due to a control environment that varied per individual classroom. Additionally, classrooms were not observed throughout the study, so data on adherence to the peer tutoring structures were derived from teacher and student worksheets. A study which looked at more complex student thought processes might result in a greater difference between the treatment and control groups, as more students would have greater time to practice this kind of thinking.

A study done by the Juniper Gardens Children's Project (Kamps et al., 2008)

looked at the application of ClassWide Peer Tutoring (CWPT) in middle schools, rather than elementary. CWPT is a specific format of reciprocal peer tutoring that aims to increase reading skills, such as decoding, vocabulary recognition and retention, and fluency in 30 minute time chunks. Additionally, CWPT employs a behaviorist model of controlling student behavior by awarding points or by offering lottery prizes. This particular study by Kamps et al. (2008) compared the efficacy of CWPT with points and CWPT with a lottery to 'baseline' classrooms in 52 total classrooms in five middle schools, in both urban and suburban districts, over a three-year period. Results were analyzed by classroom data, rather than individual students.

Study results were based on vocabulary and comprehension questions developed by the research team, separated by condition and by classroom subject: reading, social studies, and science. Results were determined by averaging student scores and conducting a one-way analysis of variance. Science was not included in the ANOVA due to a small sample size. Overall, all three subjects showed gains in student performance, with significantly higher generalized gains in social studies. Science classrooms had the slightest gains, likely due to the existing style of the classrooms in the district, which focused on activities-based learning (Kamps et al., 2008).

Despite its large sample size (975 students in 52 classes) and extended time period, limitations to the study include a lack of random assignment for baseline and treatment classrooms, as classes were decided by teacher volunteers. The baseline classrooms were not strictly control groups, as no observation was done to determine contamination within classrooms. The time requirement of CWPT makes it less applicable to secondary schools due to a

lack of scheduling flexibility. Additionally, researchers noted that CWPT was not productive in classes that featured a "rich array of activity formats," especially for "average and above average students," (Kamps et al. 2008, p. 142).

Madrid et al. (2007) compared classwide peer tutoring in the context of team cooperation and team competition. The study looked at 16 Hispanic bilingual elementary students identified as academically at-risk by their teacher over a period of 15 weeks. In both the cooperative and competitive peer tutoring structures, students engaged in reciprocal peer tutoring around spelling words randomly selected from a basal reader above the students' grade level. In the competitive treatment, the team of dyads who won the most points kept their win, whereas in the cooperative treatment, the winning points were given to the other team so that both teams had the same number of points. The control was teacher-directed whole-class practice.

Results were calculated from the mean percentage of pre- and post- tests for each condition to determine mean percentage gains. The increase in gain from the competitive condition was 67.2%, compared to 22.2% for the control, and 80.2% for the cooperative condition. Despite the small sample size, this may imply that Hispanic students perform better in classwide cooperative learning situations, even when already working cooperatively with a peer.

Additional limitations of the study are that there was only one teacher in the sample, that all students experienced all conditions, and that the gains are limited to spelling. However, the experience of bilingual students learning spelling in their second language would seem to relate to a world language classroom where spelling may be an important component of written assessment.

As with previous studies, Madrid et al. (2007) looked at academically weak students. In the conducted search, no empirical studies were found that used peer tutoring as a strategy for gifted youth. A review of peer tutoring in secondary schools for students with disabilities highlighted that recent research has focused on self-contained rather than mainstream classrooms, which may limit applications for secondary content-area teachers (Stenhoff & Lignugaris-Kraft, 2007). Additionally, research-based peer tutoring strategies are often time consuming (Kamps et al., 2008; Maheady et al., 2006) and focused on learning material that is of fairly low cognitive demand (Stenhoff and Lignugaris-Kraft, 2007, p. 24). Therefore, it cannot be used as the sole strategy in a classroom.

Heterogeneous Grouping

Heterogeneous grouping is a complementary strategy to assist learners by creating tasks and structures that encourage students to rely on their peers. Heterogeneous grouping differs from paired or group work in the traditional classroom in that students work together on a task that does not require the teacher's direct supervision, but that does require each individual's participation and an outcome or product to be developed by the group (Cohen, 1994). Like peer tutoring, there are diverse adaptations of heterogeneous grouping, but all adhere to these principals of group autonomy and individual responsibility. Unlike peer tutoring, much of the research focuses on the different effects on both high- and low- achieving students as well as students labeled gifted.

Directly related to heterogeneous grouping is cooperative learning, which is defined by Slavin (1990a) as including "group goals and individual accountability" (p. 6), and by Johnson et al. (as cited in Allen, 2006) as being "linked with others in

a way so that one cannot succeed unless they do" (p. 12). The overlap between these definitions is clear, with the main distinction between the two concepts being that Cohen's definition also recommends students in cooperative learning groups to be heterogeneous by readiness, interest, learning profile, and/or ethnicity. The studies in this section may be more directly related to one or the other of these two definitions.

Kenny et al. (1995) studied the gifted student population in cooperative heterogeneous and homogeneous learning groups, examining the impacts of grouping on "achievement, self-concept, and attitude towards school subjects," as well as attitude towards their peers (p. vii). The study looked at 786 elementary students in 42 classrooms in 8 districts. Students were randomly assigned to homogeneous gifted or non-gifted groups or to mixed groups with one gifted student and two non-gifted. The study looked at student performance in math and science.

Again, data was a mix of quantitative and qualitative data. Both science and math had researcher-designed pre- and post- tests. Results were statistically analyzed by category of student grouping, either heterogeneous or homogeneous, gifted or non, and also analyzed with respect to individuals, groups, and dyads. Three surveys were used to measure self-concept, attitude towards school subjects, and attitudes towards peers.

Academic results from the experiment showed little difference in performance for either gifted or non-gifted students, regardless of heterogeneity of grouping. Gifted students did not appear to be negatively impacted by a mixed group, nor did they seem to improve the performance of their non-gifted peers. In terms of self-perception, "there were no differences in the three self-esteem measures (i.e. global,

social, and academic) for heterogeneously grouped gifted students versus homogeneously grouped,” (Kenny et al., 1995, p. xiii). Finally, gifted students were perceived by their peers as more likely leaders and helpers, but were also less liked after the treatment than before. Non-gifted students had lower perceptions of their fellow peers when they were in a group with a gifted student, which implies that heterogeneous groups in general cause more conflict and dislike than homogeneous grouping (Kenny et al., 1995).

Limitations of this study include its short length of study as well as the homogeneity of its participants with 87% White students. Giftedness was defined solely on the basis of standardized tests and IQ tests when available, or by placement in a gifted program, which may not be a good indicator of giftedness (Reis, 2004, p. xii).

Wing-yi Cheng et al. (2008) conducted a study that looked at processes in heterogeneous groupwork and their effects on high and low achievers. The study took place in Hong Kong, and surveyed 1,921 secondary students in 367 groups in 8 schools. The purpose was to reconcile the various results regarding heterogeneous grouping by examining qualitative data, such as student interactions and group processes. Achievement, and thus definition of heterogeneity, was determined by classroom grades. Student groups were asked to research and discuss broad problem-based topics such as air pollution. Four different grouping methods were used: random, student choice, teacher choice, or student choice combined into teacher-chosen larger groups. Teachers and students were trained in project-based learning.

Wing-yi Cheng et al. (2008) used Likert scale surveys that asked about self-efficacy (“I believe I can finish my part of the project successfully”), group processes (“group members work hard together to

achieve a goal”), and group-efficacy (“I believe my group can finish the project successfully”) (p. 212). Results of both individuals and groups were analyzed using hierarchical linear modeling. According to the results, whether or not students would perform better in the group than individually was dependent on the quality of the group processes and interactions. Generally, low achievers had lower self-efficacy than collective efficacy, which meant that groupwork was beneficial. High achievers often had higher self-efficacy than collective efficacy, which meant they would find themselves frustrated by the groupwork, especially when group members did not fully contribute. However, “when the quality of group processes was high, both high and low achievers reported higher collective efficacy than self-efficacy,” (Wing-yi Cheng et al., 2008, 216).

Limitations of the study are that the data regarding self-efficacy, collective efficacy, and quality of group processes were all measured solely by student responses. There were no academic or observational data to confirm the quality of group processes, as there was no common assessment rubric. Therefore, the grades on the projects could not be compared to student perception. Nevertheless, the results seem to indicate that the quality of groupwork may be more important than the heterogeneity of groupwork when it comes to student performance and perceptions of performance.

Webb and Farivar (1994) directed a similar study that also examines this conception of quality of groupwork rather than ipso facto groupwork. The study looked at 166 middle school math students who were randomly selected to participate in a 4-week treatment of peer-directed small groups with specific training on helpful group skills. The control group was also peer-directed small groups, but included

only training on general communication skills.

Data included quantitative measures of pre and post achievement topics in math, as well as extensive qualitative observations of student interactions with regards to asking for and providing help to their peers. Student results were controlled for ethnicity, with Latino and African American students' data combined, despite a Latino population of 55% and African American population of 15%, as there was not a significant difference between the two groups (Webb & Farivar, 1994).

The study statistically analyzed frequency and forms of verbal interaction between individuals, controlled for ethnicity as well as analyzing covariance of math content outcomes. Results showed a significant disparity between white students and students of color in posttest scores, despite controlling for previous achievement. However, the treatment created a positive impact for the Latino and African American students in comparison to the control group. The difference in results between the control and the treatment was attributed to the kinds of questions Latino and African American students asked and the ways in which they sought clarification of the answers given. Training in helpful group skills resulted in an overall greater participation by students of color in the groups versus training in general communication skills.

Limitations of the study are sample size, and the resulting combination of Latino and African American students into one category, as well as length of study and number of teacher-participants. A broader study would yield more generalizable results.

Similarly to Webb and Farivar (1994), Ashman and Gillies (1997) studied heterogeneous cooperative groups of elementary students to determine if training

students in groupwork norms affected their ability to achieve academically and to communicate with their peers in more sophisticated ways. The study involved 192 students in 8 schools in Australia over a 12-week period. Groups were heterogeneous by gender and ability as determined by a general ability test and were randomly assigned to either a training or no training treatment. Content focused on social studies, and measures of complexity of academic thinking were shaped by Bloom's taxonomy.

Results were determined for individual students based on multivariate analyses of variance examining the impact of gender, ability, time, and treatment. There was a significant increase in cooperative behavior and communication in the trained groups. Groups that had been trained in groupwork norms also spent less time off-task and were less likely to pursue independent work from the group. Additionally, academic outcomes measured by two-way analysis of variance showed positive impact for the post-test results.

Possible limitations of the study are the lack of data on student ethnic and linguistic diversity. Because the study took place in Australia, cultural norms or school structures may vary enough that the data is not fully generalizable. Finally, although the results seem to support training for cooperative group norms prior to conducting groupwork, secondary students may need different structures to accomplish this training in comparison to upper elementary students.

World Language

Within the field of world language instruction, there is an insufficient quantity of research on peer tutoring and heterogeneous grouping to be able to do a meta-analysis such as is possible for the strategies in general. Expanding search

criteria in ERIC to non-peer-reviewed sources resulted in several action research articles. In the interest of continuity, only peer-reviewed research is described here, in the form of one study each for peer tutoring and for cooperative learning. These studies are meant to show examples of research-based methods to apply the strategies discussed here to the specific content area of world languages.

A recent international study examined reciprocal peer tutoring as a teaching strategy in a world language class. Thurston et al. (2009) studied 78 primary school students in two schools, one in Scotland, one in Spain. Students communicated asynchronously through written web messages over an 8-week time period 5 times each. Pre- and post- tests included measures of reading comprehension and language structures in the students' native language, an attitude questionnaire regarding the target language, and a free write in the target language. Cross-tutor assistance was measured on a 4-point scale regarding the complexity and scaffolding of the assistance given for an error in the online exchanges.

Based on a two-way analysis of variance of language complexity and attitudes, all students showed an increase in complexity of messages and a decrease of errors, as well as gains in positive attitudes about their partner's language. Tutors advanced in their ability to give more complex forms of feedback and scaffolding, while also maintaining a positive tone to corrections, such as, "I think you meant..." (Thurston et al., 2009, p. 469).

Limitations of this study are the sample size, as the study looked only at two schools. Additionally, school structures in Spain and Scotland may differ enough to limit its application to U.S. schools. Similar studies done in the U.S. would help clarify this issue.

Allen's (2006) study looked at cooperative learning through a qualitative study done at the undergraduate level. Thirty-four students in an intermediate French class conducted group investigations of cultural content based on Slavin's 6-stage model (as cited in Allen). Students were selected based on class membership, and were almost entirely white, middle-class, and mid-western. There was no control group, as this was a peer-reviewed version of action research.

Likert-survey data was described as it related to student perceptions of meeting project objectives and effort expended on either the individual or group portions of the project. Fewer than half of the students communicated the group portions of the task as their highest priority. Student perceptions of meeting project objectives were positive, but were not statistically analyzed.

Limitations of the study are the small, homogeneous sample size and lack of statistical analysis. Additionally, results may have been skewed by participant sentiment that their grades were dependent upon positive responses in the survey. However, the study provides a model lesson development for future studies in world language courses.

Discussion

This paper sought to establish a relationship between peer tutoring or heterogeneous groupwork and learning as each strategy relates to students of varying readiness or ability. Many of the studies presented student ability as a fixed category, facilitating categorization of studies based on high- or low-ability, disability, or gifted classifications of students, and thus falling outside of the realm of readiness. However, the term differentiated instruction retained its relevance due to the possibility for application of these cooperative learning strategies in a variety of classroom contexts

that would aid in the creation of differentiated tasks by process or product, or by readiness or interest.

As evidenced by the peer tutoring studies described here, there seems to be a correlation between reciprocal peer tutoring and an increase in both performance and student positive attitude. However, as peer tutoring is often used as a treatment to assist students with learning disabilities, there is little to no evidence examining the impact of peer tutoring program on high-ability or gifted students. Likewise, the research tended to focus on students in elementary or middle schools, especially when the sample was an inclusive classroom of students.

On the other side of the spectrum, the four studies that examined the impacts of heterogeneous grouping and cooperative learning indicated a positive correlation for performance and student attitudes about their work and their peers. The research around heterogeneous grouping tended to focus on the dichotomy between gifted and average students, with very little research undertaken to examine the impacts on students with disabilities.

Although this paper by no means exhaustively examined classroom strategies involving student interactions, both of these strategies seem to have a logical place in the classroom, including world languages. From researchers like Slavin (1990a), who said that “simply putting high achievers together does little for their achievement,” to Webb (2002), who explained the kinds of information students must convey to one another in order to help “productively,” to McMaster & Fuchs (2002), who in a qualitative review of cooperative learning found only 6 out of 15 studies to positively impact students with disabilities, it is evident that the characteristics to create positive and productive groupwork continue to be explored and refined by researchers.

However, this continual refining does not dismiss these group and peer strategies from being included in a larger scope of classroom tools.

Recommendations

Based on this research, both peer tutoring and heterogeneous grouping seem to be strategies which, when used in conjunction, can create positive academic and possibly social impacts on students of varying needs and abilities. Additional teaching strategies, including more traditional whole-class instruction, homogeneous groups, and one-on-one teacher-student assistance, are also appropriate and should be used in combination with the strategies discussed here.

Due to the varied results of cooperative learning and heterogeneous grouping based on inappropriate groupwork, professional development would benefit both teachers and students. Professional development should emphasize creation of conditions that foster positive results, such as individual accountability, group goals, and structures and strategies for students to engage in useful helping behaviors. Likewise, professional development regarding peer tutoring would be useful to instruct on general training and specific structures for student access to communication strategies.

Further teacher action research could also be a useful tool to help individual teachers address their own classroom contexts in ways that larger research studies cannot. Variables to attend to include student achievement levels, attitudes towards both the content area and peers, and forms of student-to-student communication, such as cognitive levels of assistance provided.

Conclusion

Research that could assist in illuminating the applications of peer tutoring and heterogeneous grouping to the inclusive secondary classroom includes additional studies at the secondary level. As most of the studies on peer tutoring looked at elementary and middle school students, it would be useful to see if development changes in students at the secondary level affect academic and social outcomes. Although studies that look at content-specific outcomes were found in the larger search, the focus tended to be on either reading or math outcomes, likely because these disciplines face the greatest pressure for performance on standardized testing. Studies looking specifically at world language or ESL classrooms would be useful in order to more directly apply strategies to a world language classroom.

Finally, multiple treatment studies would be a useful addition to research on learning through peer-interactions. By combining several instructional strategies over a long period of time, it would be possible to determine which strategies correlated to the greatest academic gains for students. It might also lead to research on the most effective ratios of these strategies to time spent in the classroom.

References

- Allen, L.Q. (2006). Investigating culture through cooperative learning. *Foreign Language Annals*, 39(1), 11-21.
- Cohen, E.G. (1994). *Designing groupwork: Strategies for the heterogeneous classroom* (2nd ed.). New York, NY: Teachers College Press.
- Coleman, M.R. (1994). Using cooperative learning with gifted students. *The Gifted Child Today*, 17(6), 36-38.
- Ellett, P. (1993). Cooperative learning and gifted education. *Roeper Review*, 16(2), 114-116. doi: 10.1080/02783199309553553
- Feldhusen, J.F. (1989). Synthesis of research on gifted youth. *Educational Leadership*, 46(6), 6-11.
- Johnson, D.W., Johnson, R. T., & Smith, K. (1982). Effects of cooperative and individualistic instruction on the achievement of handicapped, regular, and gifted students. *Journal of Social Psychology*, 116, 277-283.
- Kamps, D.M., Greenwood, C., Arreaga-Mayer, C., Baldwin Veerkamp, M., Utley, C., Tapia, Y.,...Bannister, H. (2008). The efficacy of ClassWide peer tutoring in middle schools. *Education and Treatment of Children*, 31(2), 119-152.
- Kenny, D.A., Archambault, F.X., & Hallmark, B.W. (1995). *The effects of group composition on gifted and non-gifted elementary students in cooperative learning groups*. (NRC/GT RM-95116). Washington, D.C.: Office of Educational Research and Improvement.
- Kulik, J.A., & Kulik, C.C. (1990). Ability grouping and gifted students. In N. Colangelo & G.A. Davis (Eds.). *Handbook of gifted education* (pp. 178-196). Boston: Allyn & Bacon.
- Madrid, L.D., Canas, M., & Ortega-Medina, M. (2007). Effects of team competition versus team cooperation in classwide peer tutoring. *The Journal of Educational Research*, 100(3), 155-160.
- Maheady, L., Mallette, B., & Harper, G.F. (2006). Four classwide peer tutoring models: Similarities, differences, and implications for research and practice. *Reading & Writing Quarterly*, 22, 65-89. doi: 10.1080/10573560500203541
- Mastropieri, M.A., Scruggs, T.E., Spencer, V., & Fontana, J. (2003). Promoting success in high school world history:

- Peer tutoring versus guided notes. *Learning Disabilities Research & Practice*, 18(1), 52-65.
- Mastropieri, M.A., Scruggs, T.E., Norland, J.J., Berkeley, S., McDuffie, K., Tornquist, E.H., Connors, N. (2006). Differentiated curriculum enhancements in inclusive middle school science: Effects on classroom and high-stakes tests. *The Journal of Special Education*, 40(3), 130-137.
- McDuffie, K.A., Mastropieri, M.A., & Scruggs, T.E. (2009). Differential effects of peer tutoring in co-taught and non-co-taught classes: Results for content learning and student-teacher interactions. *Exceptional Children*, 75(4), 493-510.
- McMaster, K.N., & Fuchs, D. (2002). Effects of cooperative learning on the academic achievement of students with learning disabilities: An update of Tateyama-Sniezek's review. *Learning Disabilities Research & Practice*, 17(2), 107-117.
- Reis, S.M. (2004). Series introduction. In C.A. Tomlinson (Ed.), *Differentiation for gifted and talented students* (pp.xxiii-xxxiv). Thousand Oaks, CA: Corwin Press.
- Robinson, A. (1990). Cooperation or exploitation? The argument against cooperative learning for talented students. *Journal for the Education of the Gifted*, 14(1), 9-27.
- Rogers, K.B. (1991). *The relationship of grouping practices to the education of the gifted and talented learner: Research-based decision making series*. Washington, D.C.: Office of Educational Research and Improvement.
- Slavin, R.E. (1990a). Ability grouping, cooperative learning, and the gifted. *Journal for the Education of the Gifted*, 14(1), 3-8.
- Slavin, R.E. (1990b). Achievement effects of ability grouping in secondary schools: A best evidence synthesis. *Review of Educational Research*, 60(3), 471-499.
- Stenhoff, D.M., & Lignugaris-Kraft, B. (2007). A review of the effects of peer tutoring on students with mild disabilities in secondary settings. *Exceptional Children*, 74(1), 8-30.
- Tomlinson, C.A. (1999). *The differentiated classroom: Responding to the needs of all learners*. Upper Saddle River, NJ: Pearson Education, Inc.
- Tomlinson, C.A. (2004). Introduction. In C.A. Tomlinson (Ed.), *Differentiation for gifted and talented students* (pp.xxiii-xxxiv). Thousand Oaks, CA: Corwin Press.
- Tomlinson, C.A. (2005). *Differentiation in practice: A resource guide for differentiating curriculum: Grades 9-12*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Thurston, A., Duran, D., Cunningham, E., Blanch, S., & Topping, K. (2009). International on-line reciprocal peer tutoring to promote modern language development in primary schools. *Computers & Education*, 53, 462-472. doi: 10.1016/j.compedu.2009.03.005
- Webb, N.M., Farivar, S.H., & Mastergeorge, A.M. (2002). Productive helping in groups. *Theory into Practice*, 41(1), 13-20.
- Webb, N.M., & Farivar, S.H. (1994). Promoting helping behavior in cooperative small groups in middle school mathematics. *American Educational Research Journal*, 31(2), 369-395.
- Winebrenner, S. (1992). *Teaching gifted kids in the regular classroom*. Minneapolis, MN: Free Spirit Publishing.

Wing-Yi Cheng, R., Lam, S., & Chung-Yan Chan, J. (2008). When high achievers and low achievers work in the same group: The roles of group heterogeneity and

processes in project-based learning. *British Journal of Educational Psychology*, 78(2), 205-221.

Jeremy T.M. Dempsey

Focused Engagement For Today's Classroom

The author examined the effects of engagement on academic growth through the lens of student choice. The emphasis of this critical review of the literature examined the role of student choice on productive engagement when educating early elementary students. The critical research review examined 10 empirical, peer reviewed studies that directly dealt with engagement and/ or student choice. The research findings suggested: (i) students who were intrinsically engaged did not always demonstrate academic growth; and (ii) that student choice has demonstrated increased engagement in reading and mathematics. Potential implications for practice to increase effectiveness of choice in the classroom are: (i) attending to students socioemotional relatedness, (ii) present clear instruction, and (iii) monitor student interest. Few of the studies reviewed directly pertained to early elementary students, which left questions about how the findings transfer to this age group.

My research topic emerged from my experiences as a student teacher in a first grade classroom for a ten-week period. During my student teaching I regularly had to redirect students to stay on task. During instructional periods, there was typically at least one student who was distracted. Student's lack of interest during instruction and participation in class led to needlessly repetitive instruction and to loss of valuable learning time. I observed students with immense potential underachieve due to their lack of interest in topics presented in class. In other circumstances, I witnessed students deeply engaged in lessons, but they were not achieving the desired learning goals of the lesson. For example, instead of students using manipulatives to gain an understanding of mathematic computations they played random games with them. Examining these activities lead me to question what I could do as an instructor to help change the habits of inattentiveness and repeated instruction that were forming in my classroom.

To help my instructional techniques to enable students to reach higher academic potential I look to answer the question of what are effective practices for engaging early elementary students' interests and motivation in ways that will support academic growth? The term academic growth for the purposes of this review refers to the students ability to display and expand on content knowledge presented in the classroom. This topic, is not only relevant to my future teaching, but also the learning community because the goal of teachers is to help students achieve greater academic heights. To accomplish this goal teachers need to know what motivates and engages students to learn. I saw students who were engaged in lessons and focused on the learning goals produce quality work. When students were engaged and focused on the lesson they demonstrated a higher level of understanding and retention of information. The purpose of this review is to examine teaching strategies that produce moments of focused engagement in lessons that lead to

academic growth. Numerous studies have highlighted the positive relationship between intrinsic motivation and academic achievement (Gabriel, 2007; Leroy, 2007; Vansteenkiste, 2006; Park, 2005; Vansteenkiste, 2005).

Research has shown that there is a positive relationship between student engagement and academic growth. “The positive effects of student engagement are consistent regardless of SES and minority” (Park, 2005, p. 94). The positive findings in research such as increased intrinsic motivation, classroom performance, behavior, and autonomy have been linked to student engagement (Bao, 2008; Shillingford, 2008; Gabriel, 2007; Leroy, 2007; Vansteenkiste, 2006; Park, 2005; Vansteenkiste, 2005). The positive findings demonstrate the importance of student engagement in the classroom. Educators use various methods to create student engagement in the classroom, which range from emphasizing student autonomy, implementing reward systems, exercising student choice, modifying classroom environment, creating collaboration among students, implementing technology based education, and hands on education (Lowe, 2010; Means, 2010; Boa, 2008; Johnson, 2008; Pugh, 2006; Assor, 2002).

Despite this evidence, whether or not engagement is important to focus on is still a point of discussion (Lutz, 2006). Some people think it’s more important to address achievement concerns by developing a universal curriculum. As educators are embracing the idea that engagement promotes learning, administrators are looking to find a universal curriculum that engages students (Yung-peng et al., 2006). To assist teachers in creating engagement and understanding of classroom assignments, administrators are turning to

universal national education curriculums. Universal curriculums falter because of the assumption that there is a universal teaching method that works for all students. China has used a universal curriculum for years with the understanding that educators need to supplement the curriculum to individualize learning for student growth (Yung-peng et al., 2006). Supplementing curriculum pertains to when the teacher adds instruction and materials that are not directly connected to the curriculum provided. Teachers are having to supplement curriculums because the curriculums do not meet every students educational needs. Teachers are using multiple instructional strategies for supplementation, one strategy being used is student choice. Some researchers have found that student choice is linked to engagement in students which leads to improved academic growth (Shegar, 2010; Boa, 2008; Leroy, 2007; Johnson, 2006). This review will examine whether student choice is a viable instructional strategy for use in the classroom. It is the purpose of this review to examine strategies to find a better understanding of (1) how teachers employ choice with students, (2) if it produces academic growth, and engagement in students.

When educators observe students who are engaged in lessons but not on the given assignment raises the question of how to achieve focused student engagement? What teaching strategies can the teacher use to have his/her students be engaged on the given task at hand and demonstrate consistent academic growth? To answer these questions this review will dissect the concept of student’s choice to determine if it promotes focused engagement that produces positive academic growth. The studies were gathered in a search completed in February of 2011 using the Educational Resource

Information Center (ERIC), Questia.com, and the library book database at the Evergreen State College. Initially the search terms “engagement” and “student choice” were used to identify potential studies for use in my critical review.

Engagement

As administrators and teachers are changing their perception of educational toward engagement and strategies to enhance engagement in the classroom, the concept that student engagement leads to academic growth is debatable. For the purpose of this review engagement is defined as “student’s psychological investment in and effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote” (Park, 2005, p. 88). The following two studies demonstrate the debate between educators over whether student engagement is the key to helping students achieve greater academic growth.

Studies have shown that student engagement does not always foster academic growth (Lowe, 2010; Lutz, 2005). Lutz (2005) found that students who were engaged in reading demonstrated less academic comprehension than students who were less engaged in a reading class combined with science. To come to this conclusion Lutz conducted a study that addressed the questions of to what extent do classes differ in comprehension and how does student engagement in reading differ between each class and over time. The study was made up of three grade four classrooms. The schools were located in Fredrick, Maryland. The school district was made up of the following ethnic populations: 87% European American, 8% African American, 2% Asian American, and 2% Hispanic. The classes were comparable in size averaging

around 24 students. Class 1 and 2 were taught lessons that combined reading and science. Class 3 had lessons solely focused on reading. The results from the study of the three classes showed that Class 3 demonstrated a higher level of engagement than Class 1 and Class 2. Class 1 and Class 2 demonstrated higher level comprehension skills. While not the main focus of the study researchers found that individual attention to students lead to 76% of the students to be more engaged in the lessons.

The limitations of this study were the status of students with special needs and diversity of gender in the study were not disclosed. The scoring system to judge whether the students were engaged was based on a rubric. The scoring of each rubric was done by observing student reaction to teacher instruction. For example, a yawn by a student produced a low score versus a smile by a student produced a higher score. The causes for such reactions could be from many different factors other than the student’s interest in the subject being taught. Another limiting factor in these results is that class 3 was given less comprehensive tasks to accomplish which could relate to why they didn’t demonstrate a proportionate amount of academic gains. The strengths of this study are that it was performed with subjects in an elementary grade level. The ethnic make-up of the study was diverse and students of low socioeconomic status were accounted for.

The implications this study has on teaching practices is that providing time in lessons to give students individual attention is likely to support engagement in students. Another implication for teaching practices is that classroom instruction that engages students is not a consistent predictor of student academic growth.

There have also been studies that have demonstrated that engaged students achieve academic growth (Park, 2005; Shen, 2007). Contrary to Lutz's (2005) findings Park (2005) conducted a study that resulted in findings that demonstrated "a positive relationship between student engagement and academic growth" (p 94). Park's study addressed the question of how much math achievement can be predicted by student engagement and classroom variables. This study was based on a national survey that consisted of three grades: first, third, and seventh. The study specifically focused on 6,000 first grade students and 460 math teachers. The scoring of student's levels of engagement was done using studies conducted by Finn (Park, 2005). The results revealed a positive relationship between engagement and academic growth. In other words the more engaged students participated in classroom discussion, came to class prepared, and spent more time than required on assignments. The relationship between engagement and academic growth was consistent in all ethnicities and genders. "It is proven that student engagement is a significant predictor of students' success in a school. Therefore, student engagement should be emphasized in school and in educational policy" (p. 94).

The limitations of this study are that secondary data was used to generalize findings. In other words the initial data may have been taken out of context to support the findings of the researchers. Another limitation is that the scoring method used didn't fully apply to the definitions of student's engagement used from Finn (Park, 2005) as the students were in first grade. Finn's theory of engagement consists of actions that are not applicable to early elementary students such as taking part in school government. To meet and be able to

apply the full definitions from Finn's research studies should be conducted with students in middle school or high school.

Park (2005) found that students who are engaged in classroom instruction are less likely to be disruptive and more likely to complete assignments. Lutz (2005) suggested further research to determine whether engagement leads to academic gains. Lutz also found that students who receive individual attention maybe more likely to be engaged than those who don't. From reading these studies, one could conclude that student engagement is more likely to keep students from being disruptive in class which will help them to complete their assignments. To achieve engagement teachers can give students more one on one attention. A teaching strategy that may help to create opportunities for individualized attention is students choice.

Student Choice - Support for the Student Choice Strategy

One of the strategies some educators have been found to use in their classrooms to promote student engagement, and academic growth is student choice:

By 'student choice,' we mean a situation in which the behavior (of 'choosing') is not overly determined by the instructional system. That is, the student is presented with a situation in which individual variables (student's history, interest, and current motivational state) are major determinants of the response emitted (i.e. the choice made). (Geis, 1972, p. 1)

Some of the ways teachers use choice in the classroom is by allowing students to decide the type of assignment, working in

groups, or individually, and rewards for completed work. The concept behind giving student's choice in the classroom is to give students autonomy.

Another concept behind student choice is to give students a feeling of control over their education. Students who come from unstable environments have a tendency to bring their issues with them into the classroom. Some of these issues may come from broken homes where there is an abusive parent, a parent is in prison, a parent walked out, drug abuse or there was a messy break up between the parents (Shillingford, 2008). The divorce rate in America for a first marriage is 41%, second marriage is 60%, and a third marriage is 73% (<http://www.divorcestatistics.org/>). In some circumstances, children with only one parent at home have been recorded to have behavior issues:

Insecure attachment often occurs subsequently to pathogenic parenting or abrupt and extended separation from primary caregivers. Securely attached children advance through developmental stages toward successful psychosocial and school-related functioning more efficaciously than insecurely attached children. Thus, abrupt separation from a parent can negatively affect children's social-emotional development. (Shillingford, 2008, p. 65)

A way to help students develop their social-emotional skills is to provide them with choice. "Giving the student's choices regarding tasks, students made behavioral choices that effectively and appropriately satisfied their developmental needs and led to positive educational outcomes" (Walter, 2008, p. 4). In other words, a way to help

students to develop social-emotional skills and to create a feeling of control in their life is to give them choices in the classroom. The following studies will support the strategy of student choice.

As classrooms become more and more diverse there are more cultural perspectives that need to be taken into account. One such perspective is different cultures and their preference of learning style. A study conducted by Ellison, Boykin, Tyler, and Dillihunt (2005) found that African American students preferred to work in groups in a noncompetitive atmosphere. The study also produced results that demonstrated that white students had a stronger preference for working individually in a competitive environment. In increasingly diverse classrooms and trying to meet the needs of all students to promote educational growth it appears necessary to provide choice for students.

Johnson (2006) found slightly different results in her study, which investigated 5th grade students perceptions of learning preferences and classroom-learning environment. The study was conducted in coordination with two hundred fourteen, 5th-grade elementary students, from six schools in the Mid-Atlantic region of the United States. There were two schools from three different geographic locations that represented diverse ethnic populations. This sample group was made up of 56 African American, 122 White, four Latino, three Asian-American, six Native American, and 23 students indicated other as their ethnic background. This study was conducted using four separate questionnaires to gain insight into students preferred learning environment. None of these tests resulted in any significant differences in preferred learning environments between ethnic groups. The tests resulted in 73% of students

preferred group work, 14.78% preferred to work individually, and 12% of students preferred to have a competitive learning environment.

The limitations of this study are that it was solely done through questionnaires and there were no physical tests done to see how students performed in groups compared to individually or in a competitive environment compared to a relaxed environment. This study is not generalizable due to its sample size and the geographic area it was performed in. The study doesn't specifically say where the geographic area was, which limits understanding of how the community environment could have affected the results. The age group of the sample is another limiting factor in the study. If the sample had ranged in grades, it would have created better understanding of student's preferences for learning.

The second study that supports the strategy of student choice in the classroom is based on popular culture as a resource in the classroom to promote students to read. The study conducted by Shegar (2010) addresses the question of whether using popular culture reading material will enhance students interest to read. This study was part of a larger project that documented reading practices in bilingual homes. The study consisted of five boys ranged in ages from five to six. The students range in grade level from kindergarten to 2nd grade. The boys were picked so that they varied in socioeconomic status location and parents educational achievement. The data for the study was collected through home visits that monitored the boys reading habits. The researchers monitored and interviewed the subjects with the consent of their parents and with the subjects understanding that interviews could stop whenever the subject wanted. The study was conducted over nine

months with a total of thirty hours of interviews. The study found that using popular culture stimulated students interest to read other related texts. The findings are beneficial to student's competence as research has demonstrated that exposure to texts has a positive relationship to the development of literacy (Shegar, 2010).

Some of the limitations of this study are the small sample size that failed to include any variations in gender or ethnicity.. The study was located in Singapore, which limits the ability to relate the findings outside that immediate area. The answers of the subjects were based on the interpretations of the researchers which could have created some confirmation bias. The strengths of the study were that researchers did confer with one another to ensure that interpretations of the subjects was consistent. The research was conducted over a period of nine months which helped to confirm the research findings. The subjects in the study are an age that is applicable to elementary education.

The implications this study has on student choice is that in combining popular culture texts in the classroom may help some students to engage in reading. When applying this strategy it is important to establish clear guidelines with a critical perspective on the learning that will be able to be achieved from each text. It is also important for the educator to review each text to ensure to content is grade level appropriate. The study found that if literature is not grade level appropriate students may not understand what they are reading or become discouraged

The following study investigated how socioemotional relatedness, choice, and autonomy were related to Chinese children's motivation. Bao (2008) conducted a series of studies consisting of 261 Chinese 5th

grade students of which 134 were boys and 127 were girls. Three of the studies had an aspect of student choice in them. The groups were a choice group and a group that had to do what their mothers picked for them. The studies found that students who had freedom of choice reported higher motivation. Motivation was determined by the students who continued on with work when they given the choice to stop. The study also found that students who had a good relationship with the authoritative figure making the decision demonstrated a high level of motivation and autonomy. Students who did not have a good relationship with the authoritative figure making the decision demonstrated low motivation and heteronomy. This study was conducted using questionnaires;

The strengths of this study are that the subjects are all elementary age students. The work the students were performing was applicable to work that is done in the United States. The factors of this study that make it not transferable are that it was conducted with only Chinese children in Hong Kong. Other limiting factors of this study are that there was no mention of socioeconomic status and learning disabilities among students.

Bao's study has relevant implications for informing teachers about the strategy of student choice in the classroom. The study suggests that students with good and poor relations with authority figures demonstrate a high level of motivation when given the freedom of choice in the classroom. The study also suggests that students don't necessarily need choice in the classroom to experience autonomy.

A study by Leroy (2007) addressed the question of what can teachers do to create an autonomy supportive climate in the classroom. "The data collected for this study

was taken from a larger research project commissioned by the French ministry. Various factors likely to influence teaching practices as well as students behaviors and academic performance, were examined in an attempt to shed light on motivational processes for students and teachers" (Leroy, 2007, p. 533). One teaching practice used to establish autonomy in the classroom was student choice. The participants included 336 fifth-grade teachers made up of 125 men and 211 women. They were randomly chosen from 269 schools across France. The study datum was gathered by having all the teachers anonymously complete questionnaires. The findings of this study were that if teachers believed that the harder they worked resulted in greater student success the more likely they were to create a classroom environment that supported autonomy. The study also found that the more experienced the teachers were the more they reported creating classrooms that supported intrinsic motivation. This study found that the more experienced teacher managed their classroom by way of enhanced student competence through raised self-confidence, empathetic to their students' needs, and provided students more opportunities for choices (Leroy, 2007, p. 539).

The study is not transferable since the sample group consisted of only French teachers. The datum was part of a larger study and was interpreted to fit this study, and the datum was collected through a questionnaire. The socioeconomic status and ethnicities of the teachers and their students are not specified in the research data.

The findings of this study are relative to the strategy of student choice as the findings indicated that experienced teachers create more autonomy and choice in the classroom than inexperienced teachers. It is

generally recognized in education that as teachers gain seniority they acquire a wider repertoire to make more humanistic pedagogical choices (Leroy, 2007). When creating these educated pedagogical choices giving students the opportunity to choose is part of their strategies.

Cons of the Student Choice Strategy

To balance the perspective of this review the following studies will address why student choice in the classroom is not conducive to a learning environment focused on academic achievement. Flowerday (2003) noted several studies that suggest that regimented teacher directed environments lower students sense of autonomy and motivation to complete assignments, which results in less learning.

To confirm these studies Flowerday conducted a study “to examine the effects of choice on cognitive engagement and affective engagement” (Flowerday, 2003, p. 208). The participants of this study were made up of 84 college undergraduates of which 46 were women and 38 were men. The participants were required to do the study as part of the class assignment. The materials used for the study were an interest for control scale; a book; an interest questionnaire; an essay; a crossword puzzle; and an attitude checklist. The interest questionnaire was filled out directly after reading the text and the attitude checklist completed after subjects finished all other aspects of the experiment. Once the participants completed the text, half were given the choice to either write an essay on the book or fill out a crossword puzzle. The other half of the participants were directed to fill out the essay or complete the crossword. The results of the study found that the choices given didn’t enhance cognitive engagement. The study also found

that the students who were not given a choice worked harder than those who were given a choice. “Choice had little impact positive on affective engagement, and a negative impact on self-reports of work effort” (Flowerday, 2003, p. 212).

The limitations of this study that make it not transferable are the study was conducted on U.S. college students. The motivation of a college student to complete work versus that of an elementary student have many different variables one such variable is college students choose to go to school. College students are also choosing the courses that they recognize as contributing to an end goal. Elementary students don’t have the same cognitive awareness. Other limiting factors of the study are the small sample size; the lack of information on ethnicities and gender; and there was no information on socioeconomic variables.

This study is relevant to strategies of student choice in that the findings suggest that student choice does not always cause students to work harder. This study also suggests that student choice alone does not enhance cognitive engagement.

The second study that questions the strategy of student choice is focused on which autonomy-enhancing behaviors of teachers help predict engagement in schoolwork. The study conducted by Assor (2002) included 862 Israeli students ranging in classroom grades from three to eight. The students were from three different schools that were made up of various socioeconomic statuses. The students took part in filling out questionnaires that assessed variables of interest. The findings of this study were that teacher actions that link assignments to student’s goals and interests produced a feeling of autonomy. The study also found that the option of student choice was not

consistent in establishing the feeling of autonomy in all students. The study found that providing students with choice to create space for students to connect schoolwork to their personal interest doesn't work for all students. Students may not find any connection between their personal interests and work therefore they don't know what to do with the open space that the choice option has created. In other words student choice may not be important to students as they find all options uninteresting. When teachers forced uninteresting topics on the students it didn't have "a serious negative impact" (Assor, 2002, p. 274).

Some of the limitations of this study that make it not transferable are they used only Israeli students. Another limiting factor in the study was there was no mention students with learning disabilities. More limiting factors of the study were that there was no mention of ethnicities and genders of students.

This study is relevant to the implications of student choice in the classroom as it suggests that student choice is not a universal answer to building autonomy in the classroom. The study found that assigning students work that has no interest to them doesn't produce serious negative effects. This study suggests that teachers to use a variety of autonomy building behaviors.

The third study that questions the strategy of student choice is focused on the separate effects of choice and interest on learning, engagement, and attitude. Schraw (2004) conducted a study that included 98 undergraduate students of which 75 were women and 23 were men. Participation was optional but the students who did choose to participate could use the study to meet a research requirement. Participants were randomly assigned to be a part of the choice

group or the no choice group. The participants in the choice group were given a choice between packet A and B. Both packets included the same contents of which a two page text, two essay questions, and a multiple-choice test was a part of. The no choice group was given one of the packets and told to complete the work inside.

The study found that "choice, topic interest, and situational interest had no effect on the multiple-choice test of facts and main ideas" (Schraw, 2004, p. 110). The results from the test also showed that students who were given a choice of which packet to work on performed more poorly. Schraw found that providing students with choice without pertinent information to make an informed decision can lead to less engagement and a quality of work that is lower than if the student were not given a choice. "Increased options maybe unattractive because they require judgments that may involve information for making a sound decision that is inaccessible or unavailable...rather than even try, people may disengage, choosing almost arbitrarily to get the process over with" (Schraw, 2004, p. 111).

The study is not transferable to elementary education as it used only college students. The situation analyzed in the study does not relate to an elementary educational instruction as options presented in class are going to have some value and interest attached to them. Schraw noted that giving a choice one time in a low risk environment may not have the same effects as having choice instilled in a program and offered over time with some value attached. Other limiting factors of the study are that the sample size was small; no mention of ethnicities; no record of socioeconomic status of students; and there was no account for students with learning disabilities.

This study is applicable to understanding the use of student choice in the classroom as it suggests that students need to be informed on the ramifications of the choices that they shall make. Some students may find the option of choice in the classroom upsetting as it is contrary to their cultural belief (Schraw, 2004). The aforementioned reasons emphasize the importance of teachers understanding their student's needs.

The final study of this review explores the effects of student choice on Chinese and Canadian students' academic effort and interest. D'Ailly (2004) examined the differences reactions Chinese and Canadian students experienced when presented with the option of student choice. The participants in the study included 130 Canadian students of which 47 were boys, 82 were girls, and one student didn't delineate their gender. The study also included 153 students from Taiwan, of which 84 were boys, 68 were girls, and one student didn't delineate their gender. The study measured students effort, interest, and learning outcome through a computer program. The program was option based, and parts of the exam were voluntarily completed. The results of the study indicated that the level of interest and amount of effort were not affected by the option of choice.

The factors of this study that make it not generalizable are that it included only students from Canada and Taiwan. Most of the testing and instruction was done on a computer which is not beneficial for all students. Other factors that limited the study are that there was no mention of ethnicities, learning disabilities, socioeconomic status and the study was conducted over a short time.

The results from this study are pertinent to elementary teachers looking to

implement student choice in their teaching strategy by taking into account a cultural perspective. The option of choice in the classroom could have a negative effect on students who have different cultural morals surrounding the teacher student relationship (D'Ailly, 2004). Students who are accustomed to the teacher making the decisions may feel disrespected by being given a choice.

The previous studies have many limitations and differences, but the similarities in the studies suggest that there are various ways students prefer to learn (Johnson, 2006; Boa, 2008; Assor, 2002). Providing choice in the classroom can be a way to create autonomy and engagement in the classroom (Leroy, 2007; Shegar, 2010; Boa, 2008). It has been demonstrated that student choice and interest have a strong relationship with one another (Schraw, 2004; Flowerday, 2003). Student choice and interest have demonstrated to be an instructional strategy to use in collaboration with other strategies of making learning preferences accessible to students throughout the classroom curriculum (Shegar, 2010; Boa, 2008; Shillingford, 2008). Student choice has shown to be an inconsistent strategy to produce academic growth (Lutz, 2006).

Discussion

The purpose of this critical review was to gain insight into the research question, "What are effective practices for engaging early elementary students' interests and motivation in ways that will support academic growth?" Through online research using online databases such as ERIC and Questia the practice of providing student choice was examined as a possible educational strategy that could support engagement, motivation, and academic

growth. The research findings demonstrated mixed results as to whether student choice promotes academic growth, student engagement, and motivation (Schillingford, 2008; Johnson, 2006; Shegar, 2010; Flowerday, 2003; Schraw, 2004; Assor, 2002; D'Ailly, 2004; Boa, 2008).

The research findings that supported student choice suggested that providing choice in reading can increase student motivation and comprehension (Shegar, 2010). The findings also suggested that providing choice increased students motivation and task performance (Boa, 2008). Johnson (2006) found providing choice in the classroom increase students ability to find access to information presented in lessons. Studies found when student choice was combined with student interest an increase in motivation to complete assigned tasks were demonstrated (Flowerday, 2003).

Research findings that questioned the importance of choice in the curriculum found that academic growth was inconsistent when students were given a choice of classroom assignments (Shraw, 2004; Flowerday, 2003). Schraw (2004) found if students had ,no interest or they did not understand the choices provided, that their attitude, engagement, and performance decreased.

Implications for practice

If student engagement is the goal of the educator then the implications for their practice should attend to the concept that altering instruction to recognize students interest has been linked to creating engagement in the classroom (Johnson, 2006). Strategies that have shown success in creating engagement in the classroom are group collaboration, student choice, and developing positive relationships among the

students in the classroom and the teacher (Farmer, 2009; Boa, 2008; Johnson, 2006; Lutz,2006). A strategy that has demonstrated support for engagement in the classroom is taking time during the class period to give students individual attention (Lutz, 2006). A way to meet an individual student's needs is to provide options in the curriculum such as choice in assignments. A strategy that has demonstrated to engage students using interest and clear instruction is providing student choice in the classroom (Boa, 2008). Studies have also shown that students are more engaged, able to gain a deep understanding of materials presented in the classroom, and to comprehend the link to future learning when they understand the current assignment and objectives (Gabriel, 2007). A way to support student learning is to check with students to make sure that instructions are clear and understood (Shegar, 2010). Studies have shown that student choice has positive influence on early elementary students interest in reading and math (Shegar, 2010; Boa, 2008).

Research suggested that engagement does not consistently predict academic growth in students (Lutz, 2006). In respect to that study one could conclude that student choice isn't always going to promote academic growth (Schraw, 2004; Flowerday, 2003; Assor, 2002). A way to effectively apply this understanding to classroom instruction would be to understand the needs of the students in the class. Gaining insight into student learning preferences and weighing that against students' academic growth could lead the teacher to an instructional strategy that best suits the needs of their students. Meeting the needs of the students may include student choice in the curriculum, but that will all be dependent on the make-up of the students in the classroom. Considerations for whether to

implement choice in the classroom are as follows: The cultural make-up of the classroom as varied cultures have different interpretations of student choice, as different cultures have different perspectives of the teachers role in the classroom (Boa, 2008; Schraw, 2004). Students understanding of the current task will affect the success of choice in the classroom because if students don't understand the task they may not make choices that promote academic growth (Gabriel, 2007; Schraw, 2004; Assor, 2002). Students interest in the current topic being studied in class can also limit the success of student choice, for instance if students find the learning goals irrelevant to their lives they may make a choice just to get the assignment over with (Assor, 2002). It is the job of the educator to "be able to judge what attitudes are conducive to continued growth and what are detrimental...have a sympathetic understanding of individuals as individuals which gives him an idea of what is actually going on in the minds of [students]" (Dewey, 1938, p 39).

Future Research

Flowerday (2003) found that little research has been done on student choice in relation to early elementary students. More research focusing on elementary students and how student choice effects their learning and motivation is needed to see consistent results. In conducting this research more studies using observational techniques of student choice in action in the daily classroom curriculum is needed as a majority of these studies were performed using questionnaires or simulated exams. Interviews with educators currently using student choice in their curriculum and their successful strategies could help to further understanding.

References

- Assor, A. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviors predicting students' engagement in schoolwork. *British Journal of Educational Psychology*, 72, 261-278.
- Bao, X., & Lam, S. (2008). Who makes the choice? Rethinking the role of autonomy and relatedness in Chinese children's motivation. *Child Development*, 79(2), 269-283.
- Couvrette, D. (2011). *Divorce magazine*. Retrieved from <http://www.divorcestatistics.org/>
- d'Ailly, H. (2004). The role of choice in children's learning: A distinctive cultural and gender difference in efficacy, interest, and effort. *Canadian Journal of Behavioral Science*, 36, 17-29.
- Dewey, J. (1938). *Experience and education*. New York, NY: Macmillan Publishing Company.
- Flowerday, T., & Schraw, G. (2003). Effect of choice on cognitive and affective engagement. *Journal of Educational Research*, 96(4), 207-15.
- Gabriele, A. J. (2007). The influence of achievement goals on the constructive activity of low achievers during collaborative problem solving. *British Journal of Educational Psychology*, 77(1), 121-141.
- Geis, G. L., & McGill Univ., M. t. (1972). *The Student Choice Movement. Center for Learning and Development*, 1.

- Johnson, L. M. (2006). Elementary school students' learning preferences and the classroom learning environment: Implications for educational practice and policy. *The Journal of Negro Education, 75*(3), 506-518.
- Leroy, N., Bressoux, P., Sarrazin, P., & Trouilloud, D. (2007). Impact of teachers' implicit theories and perceived pressures on the establishment of an autonomy supportive climate. *European Journal of Psychology of Education, 22*(4), 529-545.
- Lowe, K., Lee, L., Schibeci, R., Cummings, R., Phillips, R., & Lake, D. (2010). Learning objects and engagement of students in Australian and New Zealand schools. *British Journal of Educational Technology, 41*(2), 227-241.
- Lutz, S., Guthrie, J., & Davis, M. (2006). Scaffolding for engagement in elementary school reading instruction. *Journal of Educational Research, 100*(1), 3-20.
- Means, B. (2010). Technology and education change: Focus on student learning. *Journal of Research on Technology in Education, 42*(3), 285-307.
- Park, S. (2005). Student engagement and classroom variables in improving mathematics achievement. *Asia Pacific Education Review, 6*(1), 87-97.
- Pugh, K. J., & Bergin, D. A. (2006). Motivational influences on transfer. *Educational Psychologist, 41*(3), 147-160.
- Schraw, G., Flowerday, T., & Stevens, J. (2004). The role of choice and interest in reader engagement. *Journal of Experimental Education, 72*(2), 93-114.
- Shegar, C., & Weninger, C. (2010). Intertextuality in preschoolers' engagement with popular culture: Implications for literacy development. *Language and Education, 24*(5), 431-447.
- Shen, B., Chen, A., & Guan, J. (2007). Using achievement goals and interest to predict learning in physical education. *Journal of Experimental Education, 75*(2), 89-108.
- Shillingford, M., & Edwards, O. W. (2008). Professional school counselors using choice theory to meet the needs of children of prisoners. *Professional School Counseling, 12*(1), 62-65.
- Walter, S. M., Lambie, G. W., & Ngazimbi, E. E. (2008). A choice theory counseling group succeeds with middle school students who displayed disciplinary problems. *Middle School Journal, 40*(2), 4+.
- Yun-peng, M., Chi-chung, L., & Ngai-ying, W. (2006). Chinese primary school mathematics teachers working in a centralized curriculum system: A case study of two primary schools in North-East China. *Compare: A Journal of Comparative Education, 36*(2), 197-212.

Strategies for Success: At-Risk Youth in Heterogeneous Classrooms

Cooperative learning allows for students to engage deeply with the content and in higher order thinking. Cooperative learning environments have shown great success in supporting academic achievement for both high and low achieving students when isolated—yet there remains a struggle to implement positive cooperative learning in heterogeneous classrooms. The focus of my research inquiry was based on a desire to identify reasons at-risk students struggle to be successful in heterogeneous cooperative learning environments, and then identify ways to support them. My research led me to conclude that to the degree a student feels included (or safe) within an academic community, directly influences the degree in which they participate (take academic risks) and therefore succeed in the classroom. From my inquiry I have gathered a number of strategies that I recommend to teachers seeking to implement effective group work that is supportive of at-risk students without the need of their exclusion.

Pedagogical practices are needed to support students who are being pushed to the margins due to extreme academic failure and/or economic, racial, or cultural disenfranchisement. Group work has successfully been used to support student learning, however, many group work activities require students to take academic risks, which result in a number of students to become disengaged from learning. This disengagement puts students at risk. Although the literature defines “at-risk” in a number of ways, I will use it to refer to students with low academic and/or social status who can be marginalized by their school experience. Too often, at-risk students are low-status because they lack the classroom support they need to succeed. The primary focus of my research inquiry is to explore how teachers can foster a classroom environment where group work is properly designed to support socially and academically at-risk students to take academic risks.

My personal experiences working in middle school classrooms, specifically with at-risk students, greatly influenced this

inquiry. Observations of at-risk students suggested to me that by adolescence many students have developed, and often mastered, extreme classroom behaviors to cope with their experiences with academic failure. For some students, academic risk was avoided at all cost. This often made group tasks, class discussions, and other practices of a democratic classroom extremely difficult. As mentioned above, the numbers of at-risk students is increasing and with it is an increasing need to adapt pedagogical practices to effectively support all students to be successful with heterogeneous classrooms. The growing achievement gap must be addressed. Group work and small group tasks can be successful for both social and academic intervention, but must be designed accordingly to meet the needs of a diverse classroom.

The Case for Heterogeneous Grouping

For some educators, the response to the growing achievement gap is homogeneous, rather than heterogeneous classrooms. Tracking has commonly been

used as a way to sort students into categories that are congruent with the status quo. The most common argument claims that heterogeneous classrooms stunt the growth of high achieving students through a softening of academics while struggling students fall victim to social and academic insecurities that inhibit their willingness to take academic risks.

That said, many educators believe that tracking provides unequal opportunities largely due to race, class, gender and/or cultural backgrounds, and works for, not against the achievement gap. Goodlad (1994) explained that,

Even though most schools are structured for purposes of reducing the heterogeneity of student populations with which teachers must deal--through tracking and the separation of 'special' students into segregated groups--the problem experienced by teachers in dealing with individual differences appear to be increasing. (pp. xi)

Goodlad went on to explain that, "...changing student populations...appeared [to be] increasing the number of students at the margins and at-risk" and that "[w]e are running out of organizational and special grouping type of solutions" (pp.xi). The lingering efforts to create a one-size-fits-all classroom design is becoming a more unrealistic vision for public schools, both logistically and philosophically, because it denies an increasingly large number of students access to a truly democratic educational experience.

Challenges to Address

Cohen addressed the complexity of designing group work, describing the social ordering that tends to occur. She explained that a student's status characterization is an

"agreed-upon social ranking where everyone feels it is better to have a high rank within the status order than a low rank" (1994, p.27). At-risk students will almost always also be low status. Cohen classified the status categories as expert status where students are at competent levels with their classmates; academic status which is determined by perceived academic abilities; peer status that is associated with popularity; and societal status which includes characterization based on race, class, gender, disabilities, and other socially structured hierarchies. These classifications can greatly affect a student's participation in group activities. For students to grow as learners tasks must challenge them. Observations suggest that at-risk and low-status students take significantly fewer academic risks than their high status peers.

As mentioned above, group work has successfully been used to support student learning, yet it remains difficult to implement in classrooms serving students at wide ranges of academic and social skills. According to Elizabeth Cohen, "[s]mall groups are not a panacea for all instructional problems" (1994, pp.1), and I do not dare to suggest group work alone can overcome the achievement gap. Instead, as Cohen explained, group work is a "tool, useful for specific kinds of teaching goals and especially relevant for classrooms with a wide mix of academic and English language skills" (pp.1). There is a wealth of research on the effects of group work in the classroom. However, the focus of this inquiry is not to ask why instructors should or should not use group work in the classroom, but what specific ways teachers can attend to the needs of students in heterogeneous classrooms in their application of group work.

Lynn Gelzheiser (1997) examined practices of 52 teachers in heterogeneous classrooms. All classrooms were inclusive

of students with disabilities. The research aimed to identify trends in grouping strategies, teacher expectations, and modifications. Gelzheiser explored multiple practices that aimed at inclusion of students with special needs. Although she said, “a skilled teacher should use a variety of integration practices,” in this particular inquiry I am only interested in data gathered about small-groups and modifications (pp. 208).

The study observed the practices of various teachers at K–12 levels and targeted students identified as learning disabled. The types of disabilities ranged but would almost always be met with a low-status ranking in a heterogeneous classroom. The data was based on teacher narratives and paired observations. The researchers distinguished between four kinds of small group instructional strategies: small-group ensemble activities, small-group discussion, small-group stations, and small-group parallel independent practice (Gelzheiser, 1997, pp. 215). Each of the practices required different levels of collaboration. The first, asking for a singular group product, required the most collaboration while the last, allowing for students to work together but produce different end products, required the least.

The research data collected from the observations and narrative records showed that “students with disabilities experienced more large-group instruction in content area classes than in special area classes” and that “only content area teachers were seen using small-group discussion” (Gelzheiser, 1997, pp. 219). This suggests that the observed teachers were not consistently using grouping strategies regardless of “recommendations that general education classes need to provide more small-group instruction for students with disabilities” (pp. 222). Since the teachers that were said to be using small-group grouping strategies

to meet the needs of students tend to be special area, rather than content, struggling students are often excluded because of double dipping (attending core classes such as math and/or English twice a day) and support classes that fill their elective slots.

The research data on grouping also indicated “striking differences in the ways that teachers at different levels [not just from different content areas] used small-group instruction” (Gelzheiser, 1997, pp. 221). Gelzheiser reported that elementary teachers “only used small-group stations and small-group parallel practices” requiring a minimum of collaboration; in contrast to “when secondary teachers used small-group instruction, they relied almost exclusively on the collaborative small-group ensemble” (pp. 221). From the data on modifications, Gelzheiser concluded that “extra help was commonly reported at the elementary and middle-school levels, but never reported by high-school teachers” (pp. 222).

Based on the findings of Gelzheiser, I conclude that as students progress in grade level, the group work they experience demands higher amounts of collaboration with fewer modifications to support struggling students. As we examine the implications of a shift in academic expectations as students advance, it is important to consider the idea that at-risk students become masters at evading academic risks in order to hide their areas of struggle. Coinciding with adolescence, it can be assumed that as students are experiencing a shift in academic expectations, they are also experiencing a shift in social awareness. With a heightened sense of social pressures comes a heightened self-awareness that can be either greatly supportive or detrimental to a student’s academic progression. To better understand the complexity of self-esteem and self-perception on motivation and participation in group work, I will now more closely

consider how student motivation changes as they transition through grade school.

Motivation and Self-Perception Transitions

Based in research suggesting that the “transition to middle level schools is associated with a decline in motivation and performance,” Anderman & Migdley (1997) rejected the assumption that “these declines are related to physiological and psychological changes associated with puberty [so] inevitable” (pp. 269). They believed this to be a far too limited conclusion and sought to make an examination of student motivation and its correlation to their learning environment. The goal orientation theory, which focuses on “how students think—how they think about themselves, their tasks, and their performance” was used in order to examine how motivation changes as students transition into higher level grades (pp. 270). The goal orientation theory differentiates between task goal orientation, which emphasizes on a sincere engagement with academic work, and the intention of reaching mastery and/or developing and improving understanding. Performance goal orientation emphasizes a student’s ability to demonstrate understanding and/or defend or protect their status (pp. 270).

Anderman & Midgley (1997) explained that an “examination of policy and practices in elementary and middle level classrooms suggest that middle school classrooms emphasize performance goals more, and task goals less than do elementary classrooms” and vice versa (pp. 271). This observation directly relates to the previous discussion of students experiencing a shift in learning environments from elementary to middle level grades that asks them to interact with learning in a different way — which can often lead to students disengagement.

Three hundred and forty-one students from a “working class community” were surveyed in fifth then again in sixth grade (Anderman & Midgley, 1997, pp. 268). The surveys assessed students’ perceptions of “personal task and personal goal structure in the classroom, and perceived academic competence” (pp. 277). Although this study examined the effects of transition on motivation in both gender and ability level based subgroups, I will focus on the results of the latter group. The ability groups were formed into high and low using the Cognitive Test of Basic Skills (CTBS). Anderman & Midgley (1997) highlighted that “an orientation to task goals is related to positive patterns of learning, regardless of how able students perceive themselves to be...however an orientation to performance goals may be particularly detrimental to students with lower actual perceived ability” (pp. 274). They went on to suggest that this often leads to “maladaptive pattern of motivation” that puts students further at-risk.

Consistent with previous research, Anderman & Midgley (1997) concluded that “the sample of working class, early adolescents in this study perceived that their classroom stressed relative ability more and mastery and improvement less, after they moved to middle school” (pp. 291). However, the study also concluded that after students transitioned into middle school they practiced far fewer personal task goals and showed a “dramatic decline in perceived ability” (pp. 291). Anderman & Midgley’s (1997) findings suggest that “high ability students appear to be particularly vulnerable to decline in perceptions of academic competence across the transitions” (pp. 291). From this I assume that for many students, ability is not what is hindering a positive transition into middle school—and in fact, there are much more dominant factors contributing to a coinciding

transition into an at-risk classification and/or low-status ranking.

Anderman & Midgley's (1997) data showed that as a student's self perceptions of academic competence decreased, so did their grades. Rejecting the suggestion that the academic demand from elementary school to middle school is just more difficult, Anderman & Midgley used their findings to conclude that "it is possible to navigate experience during the transition from elementary to middle school that are precursors to future decrements in academic performance at the high school level" (p.292). Anderman & Midgley's research gave insight into how students' self-perception, motivation, and participation can be influenced by a shift in classroom environment and academic expectations as they transition into higher grades. These insights will now lead my inquiry towards an exploration of how different classroom structures (and specifically cooperative learning environments) influence students self-perception and individual relationships with learning, and therefore academic success

Participation

Cindy Geer (1993) looked at students engaged in varying levels of cooperative learning environments in order to examine how student's perceptions of the learning environments affected their self-perceptions of academic ability. Taken from two middle schools, participants in the study included 1,185 7th, 8th, and 9th grade students, along with fifteen teachers. Data was retrieved from observations, teacher interviews and reports, along with a student pre-test. The participants were separated into three subgroups - high cooperative learning, average cooperative learning, and no cooperative learning. Groups were heterogeneous in terms of race and gender, but were homogeneous in regards to ability

level (pp. 16). The intention was to measure the impact of "different types of cooperative learning environments on low, average, and high ability students' perceptions" (pp. 3) of the classroom environment.

One component of Geer's research was to examine how "perceptions of different ability students' perceptions of the classroom" varied in correlation with the level of cooperative work (1993, pp. 5). She explained that an educators understanding of how different cooperative learning environments "influences the perceptions of different ability level students will provide valuable information which educators can use to better address the needs for [their] students" (pp. 5). Geer highlighted that "cooperative attitudes are positively correlated with a high regard for intrinsic motivation, open expression of ideas and feelings, and high self esteem" where "individualistic attitudes are negatively related to open expression and self esteem" (pp. 5). She went on to note "students are very aware of how their own academic ability compares to their classmates" which will "exert an influence over their social relations and attitudes towards school" and their performance in the class (pp. 9).

Based on the collected data, Geer observed that "the no cooperation learning environment groups view their classrooms as more competitive than the average cooperative environments, and the average cooperation environments perceived themselves as less competitive than the high cooperative environment cohorts" (2003, pp. 18). The data also showed that "there was no interaction effects between the factors of environmental type and ability level" (pp. 21-2). What this may suggest is that students' ability is not the primary influence for success in the classroom, but may be outweighed by perceptions of ability, status, and validity of class structure for learning.

Geer concluded that an instructor can “alter” a classroom environment to “improve motivation, attitudes towards a subject, and achievement” (1993, pp. 5). She insisted that “educators must take notice of [how] the classroom environment influence[s]” student achievement (pp.5). There appears to be a correlation between the perceptions of no cooperative learning environments and performance goal orientation — which both advocate a more individualistic approach to learning that is consistent with established status structures. The cooperative learning environments are more consistent with task goal orientation which aims to experience the process of learning, rather than demonstrate or prove it. As previously noted, when students transition out of elementary into higher grade levels, there tends to be a greater emphasis put on performance goal orientation, and with that emphasis comes value. That value may be effecting students’ perception of ability, regardless of actually ability — dictating that student's relationship to learning, therefore success.

Gelzheiser offers a correlation with the small group instructional strategies presented above. The tasks that require the most collaboration, yet pose the greatest risk for students to disengage, ask for students to collaboratively learn together. Again, the low collaboration tasks tend to be tied to performance-based, or performance goal, demonstration of learning. To better understand how shifts in learning environments affect student performance, I will now examine how at-risk students are performing in both inclusive and alternative learning environments.

The Learning Environment: At-Risk Youth in Inclusive Learning Environments

A study conducted by Pijl, Frostad, and Flem examined how students with

special needs are often met with low-status rankings in the classroom, often resulting in negative or limited educational experiences. Pijl, et al. defined “special needs” as students with “various (combinations of) impairments and/or difficulties in participating in education” and explained that “compared with their peers, pupils with special needs are over-represented in at-risk categories by a factor of two to three” (2008, pp. 387, 389). Pijl, et al. looked at the effects of social positions of students with special needs in classrooms. The social positions were based on popularity, friendships, and participation in subgroups. The sample consisted of 13 seventh-grade and 14 fourth-grade classes from 15 schools. All schools practiced full inclusion policies. In total, 498 seventh-graders and 491 fourth-graders participated (pp. 390). The students with special needs were identified by their teachers and made up 8.0% of the total sample, which included students with behavior problems, learning problems, communication problems, and seven students with sensorial disabilities and/or motor impairments (pp. 391, 394).

Pijl, et al. based their analysis on data gathered using “sociometric techniques based on peer nomination” (2008, pp. 391). The researchers asked students to “nominate their best friends, the peers with whom they liked to perform a school task and the peers with whom they liked to share school breaks” (pp. 392). The data collected was used first to identify trends that would give insight about how perceived popularity versus actual friendship affects a student’s preference in work partner. Second, the data was used to measure the “social inclusion of pupils with special needs” (pp. 393). Finally, the data was used by the researchers to compare “the three indexes for social inclusion” and “question which of the indexes for social inclusion seemed most

valid and to what extent social inclusion had been achieved” (pp. 393).

Pijl, et al. concluded that “students without special needs are on average more accepted by their peers in class” (pp. 395). Along with identifying students with special needs as at high risk of exclusion due to low popularity, they concluded that “about 8-12% of pupils without special needs are [also] at risk of being excluded” for the same reason (pp. 395). The researchers also found that in fourth and seventh grade, the “average number of friendships in the group without special needs was significantly higher” (pp. 396). Including data on group membership, the researchers concluded that high percentages of students with special needs, as well as some low-status students without special needs, experience social isolation that directly affects their group participation. The data also suggested that this risk increased significantly from fourth to seventh grade, consistent with previously referenced research that showed similar results.

Pijl, et al. (2008) suggested that positive peer relationships are necessary for truly cooperative environments, so should be supported by the instructor. Their research has led me to conclude that peer relationships directly affect status issues in group activities. When teachers do not directly address these status issues, and foster positive peer relationships necessary for equitable group work, they are not supporting at-risk students in heterogeneous classrooms. As expected, interventions continue to be necessary to support at-risk students to succeed.

At-Risk Youth in Alternative Learning Environments

Interventions for at-risk students are often focused on how to raise motivation and self-esteem, while attending to the effects of social isolation. While these

interventions may have positive and direct effects on achievement, they often result in students being removed from the general classroom and put in alternative, intervention, and/or special education environments. Nichols & Utesch researched how an alternative education program in a large urban district supported at-risk students to succeed. I will use this research to identify insights on strategies for increasing self-esteem and motivation that can be transferred to a heterogeneous classroom.

Nichols & Utesch’s research, conducted in a large Midwest district, looked specifically at the effects of an alternative program developed to support at-risk students who “cannot function in a traditional classroom setting” due to academic and/or behavior problems (1998, pp. 273). The program insisted upon providing an organized structure to “generate and sustain a community within” fostering positive and equitable peer relationships; “make learning an engaging process” which resembles task goal orientation over performance goal orientation; and “suggest[ed] that caring relationships among students and teachers are likened to a family unit” similar to those fostered in lower school classrooms (pp. 272). This organizational structure is common in many alternative programs. The research focused on the program’s effectiveness on improving self-efficacy - “an individual’s personal evaluation or confidence in his or her performance capability on a specific task; goal orientation (previously discussed); and self-esteem, defined for their purposes as “evaluation of our own self-concept or, to be more specific, the value that each of us places on our own abilities and behaviors” (pp. 273).

Participants of the study included 571 students from various cultural and socioeconomic backgrounds ranging from

sixth to eleventh grade. Each participant completed a “Likert-type questionnaire to assess various aspects of students motivation and self-esteem” along with follow-up interviews (Nichols & Utesch, 1998, pp. 274). The researchers measured student “persistence, self-regulation, intrinsic motivation, extrinsic motivation, learning goals, performance goals, home-self esteem, school self-esteem, and peer self esteem” (pp. 274).

Nichols & Utesch concluded that the program was effective in supporting higher academic achievement in at-risk students. They explained that “students who completed the alternative program experienced increases in extrinsic motivation; home, peer and school self-esteem; and persistence toward the learning task” (1998, pp. 276). An assessment of anecdotal student comments suggested that “participants who completed the program believed they could be academically and behaviorally successful upon their return to the regular classroom environment” (pp. 276).

A previous discussion of transition makes me skeptical of this conclusion. While there is much to be gained from the insights on how the organizational structure of alternative programs fosters a supportive learning environment, using these strategies in isolation of the general classroom, rather than within it, will not necessarily support students to be successful outside of that environment. This could result in similar negative transition patterns seen in movement from lower to middle school. These conclusions lead my inquiry to now explore not only classroom environment, but also how task structure affects at-risk students’ success in the classroom.

Task Structure: Structurally Attending to Status: Academically At-Risk

Julie Tammivaara (1982) used status characterization (outlined above) and expectation states (addressing the self-fulfilling prophecy of low-status students) in order to examine how students performance is effected by perceptions of competence of themselves and their peers. Tammivaara noted that: “Students spend more time in closer proximity to others in classrooms than in any other setting. Thus, while they are learning to act alone, they also must learn to do it in the unbroken presence of others” (pp. 212). This speaks to the nature of an emphasis on individualistic learning within cooperative learning structures that many students struggle to navigate, especially as they advance in grade level.

Tammivaara’s research was “designed to explore the development and possible contravention of generalized labels of academic competence” as a means to alter the learning environment along with the academic experience for low status students (1982, pp. 214). The study questioned whether or not “the possibility of interrupting the effects of generalized expectations through altering task structures...would lead the way toward developing multi-faceted conceptions of academic competence and widen the number of recipients of scarce educational resources” (pp. 215).

Task structure was examined within two conditions differentiated by reading ability. The sample consisted of 144, white, middle-class, males between the ages of 10 and 12. The homogeneity of this sample brings attention to the fact that at-risk labeling is present in all learning environments, although magnified in heterogeneous classrooms. The participants were divided into control and experimental groups, and then divided into 18 groups of four, each consisting of two students with low reading ability and two with high ability. Reading ability played no part in the

task; however that was hardly addressed in the experimental condition. Students were made aware of their status. "In the control condition the task [was] presented as a single ability endeavor that is not specifically disassociated from reading ability" where in the experimental condition, the "task characteristics are more specifically described as implying multiple or incompatible skills unrelated to reading ability" (Tammivaara, 1982, pp. 215).

Both conditions were observed interacting in both experimental and criterion tasks. The experimental task asks students to participate as a team, asks for discussion and cooperation, "requires the group to imagine" and eventually requires consensus (Tammivaara, 1982, pp. 216). Asking for a "group solution" and valuing the process which students collectively take to the solution, this task structure resembles task goal orientation. The researchers differentiated the experimental condition in two ways: "First they disassociated reading ability from the task...[and} secondly, the task was [explicitly] defined in terms of multiple skills" (pp. 216). The criterion task aimed to measure status by examining the student behavior when making "consensual decisions" (pp. 217). Data was collected using questionnaires, taped observations, and a post-meeting questionnaire.

Tammivaara concluded that "the difference between high and low status subjects [were] greatest in the control groups" (1982, pp.218). She noted that "activity and status [were] closely related in the control groups" which directly hindered low-status students participation. However, the data did show that "participation by low status subjects in the experimental groups [was] significantly higher than the control groups" (pp. 219). From these finding I can conclude that when students are aware of their status classification, regardless of relevance to the task at hand, low-status

students will withdraw from group activities where they feel less competent than their peers. The data also shows that with proper task design, and intentional interventions to status issues, students' participation can greatly increase.

Structurally Attending to Status: Socially At-Risk

Madrid, Canas, & Ortega-Medina (2007) looked at the achievement gap between Hispanic and White non-Hispanic children and aimed to examine the effectiveness of different task structures on Hispanic Spanish/English bilingual children. Their sample of 10 girls and six boys had all been identified as "at-risk on the basis of a history of poor academic performance" (pp. 155). All of the participants were bilingual, proficient in English, and from low-income families. Grounding their study on previous research that suggested that Hispanic bilingual students prefer cooperative learning environments, they suggested that because in the United States, "children seldom have the opportunity to interact as part of a cooperative group in their classroom" Hispanic students are at lower level of achievement (pp. 159).

To test this theory, the researchers examined the affects of three instructional strategies: competitive team peer tutoring, cooperative team peer tutoring, and standard teacher-led instruction. Each instructional strategy served as a condition that students would receive for 1 week, alternating through the three conditions for 15 weeks. Data was collected by administering weekly spelling tests and comparing correct answers on pre and post tests, given at the beginning and end of each condition. The competitive team tutoring and the cooperative team peer tutoring both had students working in pairs alternating the role of tutor and tutee in order to learn and practice new vocabulary. The conditions were differentiated in the structure of the task. The competitive team

tutoring asked students to work collaboratively, but in competition with one another--emphasizing the task goal orientation. In the cooperative team peer tutoring condition, the task was explicitly named as a "game to learn as many new words as you can" and aimed at gaining points for the whole team or class. The standard teacher-led instruction had students working in isolation from their peers and relied solely on the teacher for support.

The data showed that under the teacher led instruction the Hispanic students showed little improvement. Both the competitive and cooperative peer tutoring structures showed significant increases in correct responses from pre to post test. However, the cooperative show the most gain (Madrid et al., 2007, pp.158). These findings are consistent with the researchers' hypothesis and lead me to conclude that the achievement gap between at-risk students and their peers is influenced by a student's experiences of and preferences for task structure and goal orientation.

Instructor Role: Mediating Groupwork

When designing group work it is important to consider the role of the instructor. Mediated Learning Experiences (MLE) are structured tasks which focus on "building trust, effective communication and pro-social behavior" (pp. 226). Addressing the role of the instructor in cooperative learning environments, White & Dinos (2010) gathered research from two groups of seventh grade students to investigate the effectiveness of MLE in improving communication in cooperative groups. The researchers randomly selected two groups of 22 students from a "large (n > 1,500) multicultural suburban secondary school" (White & Dinos, 2010, pp. 231). Both groups had equal numbers of boys and girls. Because the researchers sought to investigate the affects of teaching

cooperative skills, "prior to the study the students had never participated in activity/adventure-based cooperative learning, nor had they participated in any trust-building or team teaching activities" (pp. 231).

Data was gathered through observation of an activity-based problem solving activity performed by both the control and experimental groups. The activity asked for high amount of collaboration and discussion for the group to be collectively successful. There were no individual goals, only the collective one which required participation of all members. The activity was not a competition. The researchers documented the amount of on and off task behavior throughout the activity, in each of the groups. This served as the pre-test.

In following days, the experimental groups were then given three one-hour MLE. These sessions involved "trust activities, effective communication, and group-cohesion exercises" (White & Dinos, 2010, pp. 231). Each of the activities were scaffolded, "delivered in a step-by-step approach" and aimed to first build one-to-one trust relationships that developed into whole-group trust relationships. The activities also presented students with strategies on how to address and resolve conflict within groups through effective communication. Both groups participated in the post-test activity which involved "non-mediated peer cooperative problem-solving task sessions" (pp. 232). The groups were given basic instructions to complete the task, but "provided no further assistance" (pp. 232). Data of on and off task behavior was again gathered.

Results of White & Dinos' research showed that the experimental group--after given the MLE treatment--"showed a statistically significant increase of on-task interaction from pre- to post-test interactions" (2010, pp. 233). The control

group remained nearly exactly the same. White & Dinos concluded that MLEs structured to develop trust, effective communication, and group cohesion increase on-task communication during peer-cooperative problem-solving exercises” (pp. 233). The findings of this study have led me to conclude that with a strong task structure that is authentically cooperative, paired with explicitly taught collaborative skills, students can greatly improve collectively. The building of trust supports struggling students to feel safe to take the academic risk of participating--and scaffolded instruction allows for those students to maintain their place as part of the academic team. This was greatly due to explicitly teaching communication skills for collaboration. The following study will further explore strategies on how to equip students with communication skills to support collaborative learning.

Scaffolding Communication Skills

Gillies & Khan (2008) gathered data from 51 fifth and sixth grade teachers and Eight hundred and eighty-eight of their students that provides insight on how “the language that teachers use to challenge students’ thinking” and the degree that they explicitly teach and scaffold discussion skills, affects the learners participation and success in group activities. The study separated the sample into three condition groupings. All teachers participated in workshops. In the workshops for two of the conditions they discussed how to promote discussion, dialogue strategies, how to improve participation, how to embed and structure group work in their classrooms and other strategies for structuring cooperative learning (pp. 328). The third condition only focused on strategies to support small groups. Data was gathered from observation of teachers’ verbal behaviors, students’ verbal behaviors; and students’ reasoning

and problem-solving measures during reasoning and problem-solving group tasks. Also recorded was teachers’ implementation of strategies gained from their workshop conditions.

Gillies & Khan (2008) research concluded that “when teachers are taught specific communication skills designed to challenge students’ metacognitive thinking during cooperative learning, they use more mediating behaviors to challenge and scaffold students’ learning,” which from the previous study we know has powerful results in improving cooperation among groups (pp. 329). From this study’s findings I can conclude that effective group work can be further supported through the explicit teaching of communication skills, and when students are presented with content worthy of group exploration. I will now go on to further identify strategies which will improve the effectiveness of group work.

Improving Groupwork

Christie, Tolmie, Thurston, Howe, & Topping (2009) conducted a research study which observed 24 school teachers who were attempting to improve their use of collaborative group work. The researchers examined peer relationship, communications skills, and how students were transferring cooperative skills into less structured contexts, in order to examine how to improve the effectiveness of group work. Christia et al., asked in their research “whether, and in what respects, the quality of observed collaborative group work is improved” when teachers were trained to “introduce more activities affording opportunities for peer interaction;” along with how teachers are supporting collaborative dialogue in the classroom (pp. 141).

The sample consisted of 24 classes randomly selected from 221 primary schools in Scotland (Christia et al., 2009, pp. 144).

All participants attended three-day training that focused on “potential benefits of group work and effective strategies for introducing classroom activities designed to enhance children’s social skills and communication skills” (pp. 144). Teachers were asked to evaluate how effective they found the training upon leaving. Observations were then gathered from “pupil dialogue taking place during both conventional class lessons and collaborative group work sessions” to see if and how teachers were using their training to support a cooperative learning environment (pp. 144). All 24 of the teacher’s classrooms were observed three times over a single year (Christiea et al., 2009).

Based on the collected data, Christiea et al., (2009) concluded that in classrooms where teachers implemented the strategy interventions for improving group work there was “significant improvement over the time course of the intervention [that] were particularly evident in the quality of observed dialogue in the form of children exchanging proposition, explanations, and instructions with peers during group work activities” (pp. 153). From this I can conclude that when teachers are equipped with strategies to structure both the task and the teaching of collaborative work skills, the learning environment shifts in ways that supports successful students’ collaboration and engagement.

Conclusions

Cooperative learning allows for students to engage deeply with the content and in higher order thinking. Cooperative tasks learning environments have shown great success in supporting academic achievement for both high and low achieving students when isolated—yet there remains a struggle to implement positive cooperative learning in heterogeneous classrooms. My research has led me to

conclude that academic ability is not the primary influence on the success of at-risk students in heterogeneous classrooms. Much more dominant factors influencing at-risk students’ achievement are: student’s self perception of ability (based on status); the structuring of the learning environment--specifically how knowledge is valued in that environment; the structuring of group tasks, and how instructors support students with necessary collaborative tools. In order to attend to these factors, instructional methods for group work are crucial.

My research led to insights about how transitions from lower to higher level grades can have positive or negative effects on students’ success. In lower school, the learning environment is often highly collaborative, nurturing and resembles that of a family unit. The security that results from this structure creates a literal and emotionally safe place for students to take academic risks more freely. Many of the intervention programs for severely at-risk students allow for similar structures. The “safety net” that is created through fostering a loving learning environment often deteriorates as students transition into middle and high school—their “family unit” or academic unit being broken up along with their day and their classes. Students are increasingly at-risk because they lack the social and academic tools to take the necessary risks for group work.

The focus of my research inquiry was based on a desire to identify reasons at-risk students struggle to be successful in heterogeneous cooperative learning environments. From that inquiry I have gathered a number of strategies that I recommend to teachers seeking to implement effective group work that is supportive of at-risk students without the need of their exclusion.

Recommendations

Teachers need to attend to the affects of self-perception and self-esteem on motivation and participation levels in group activities.

I recommend that teachers attend to declines in participation in group activities as students transition from lower to middle level classes and/out of alternative or learning programs into regular classrooms by being critically aware of how they value the learning process. I recommend that teachers avoid individualistic and/or competitive approaches to learning content in group settings. My findings have led me to believe this has adverse affects on student learning. When group work is used, I recommend that teachers explicitly structure tasks to value multiple abilities, and be task-rather than goal oriented.

Teachers need to recognize the academic benefits of fostering learning environments which support positive relationships between students.

Fostering a collaborative learning environment (even when working on independent tasks) in order to support at-risk students to feel safe and valued in the classroom is critical. My second recommendation is that teachers support positive peer relationships and create caring learning environments by building trust relationships within the classroom.

Teachers need to be aware of how the structure of their task reinforces or discredits status in group activities.

Students, especially as they transition into higher grade levels, become increasingly aware of the status structures that erupt within classes and in small groups. Whether or not the status has been labeled formally (the case for many at-risk

students), students' awareness of status classifications directly contributes to their participation in group activities. I recommend that teachers frequently structure tasks to value multiple abilities, are cooperative rather than competitive and are task- rather than goal oriented.

Teachers at both the elementary and higher level grades must attend to the needs of at-risk students in cooperative learning environments, by supporting the entire class with tools to work collaboratively.

I recommend that before teachers delegate authority to students to work collaboratively in small groups, they need to properly support students with communication skills that support them to work collaboratively. Because language plays such a dominate role in students ability to participate, I recommend that teacher scaffold mediated experiences where students can develop skills that support them to communicate, and cooperate equitably. I also recommend that teachers continue to equip themselves with strategies for supporting group work, and continually teach and re-teach the needed skills in order to maintain effective collaboration.

Further Research

From my inquiry I have gathered numerous insights on how to support at-risk students in heterogeneous classrooms. Among other things, not addressed in this inquiry was how group work in heterogeneous classrooms--especially when they are task, rather than performance based--can equitably be assessed. Also not addressed was how to properly differentiate instruction for students. This inquiry would benefit from further research in these areas.

References

- Anderman, E. M., & Midgley, C. (1997). Changes in goal orientations, perceived academic competence, and grades across the transition to middle-level schools. *Contemporary Educational Psychology*, 22, 269-298.
- Cohen, E. G. (1994). *Designing group work: strategies for the heterogeneous classroom*. New York, NY: Teachers College Press.
- Christie, D., Tolmie, A., Thurston, A., Howe, C., & Topping, K. (2009). Supporting groupwork in Scottish primary classrooms: Improving the quality of collaborative dialogue. *Cambridge Journal of Education*, 39(1), 141-156.
- Geer, C. H. (1993). The effects of cooperative learning on different ability level students' perceptions of the middle school classroom environment. *English Document*, 43, 43.
- Gelzheiser, L. M., Meyers, J., Slesinski, C., Douglas, C., & Lewis, L. (1997). Patterns in general education teachers' integration practices. *Exceptionality*, 7(4), 207-28.
- Gillies, R. M., & Khan, A. (2008). The effects of teacher discourse on students' discourse, problem-solving and reasoning during cooperative learning. *International Journal of Educational Research*, 47(6), 323-340.
- Goodard, J. (1994). *Designing group work: strategies for the heterogeneous classroom*. New York, NY: Teachers College Press.
- Madrid, L. D., Canas, M., & Ortega-Medina, M. (2007). Effects of team competition versus team cooperation in classwide peer tutoring. *Journal of Educational Research*, 100(3), 155-160.
- Nichols, J. D., & Utesch, W. E. (1998). An alternative learning program: Effects on student motivation and self-esteem. *Journal of Educational Research*, 91(5), 272-78.
- Pijl, S. J., Frostad, P., & Flem, A. (2008). The social position of pupils with special needs in regular schools. *Scandinavian Journal of Educational Research*, 52(4), 387-405.
- Tammivaara, J. S. (1982). The effects of task structure on beliefs about competence and participation in small groups. *Sociology of Education*, 55(4), 212-22.
- White, R., & Dinos, S. (2010). Investigating the impact of mediated learning experiences on cooperative peer communication during group initiatives. *Journal of Experiential Education*, 32(3), 226-238.

Effects Of In-Classroom Competition on Student Motivation and Learning

This paper synthesizes and draws conclusions based on the existing research that looks at the effects of in-classroom competition on student motivation and learning. Only empirical studies were synthesized. The studies included research that looked at children ranging from pre-school age to high school age. The research considered motivational factors, student preferences and groupings, physiological factors, cultural factors, and the degree of cooperation that was invoked by competition. The synthesis does not consider the effects of competition related student learning in environments such as physical education class or extracurricular sports, the relationship between age level and competition in the classroom, or any relationship between specific ethnicities and competition in the classroom. The research indicates that group size matters. The conclusion includes suggestions for using group size to vary the effects on in-classroom competition.

Competitive learning games are used widely and commonly in classrooms. They are attractive because of their strong ability to engage students in activities that can work towards learning goals. Games involving peer-related competition toward earning points or winning, when used in classrooms to help reach learning goals can appear to be successful if the students engage in the activity. However, the sole presence of engagement in the game does not guarantee that the desired learning goals have been met because often times the student engagement is more concerned with winning the game rather than reaching a learning goal (Cheung, Lam, Law, & Yim, 2004). Some students may reap benefits from the use of competitive learning games in the classroom whereas other students' ability to learn may be hindered by the use of these games. Public schools exist to provide an equal learning opportunity for all students; therefore, teachers need to be aware of the various ways in how competition in learning games affects everyone in their classroom.

My interest in this question originated when I was a teacher intern, specifically

while observing my mentor teacher use competitive learning games on a regular basis in his sixth grade classroom. I initially found the idea of competitive games in the classroom off-putting, but then I noticed how engaged the students were whenever this teaching technique was used. During the unit that I solo taught I decided to use competitive learning games in the same way my mentor teacher did. I was delighted to meet with the same results of student engagement and I documented a positive impact on student learning during the unit I taught. However, once the unit was over, I was left wondering how the competitive learning games that I used positively and negatively affected the learning process in students.

There are varying professional perspectives on competitive learning games in the classroom. Research on the use of competitive games in the classroom reveals that multiple factors, including gender, learning style, cooperation, stress, adult models, and the level of questioning used, may influence the extent to which these games are successful. The present paper

examines how in-classroom competition, such as that seen in-classroom learning games and activities, affects student learning. In-classroom competition can be defined as learning games that produce a desire to earn points or win a peer-related challenge within the classroom environment. Additionally, this paper will consider how factors such as gender, learning style, cooperation, stress, adult models, and the cognitive demand in the level of questioning used may influence the extent to which competitive activities are an effective tool in the classroom. This is not an empirical study in itself, but it is a review and synthesis of literature including empirical studies. Addressed will be studies showing the results of using competitive learning games in the classroom.

Although this paper provides a comprehensive review of the perspectives, literature, and research on the use of competitive games in the classroom, it is not without limit. First, this paper focuses on competition in the academic classroom, but it will not address the effects of competition related student learning in environments such as physical education class or extracurricular sports. This type of activity is not relevant in the present paper due to the physiological influence that major physical activity can have on aggression, which renders it non-comparable with a classroom situation (Booth, et al., 1992). In addition, while this paper will address multiple factors that may influence how effective competitive learning games in the classroom are, it will not address the relationship between age level and competition related aggression in the classroom. Also, while the paper does consider dynamics of culture, it will not address any relationship between specific ethnicities and competition in the classroom. The purpose of leaving age and ethnicity out of the scope is to generate as wide as possible a picture of the sphere of

influence competition can have on classroom learning.

Literature Review

A potential problem with competition in the classroom is that students are commonly willing to surrender the opportunity to learn if it enhances their chances to win the competition (Cheung, et al., 2004). Cheung, et al. (2004) looked at 52 seventh grade students in Hong Kong. They studied the students' interactions with competitive and non-competitive treatments in a typewriting course. They found that, for students involved in competitive learning games, the idea of the competition can have the tendency to trump the concept of learning (Cheung, et al., 2004). Cheung, et al., (2004) stated:

Competition and other extrinsic incentives alike promote the perception that activity is a means to some other end, rather than an end itself. In a competitive environment, attention is focused on the ends of winning and demonstrating high ability rather than on intrinsic enjoyment of the task. As a result, competition is associated with lower interest in the task, especially when the competition is not won. (p. 282)

This study also studied self-evaluations from the students in both treatments and found that in self-evaluations, students often rate themselves lower after failing in a competitive task rather than a non-competitive one (Cheung, et al., 2004).

When faced with losing in competitive learning games, students can develop an entity outlook on their own learning and lose motivation for self-improvement (Cheung, et al., 2004). Cheung, et al., (2004) stated:

If students believe that ability is not something they can change and the outcomes of their study are attributed to ability, they will be less likely to work hard on their study. Once the failure is viewed as indicating low ability, students feel anxious or upset when they come across difficulties or setbacks. (p. 282)

Cheung, et al., (2004) conducted this research on Chinese students in a typewriting course. This fact makes these findings limited in their generalizability for Western students. In addition, while it is stated that the teaching and learning that took place during the course was genuine, the testing environment still differs from that of a permanent classroom and classroom teachers, or further, the context of an entire curriculum unit where students may be more aware of the learning goals and their own performance toward attaining of. However, the results clearly show effects of competition on student learning.

Students' evaluation of their own work can show insight into the motivation behind their performance. Chan and Lam (2008) studied 71 seventh grade students in Hong Kong. The students were observed while engaged in learning how to compose similes and metaphors in Chinese. The students were divided into a competitive treatment and a non-competitive treatment. The aim of this study was to reveal the effects of competition on students' self-efficacy in vicarious learning environments. The results suggested that competition lowered students' levels of self-efficacy. The students in the competitive treatment tended to show a preoccupation with comparing their own work with the work of their peers, and this resulted in more negative self-evaluations than students in the non-competitive treatment (Chan & Lam, 2008). Chan and Lam (2008) conducted this

research on Chinese students in a writing course. Because of this, the research may not be as generalizable when applied to Western students. The results of the study can be useful to look at though, as they show explicit effects of competition on student learning.

When studying the effects of competition as a motivational technique in the classroom, it was found that learning complex tasks requires a large amount of intrinsic motivation (Clifford, 1972). Clifford (1972) looked at 66 fifth grade students in Milwaukee. The students used a vocabulary learning task to examine how classroom competition affects performance, interest, and retention. Students were assigned to one of three conditions: a control group that had no competition or comparison among student scores, a reward group where students were divided into groups based on achievement with the highest scoring member of each group being rewarded with candy each day, and a game group in which students were divided into groups based on achievement, scores were compared daily, and the two highest scoring students in each group received an advantage in a game that was played after each day's vocabulary quiz. It was found that compared to the control group and reward group, the students in the game group were much more interested in the task. Clifford (1972) stated, "The effect of educational competition is likely to be a function of the task and the prevailing motivational forces. Thus, one must contend with the linear relationship between task-difficulty and performance and with curvilinear relationship between motivation and performance" (p. 124).

Student Preferences and Groupings

The outcome of adding a competitive element to a learning goal partly depends on individual differences and learning styles of

students. One such factor is field dependent versus field independent learners. Field dependent learners require a teacher in order to process information, while field independent learners have the ability to learn independently of a teacher. Bolocofsky (1980) looked at 210 tenth grade students in Colorado. Students were tested to determine their cognitive learning style - whether they had a field dependent learning style, a field independent learning style, or a mix of field independent/field dependent learning style. Regardless of learning style, students were then grouped into either a competitive or non-competitive condition and given a reading comprehension test. Students in the competitive condition were told that they would be ranked according to other students' scores in their class, whereas students in the noncompetitive condition were told that their grade would be based on their individual performance. In general, reading comprehension was higher for students in the competitive condition compared to students in the non-competitive condition. However, within the competitive condition, students who were field dependent learners exhibited greater motivation and comprehension compared to field independent learners (Bolocofsky, 1980). Clearly the individual student and their specific learning style are factors that affect the outcome when competition is added to learning games with intentions of it being a motivating factor.

The use of various levels of questioning in classrooms, from asking students to navigate through complex concepts to administering simple recall questions influence the various effects that competition can have on learning (Grossman & Kniep, 1979). Grossman and Kniep (1979) studied 96 fifth grade students in Phoenix. The students participated in a three-week unit on concepts of land-use and change and their achievement on tasks

throughout the unit were evaluated. The students were divided into a competitive learning treatment group and a cooperative learning treatment group. In addition, the methods of questioning students were divided into low-level and high-level. Questions requiring only the skill of recall were considered low-level whereas questions that required students to identify relationships, make applications, provide educated guesses, synthesize ideas, and provide opinion were considered high-level questions. When looking at the effects of high-level questions in competitive and cooperative environments it was found that there were significantly higher levels of achievement in the competitive group than in the cooperative group. There was little difference found between the levels of achievement of the two groups when dealing with low-level questions (Grossman & Kniep, 1979). These results display that a teacher should consider the level of questioning being used when deciding whether to competitive or cooperative element to a learning activity.

Group size and gender are factors that greatly affect how students react to competitive learning games (Benenson, et al., 2002). Benenson, et al. (2002) studied 80 third and fourth graders in Quebec. The students were divided into two treatment groups – one consisting of dyad formations and one consisting of group formations. Stress levels of all the children were studied as they played modified board games. Individuals working within groups tend to show more assertive behavior when faced with the stress of losing, while individuals working in a dyad tend to show more self-deprecating behavior when faced with the stress of losing (Benenson, et al., 2002). Benenson, et al., (2002) stated:

Given that under naturalistic conditions males are more likely than

are females to interact in groups and females are more likely than are males to interact in dyads, group size provides one possible mechanism for the development of sex differences in self-assertive versus self-deprecating behaviors. (p. 1818)

When competition is in the context of a group, it is more common for a child to intentionally seek out and harm another child's chances of winning. While when working within a dyad it is less common for a child to engage in such behavior (Benenson, et al., 2002). Self-assertive versus self-deprecating behavior is influenced greatly by the effect of working within a group or working with a dyad. The understanding of basic behavioral sex differences and their inclination towards group interactions or dyad interactions can be used to guide decisions over the regulations of group versus dyad competition (Benenson, et al., 2002).

Engelhard and Johnson (1991) studied 136 sixth and seventh grade students in Georgia. Students were measured on their learning preference – cooperative, competitive, or individualistic. Gender and academic achievement were measured as individual factors that explained students' learning styles, and then the interactive effects of gender and achievement on explaining learning style were examined. Results suggested that a preference for cooperative learning situations had a direct relation to gender, with the female students showing a preference to work in cooperative learning situations. However, gender did not have a direct relation to a preference for competitive and individualistic learning situations. Engelhard and Johnson (1991) stated:

Although we found the same general trend of girls' preferring cooperation

more than boys and boys' preferring competition more than girls, the achievement and gender effects indicated a different trend. As GPA increased, the trend shifted, with girls' preference for competition increasing and boys' preference for competition decreasing. (p. 391)

Physiological Factors

When looking at testosterone levels in tournament chess players, Booth, et al., (1992) found that testosterone levels rose in competitors in correlation with each level they advanced in the tournament, and that testosterone levels also fell in competitors in correlation with each loss they experienced. It was also shown that testosterone levels rose in competitors while waiting for their game to begin. Chess players were examined because there was a lack of research on testosterone levels in competition that was not of the physical nature, and because the non-physical competition between chess players is similar to social competition. In this sense, this study is generalizable to a classroom environment in which competitive learning games are being used. Booth, et al., (1992) stated:

Put simply, an individual who experiences rising testosterone will become more assertive, will seek competition, and will act dominantly. If he wins, enhancing his status, his testosterone rises again, reinforcing his dominant behavior. On the other hand, a loser's testosterone falls, encouraging him to act submissively and to avoid further competition. (p. 70)

When put into the context of a classroom where competitive learning games are being used, it would appear that

students who suffered losses in the competition would likely withdraw, possibly losing opportunities to achieve the learning goals of the game that have been set by the teacher. Also exposed in this study is the possibility for classroom gender inequality, as this study measured only 16 males. It would have been more helpful if it would have studied female competitors in the same conditions. Knowing that females possess lower levels of testosterone than males, one is left to wonder how the rise and fall of testosterone levels, and their correlation to positive and negative performances in completion will affect females. Further, if females were found to not reach the same levels of aggression as their male competitors, what does that say about environment when males and females are competing together? Males may possess an advantage over females because of their ability to become more aggressive during competition, however, males may be disadvantaged next to females due to their tendency to withdraw when faced with losses in competition. Booth, et al., (1992) stated:

We do not claim that competition for status is determined wholly by hormones, but we believe that hormonal mechanisms are an important component of status processes. No doubt cognitive and emotional factors work in addition, and possibly independent of, the testosterone mechanism. (p. 76)

Cultural Factors

The dynamics between cooperative student collaboration and competitive student collaboration can be subtle, but the different results they produce regarding student success can be significant. In a study comparing students using competitive peer-tutoring, cooperative peer-tutoring, and

traditional a teacher-led procedure, it was found that both the competitive peer-tutoring group and the cooperative peer-tutoring group had a substantially higher level of success in meeting the learning goals, with the cooperative peer-tutoring group achieving the highest scores (Canas, Madrid, & Ortega-Medina, 2007). The goal of this study was to compare the competitive peer-tutoring group and the cooperative peer-tutoring group. The traditional teacher-led group was established as a control group. Students in the cooperative team peer-tutoring condition showed an increase in correct responding when compared to the competitive team peer-tutoring condition (Canas et al., 2007). Because the subjects of this study were Hispanic Spanish/English bilingual children, the authors conclude that their findings are consistent with the theory that one reason Hispanic bilingual children experience lower academic achievement is from exposure to competition in classroom environments (Canas et al., 2007). Canas, et al., (2007) stated, "Hispanic bilingual students are comparatively more socially cooperative than are non-Hispanic White children." Thus, it can be generalized that competitive learning games in the classroom may create an inequality for students who are not part of a mainstream culture that is accustomed to a competitive classroom element.

Gelfand, Hartmann, & Nelson (1969) studied 95 five and six year olds, half of which were male and the other half female. They looked specifically at the children's aggression following competition and exposure to an aggressive adult model. The children were divided into two treatments – one that observed an aggressive adult model and one that observed a nonaggressive adult model. All the children engaged in a competitive activity after the periods of observation were complete. It was found that while both the boys and the girls

increased in imitative aggressive behavior, only the girls increased in non-imitative aggressive behavior as well (Gelfand, et al., 1969). The girls did not respond to competition with aggression though, and Gelfand, et al., (1969) stated:

Since the girls' level of arousal during completion was not independently measured, it is not clear why the girls did not respond to the competition with increased aggression. It is possible that girls do respond as aggressively as boys but to competition in more sex-appropriate activates, such as tests of social skill, tastefulness of dress or appearance, or in artistic and intellectual contests. (p. 1094)

This study, while displaying the effect of cultural differences in the classroom, may not be highly generalizable due to the length of time that has passed since the study was undertaken and the societal changes that have occurred during that time. By today's standards it would be inappropriate to assume the sex-appropriateness of activities in a similar manner as that of the study.

Degree of Cooperation Invoked by Competition

There is literature that suggests the use of competitive learning games in the classroom can enhance learning, cooperation, and motivation in students. Studies have shown that when using a competitive learning game to help students reach a learning goal, students will often perform better than when not in a competitive situation. Devries & Edwards (1973) studied 110 seventh grade students in an urban setting. They specifically looked at the effects of learning games and student teams. In their study, students were randomly assigned to one of four conditions:

instructional mathematical game with team reward, mathematical quiz with team reward, instructional mathematical game with individual reward, and mathematical quiz with individual reward. Achievement was measured by giving students in the quiz groups' percentage scores based on the number of problems solved correctly, or moving students in the instructional game groups to high, medium, or low achievement groups based on task performance. Students in the teams were instructed to help each other during practice periods, but each individual performed alone during the game or quiz period. Rewards were given in the form of newsletters that either ranked teams and individuals according to achievement or ranked individuals according to achievement. Researchers then looked at the effects of group assignment and reward on observed student behavior, student's interactions with one another, and student's reports of their classroom environment. It was found that after receiving feedback, students will focus on helping the low-achieving students in the group to improve (Deveries & Edwards, 1973). These results suggest that team-based competition in learning games can invoke cooperation among students.

Conclusion

While there is substantial evidence for and against the use of competition in learning games, it appears that there will always be some students in the classroom whose opportunity for reaching the determined learning goal will be affected by the presence or lack of competition. This conclusion will address the effects of competition on learning, and the effects of group size on competition.

Effects of Competition on Learning

When competition is involved in the learning process, the motivation of the

student is likely to be an extrinsic one, and the extrinsic motivation to win is often powerful enough to overshadow the potential to reach a learning goal (Cheung, et al., 2004). If a teacher has a desire to create a learning environment that is based on intrinsic learning motivation, he or she should consider the extrinsic motivation that competition elicits in learners.

When the focus in the classroom is on winning, a student who sees themselves as destined to fail will likely give up, therefore completely surrendering the opportunity to achieve a learning goal (Cheung, et al., 2004). In addition, when faced with losing such a competition, students can develop an entity outlook on their own learning and lose motivation for self-improvement (Cheung, et al., 2004). If a teacher wants to promote student self-efficacy and help students look at their learning as incremental, he or she should consider that competition may not facilitate these goals.

Different learning styles respond to in-classroom competition in various ways (Bolocofsky 1980). In order to avoid alienating some members of the learning community, a teacher should consider the individual student and their specific learning style when adding competition to learning games with intentions of it being a motivating factor.

Effects of Group Size on Competition

Students' preference for group size appears to be one of the biggest factors regarding how in-classroom competition affects student motivation and learning. If a teacher is looking to create a learning community within their classroom that fosters mutual respect, they should consider Benenson, et al.'s (2002) findings that group competition situations can create hostility within the classroom, and when competition is in the context of a group, it is more common for a child to intentionally seek out

and harm another child's chances of winning. This is one example that illustrates how in-classroom competition can have a negative effect on classroom community building. However, research has also shown that after receiving feedback, students competing in groups will focus on helping low-achieving students in the group to improve (Deveries & Edwards, 1973). Teachers should consider this if they want to create a classroom environment that uses cooperative learning.

Further Suggestions

While the focus of this paper has not been on cooperative learning, the challenges of in-classroom competition brought forth by the research by the research reviewed in this paper can lead one to the conclusion that cooperative learning may be a more positive alternative to competitive learning. This does not mean that games should be eliminated from the classroom. Rather, Sapon-Shevin (1978) recommended that if a teacher wishes to make learning games cooperative rather than competitive, they consider the following questions:

- Are the students interacting with each other or is there only a process of turn-taking?
- Will there be ample communication between the students, such as the asking of questions to each other and the physical guidance of fellow students?
- If there is not interaction inherent in the game, is it possible for a restructuring of the rules in order to create a necessity for interaction?
- If there is a lot of pressure put upon an individual student, is it possible for a restructuring of the rules in order to create opportunities for fellow students to assist or coach?

- Is it possible for there to be one or possibly more students not fading into the background and not taking part, or could one student or possibly more participate too much and overshadow the chances for others to take part?

The consideration of these questions can help to minimize the factors in learning games that promote extrinsic motivation and low self-efficacy by creating situations for cooperative learning to take place within a game. In addition, the application of these questions can create group interactions that promote equality by removing the ability for students to become dominant or hostile.

A suggestion for further research would be a longitudinal study to observe how in-classroom competition can affect student motivation and learning over a period of several academic years rather than weeks or months. This type of research can help to illustrate the influence of exposure to in-classroom competition on a students' development both academically and socially.

References

- Benenson, J.F., Dolensky, N., Dolenszky, E., Maiese, R., Simpson, A., & Sinclair, N., (2002). Group size regulates self-assertive versus self-deprecating responses to interpersonal competition. *Child Development*, 73(6), 1818-1829.
- Bolocofsky, D.N., (1980). Motivational effects of classroom competition as a function of field dependence. *Journal of Educational Research*, 73(4), 213-217.
- Booth, A., Dabbs Jr., J.M., & Mazur, A., (1992). Testosterone and chess competition. *Social Psychology Quarterly*, 55(1), 70-77.
- Canas, M., Madrid, L.D., & Ortega-Medina, M., (2007). Effects of team competition versus team cooperation in classwide peer tutoring. *Journal of Educational Research*, 100(3), 155-160.
- Chan, J.C.Y., & Lam S., (2008). Effects of competition on students' self-efficacy in vicarious learning. *British Journal of Educational Psychology*, 78, 95-108.
- Cheung, R.W.Y., Lam, S., Law, J.S.F., & Yim, P., (2004). The effects of completion on achievement motivation in Chinese classrooms. *British Journal of Educational Psychology*, 74, 281-296.
- Clifford, M.M., (1972). Effects of competition as a motivational technique in the classroom. *American Educational Research Journal*, 9(1), 123-137.
- Devries, D.L., & Edwards, K.J., (1973). Learning games and student teams: Their effects on classroom process. *American Educational Research Journal*, 10(4), 307-318.
- Engelhard, G., & Johnson, C., (1991). Gender, academic achievement, and preferences for cooperative, competitive, and individualistic learning among African-American adolescents. *The Journal of Psychology*, 126(4), 385-392.
- Gelfand, D.M., Hartmann, D.P., & Nelson, J.D., (1969). Children's aggression following competition and exposure to an aggressive model. *Child Development*, 40(4), 1085-1097.
- Grossman, G., & Kniep, W.M., (1979). The effects of high level questions in competitive and cooperative environments on the achievement of selected social studies concepts. *Journal of Educational Research*, 73(2), 82-85.
- Sapon-Shevin, M., (1978). Cooperative instructional games: Alternatives to the

spelling bee. *The Elementary School Journal*, 79(2), 81-87.

The Gender Achievement Gap: Motivation, Identity, and Culture

A gender achievement gap has emerged in adolescent education, and a question has arisen as to why this gap exists. Females now attain high school diplomas at greater rate than males and earn a majority of all bachelor's degrees and master's degrees in the U.S. The achievement gap results from cultural conditions, not biological gender differences, even as gender achievement discrepancies are seen internationally and across socioeconomic demographics. Across grade levels females spend more hours on homework, are more likely to read for pleasure rather than necessity, and generally have higher academic aspirations than male students. A literature review was conducted to establish causes of academic differences and potential gender-specific solutions. Studies selected were largely quantitative test-derived data analyses, qualitative psychological experiments, and sociological research on secondary students. It was found that a positive grade trajectory is associated with students who received treatments in theories of intelligence which explain ability as malleable and evolutionary. Research also indicates that well before the onset of secondary schooling, motivation and self-perception play an important role in academic success. It is the recommendation of this literature review that further research be conducted in the areas of gendered motivation and self-perception, especially regarding large-scale treatments and applications of incremental theories of cognitive development.

While much research has been done to address an achievement gap between White students and students of color, a gender achievement gap has emerged in the last few decades between male and female students. The National Center for Education Statistics (2010) collected evidence for this gap, shown through data from the National Assessment of Educational Progress (NAEP) and internationally from the Organization of Economic Co-operative Development's (OECD) annual Program for International Student Assessments (PISA). Both the NAEP and PISA reports have documented differentiation in tests scores based on gender, with females outscoring males across several academic categories. Whereas in 1971 more males than females completed high school by a difference of about 3%, females now attain high school completion at a rate similarly higher, and the

percent difference in postsecondary success is even wider. Thus, the question is: why are girls having more general academic success than boys, not only in the United States but in other Western and developing nations? How can this gap be mitigated in public schools?

Several psychological and social factors contribute to differences in academic success between males and female, including motivation and self-perception. The gender gap should be considered under a conceptual framework of attitudes, behaviors, and motivating social forces, as opposed to inherent cognitive or biological differences between adolescent males and females. Thus there are many implications of this achievement gap for teachers. Current trends in proposed policy and instructional changes being implemented have shown some efficacy and that the gap is combatable and appears to be a function

of social, cultural, or economic conditions, even as achievement differences cross the borders of societies, ethnicities, and wealth.

Marks (2008) reviewed OECD data on PISA scores for 172,000 students from several Western and developing nations. Sample students were randomly selected and their reading and mathematics scores were compared. It was found that statistically significant achievement gaps have emerged since the 1970s. Marks noted that nations which have not engaged in policies to promote female academic performance have had less economic growth than those countries which enacted active policies to advance female student achievement. Gender gaps across a host of both developed and emerging national economies indicated that differences in student motivation levels are not isolated in the U.S. and efforts supportive of young women have shifted cultural mores and improved female academic results at the high school, post-secondary, and graduate levels. Societal attitudes towards gender equity have also shifted in countries where female-supportive policies have been put in place. The gender achievement gap, therefore, is by no means a uniquely American problem. The researcher further noted that females now attain successful educational outcomes at higher rates than males across most disciplines, regardless of ethnicity, in spite of socioeconomic status across the Western world. Females are now more likely to go to, graduate from, and attain graduate degrees at colleges and universities. The questions then become: what is making females so much more successful, what accounts for this growing achievement gap, and why are males becoming less and less likely to earn college degrees?

Public schools are meant to serve all students by creating positive learning environments. If the current environments are detrimental for too many male students,

then instructional, pedagogical, and motivational strategies need to truly reflect serving the needs of all students, not just college-bound females. Of the students I worked with as a teacher intern in a high school during the fall of 2010, almost all who had failing or near-failing grades were males, and of all the 19 students who earned suspensions, had substantial classroom behavioral problems, or whose grades continued to drop throughout the semester, 15 were male, representing 75% of the students whose grades declined during my time spent as a teacher intern. Research suggests solutions to get male students to see the value of their schooling experiences and has demonstrated that positive outcomes are possible. This is especially the case for low socioeconomic status and minority students when strategic, motivational, and even metacognitive interventions are implemented by educators. In the absence of any proof that either gender is more intelligent, strategies to offer all students opportunities to demonstrate knowledge must be examined and refined. The remainder of this paper explores issues regarding gender, cultural factors, self-identity, motivation, and effective interventions to explain this relatively recent phenomenon.

Literature Review

The research conducted for this project was gathered in December, 2010, and January, 2011, using the Educational Resources Information Center (ERIC), the digital archive of academic journals JSTOR, and commercial internet searches. The initial search terms used were “gender achievement,” “achievement gap,” and “male motivation.” Media searches were also performed to access publicly released data from major educational organizations to news outlets. Further searches were conducted based on preliminary findings.

Research was divided for the purpose of clarity into external forces, internal, personal factors which affect student academic performance, and demonstrated successful interventions. First, the paper will discuss differences between genders and cultural factors affecting student performance, followed by student self-identity and promising interventions, and lastly a discussion of recommendations and areas for further research.

Gendered Differences

Buckman and DiPrete (2006) compared survey data from the National Education Longitudinal Survey and cumulative General Social Surveys for students born in 1973 and 1974. The analysis of data spanning several decades found that for females who attained successful collegiate outcomes, family background, including parental academic attainment, helped in part to explain female advantages in college completion. Women as of 2004 received 58% of all bachelor's degrees awarded, whereas back in 1960, women only received 35% of all bachelor's degrees. As well, in 2003 women received 59% of all master's degrees. The female achievement gap was found to cross all racial and ethnic groups in the U.S and was found across the English-speaking world and most of Europe. All of this has coincided with declining gender discrimination, such as favoritism among collegiate science or engineering or law departments, and a rising value in postsecondary education for job attainment, such that more females than ever are taking AP and collegiate preparatory classes in high school.

Halpern (2006), in a literature review of gender differentiation research, discussed differences in cognitive and tested areas where males and females tend to excel and where those differences tended to lie. Young

males tended to process spatial information more quickly, whereas females of similar ages worked with verbal cues better and had larger vocabularies. Males exceeded females at targeting tasks, such as shooting basketballs, whereas female students tended to be stronger at recall and showed evidence of larger working memories and better ability to retrieve recent memories. Female students were more likely to focus on task mastery, whereas male students tended to focus more on problem-solving, and have been shown to perform better with some verbal analogy tasks, such as those which may be found in mathematical word problems, and transforming visual information. For example, males consistently outperformed females on the International Geography Bee assessment. These differences are critical for educators designing lessons based around advanced curricula to understand. Cognitive differences, while not necessarily pointing to biological answers, at least suggest that intervention strategies to combat overall achievement gaps need to consider where students tend to excel or fail, according to gender.

Skelton, Francis, and Read (2009) studied the effect of normative gender roles on British high school adolescents by interviewing and observing 71 high-achieving 8th graders in urban and rural districts. Based on student and teacher interviews and classroom observations, the researchers used Foucauldian analysis of transcribed reports and interviews. It was found that female students with support from other community members, whether school-based, friends, or parents, coped with their school roles better than those who saw, for a variety of reasons, success as a stigma. The researchers also found that some female students tended to see being feminine as not aligned with doing well in school, and that appearing good to faculty was more

important than appearing intelligent to peers. Thus, some female students actively sought to diminish their academic successes in order to appear more feminine, more “normal,” and less judged based on their class standing. Schools are social places, and students who succumb to perceived social expectations at the expense of their academic success can face mounting or spiraling problems as they pertain to academic advancement.

Gambell and Hunter (1999) analyzed writing assessments of over 3,000 students at the elementary, middle, and high schools in urban, suburban, and rural areas across Canada. Scores were cross-tabulated with attitudinal and behavioral student questionnaires. It was found that in various reading and writing areas, including organization, using content and vocabulary, and sentence construction, female scores across the board still exceeded male scores. The researchers found that across grade levels females watched less television, spent more hours on homework, were more likely to read for pleasure rather than necessity, were more likely to use public libraries, and generally had higher academic aspirations than male students. In comparing Canadian scores to studies performed by the International Association for the Evaluation of Educational Achievement, the researchers found that scores across 32 Western and developing countries using similar methods to assess elements of literacy and writing were higher for females over several grade levels in 24 of the countries sampled.

Kuhn and Holling (2009) conducted multilevel analyses on 1098 7th to 10th grade German students sampled from 55 schools. Student grades in sciences and languages were aggregated with scoring on reasoning ability and mental speed tests. Using linear regression models, it was found that on tests of reasoning ability and general intelligence, gender differences are statistically

insignificant and negligible. Males tended to have slightly higher grades in math and science, but not higher reasoning or speed test scores. Grades were not found to be strongly correlated with reasoning ability test scores, but strongly related to self-discipline. The researchers noted that previous research suggested female students strategically tended towards mastery rather than performance in school assignments, which could possibly explain in some ways the discrepancies between intelligence test scores and school grades. The researchers also noted that varying tests can only assess certain measures of intelligence and that students construct their relationships to schooling in often disparate ways, making the study of grades or standardized test scores one-dimensional.

Research suggests that females have slight early developmental advantages when it comes to literacy, whereas male literary proficiency may lag in very young students, there is no biological basis for suggesting that females are ultimately better readers than males. Differences in achievement must therefore be considered in their cultural and social contexts, as students develop their own perceptions of who they are as learners over their academic lifetimes. Thus, how student identity emerges, especially in light of challenges minority and low socioeconomic status students may face, must be considered for understanding a multi-faceted achievement gap.

Social and Cultural Factors

Eisele, Zand, and Thomson (2009) examined factors such as gender, school attachment, and self-identity among middle-class African-American youth. Questionnaires regarding personal attributes, school bonding, and self-perception were administered to 174 middle school students. The results were subjected to one-way analyses of variance, and it was found that

African-American female students were more likely to attach their values and self-perceptions to their schools, believed that their schools can help them in further academic successes, and were more involved in the activities of their schools. The researchers found that such attachment by female students to support networks that schools can often provide, especially for students of low socioeconomic status, was a factor in academic success. Students who saw themselves as having close relationships as well as acceptance of their peers were found more likely to show autonomy regarding their schoolwork.

Hinojosa, Robles-Pina, and Edmondson (2009) surveyed a random sample of 352 urban Hispanic students in Texas enrolled in Advanced Placement (AP) courses. Multiple surveys were administered to establish levels of external support AP students sought or had access to. Their findings established a statistically significant correlation between female performance and positive relationships with school staff, their communities, and families. Females were outperforming males in high school curricula, were more motivated to do well in school and continue their educations after high school, and used the resources and networks available to them to aid their academic success. Hispanic female students were found to be more likely to place significant value on their academic success, and more likely to see schools as supportive rather than punitive. Further, the researchers found that female students in AP courses outnumbered males by a factor greater than 2 to 1.

Riegle-Crumb (2009) examined student participation in supplemental school support by quantitatively analyzing data from the Texas Higher Education Opportunity Project, a statewide survey of exiting high school seniors. Collegiate matriculation of 13,803 students was

measured against survey responses to academic orientation and interpersonal relationships by means of multinomial logistic linear regression. The results offered evidence that female students had more academic success across ethnicities in part due to the establishment among females of peer and advocate support networks, which include not only friends but teachers, counselors, and other adults. These networks were beneficial to students in supporting their postsecondary education goals. Female students were also more likely to discuss school and curricular issues with peers, enroll in college preparatory classes, spend more time doing homework, and were less likely to drop out of school or have substantial behavioral issues impeding their academic progress. However, low-income and high-minority schools tended to have the fewest counselors and supplemental resources available to students.

Stinson (2006) performed a literature review of cultural research and examined NAEP data on male African American students. The researcher found that many African-American males who succeeded in school did so by making transitional accommodations within the larger, dominant White culture in the U.S. without acculturating themselves entirely to those cultural pressures. For example, some males were found to change their wardrobes and downplay masculine behaviors in order to alter the perceptions of others and thus discourage perceptions of deficiency or academic inadequacy. The researcher further noted that African-American male students benefitted greatly from lessons which built agency and internal motivation as well as those which incorporated successful African-American role models. Stinson found through interviews that such role models were most likely former students who had done well or professionals in academic or normal professional fields, not

athletes or entertainers. It was found that only 25% of 18 to 24 year-old African-American males was enrolled in college in 2000, indicating a strong need for successful interventions with male students.

Not only do gendered patterns emerge across ethnicities, they are also seen well-beyond the English-speaking world. Lai (2009) analyzed census data and math and science scores among over 7000 Beijing, China middle school students, and explored the differentiation that begins to emerge in middle schools between male ability and achievement. Student middle school exit examination and high school entrance examination scores were compared to census data and demographic surveys. Linear regressions were performed to estimate the emergence of achievement gaps across subjects, and Lai found that female students tested higher on standardized, end-of-year tests and had overall better grades in all subjects. Chinese male students were spending less time studying than females, less likely to believe that their academic efforts could have future value, and more likely to drop out of school, mirroring U.S. studies, despite substantial cultural differences between the two countries. It was found that parental involvement also had a correlation with performance, and that “greater parental support received by girls might be one reason driving the gender gap” (Lai, 2009, p. 394).

That the gap is being noticed internationally may support other research that would explain the gap from a cognitive development perspective. Such research may also bolster research which suggests the global efforts to equalize women in different societies and cultures have greatly aided women, but minimally aided men. However, the research reviewed was largely dependent on test-driven data, thus limiting perspectives of student ability. It remains critical to consider global evidence of the

achievement gap, lest it be perceived as isolated in the U.S. Non-Western evidence further suggests that interventions to combat low male academic attainment could be implemented in a diverse array of classrooms globally.

Self-Identity

Blackwell, Trzesniewski, and Dweck (2007) investigated elements of personal motivations and self-beliefs that can fuel academic successes or failures. In their longitudinal study of interventions with middle school students’ perceptions of the malleability of intelligence, an experimental treatment was done with 7th graders, as middle school is often where gender differences in achievement begin to emerge, and socially middle school or junior high marks a leap forward for adolescent cognitive, biological, and social development. 99 low-achieving New York City students received differing lessons about the malleability of human expertise and intelligence. The researchers examined factors which helped students’ motivations to navigate the more complex social and curricular world of schooling after elementary grades and found positive grade trajectory with students who received lessons in incremental theories of intelligence, as opposed to flat grade trajectory with those students who did not receive the treatment.

Jones and Myhill (2004) conducted an interview study of 144 high and low-achieving British male and female grade and middle school students’ perceived gender identities. Teachers and students were interviewed, class time was observed, and interviews were examined for discursive language. It was found that adolescent females often have difficulty navigating their perceived roles at school, and that those roles were influenced by socioeconomic standing and students’

perceptions of how others saw them. The researchers found that students struggled with how they saw themselves and how others saw them, based on their interpretations of their socioeconomic or class standing. As a teacher intern, I talked to many students who claimed not to know how their families would be considered, class-wise. If they lacked access to resources based on relative poverty, they did not know or visibly show it. Research has shown that students who gain access to the resources available to them often do so because of the influence of their own family's educational experience, background, and socioeconomic standing.

In a historical review of mathematics achievement of the researcher's prior psychological experiments with secondary and postsecondary students, Dweck (2006) found that male and female students respond differently to challenging concepts and new materials that question their prior abilities. Outside of class or gender identification, females were shown to be more vulnerable to losing self-confidence when faced with academic challenges. Males and females addressed math problems in differing conceptual manners, and had gender-specific emotional responses to prompts. Coping strategies for males and females differed, and the researcher found that middle school students who saw their cognitive ability as inelastic or innate did not perform as well as those who saw their abilities as elastic, malleable, or as properties that could develop over time.

Warrington, Younger, and Williams (2000) examined through mean analysis British adolescents' views on peer relations, self-image, and social grouping by conducting a 3-year longitudinal study including focus group interviews and classroom observations. They found that male students were more likely to give up on difficult materials, less likely to use

cooperative strategies to overcome academic obstacles, and more likely to put in efforts to be "invisible" students rather than be perceived as failures. Male students were more likely to dominate teacher attention in classrooms via attention-seeking activities, regardless of achievement status, while female students were more likely to seek instructional assistance for curricular understanding. It was found that males were more likely to dismiss some school subjects outright and focus efforts only on classes they liked, and yet generally showed more confidence than females in their own abilities despite showing less ability to plan for negative academic outcomes.

Rezazadeh and Tavakoli (2009) issued a questionnaire to 65 female and 45 male Iranian undergraduates regarding test anxiety, another factor which can have an impact on performance relates to anxiety and how much importance students place on grades, tests, and other indicators of academic success. Volunteers were sampled across grade level and data was analyzed using mean and chi square tests. It was found that test anxiety can be self-fulfilling, affecting educational success, which also fuels test anxiety. This was especially problematic for females in the study, who more frequently acknowledged that they felt test anxiety. Females were found to feel more pressure to do well in school, not because of potential positive labor outcomes, but because the appearance of competence may be perceived as a more desirable partnership trait. The authors further found that because females typically felt more pressure to succeed in school, they were more at-risk for poor performance due to test anxiety.

Ultimately, it has been demonstrated that self-perception helps form students' approaches both to learning and to schooling. However, much of the examined research was conducted in relatively isolated

settings, thus limiting what can be gleaned from the results. Excessive fear of content can impede academic progress, as can a student's fear of being labeled by peers or instructors, while self-confidence can positively influence school performance. As well, male and female students react differently to certain types of academic assignments as well as social and class-conscious status issues. Students who regard themselves as deficient in some manner thus set up mental obstacles to their own attainment, making the role of internal and external motivation a factor when considering the gender gap.

Motivation

Tinklin (2003) analyzed differential progression rates, differing gendered peer influences, and other social factors influencing student behavior. The researcher collected a random sampling of surveys of over 3000 recent high school graduates and analyzed data using multilevel models. It was found that while social, economic, and cultural background has a significant impact on student academic progress, such factors fail to account for the general and widening gap in achievement based on gender. High school age girls had more agency, motivation, and positive attitudes towards schooling, while males were not succeeding at the same levels across socio-economic status. While the education levels of parents were correlated with student grade outcomes, females had higher grade attainment than males regardless of the work and class backgrounds of their families. Also, both male and female students were found more likely to reach similar postsecondary attainment levels as their parents, and that most students' academic progression equalized by late adolescence. Thus, social and economic advantages were found to be strongly correlated with higher academic outcomes for both genders.

Marinak and Gambrell (2010) examined survey, interview, and post-test results of 288 suburban U.S. third-grade average readers regarding self-concept and literacy abilities in readers at the elementary school level. Using a survey designed to assess reading motivation and self-concept, it was found that male attitudinal shifts downward towards the value of assigned reading and interest in leisure reading was apparent as early as the 4th grade. Females from the age of 9 onward are more likely to read for gratification, to use books as tools to fight boredom rather than force boredom, and to be open to emotional responses to reading powerful or thought-provoking texts. By the 4th grade, some males begin to perceive themselves as poor readers and as unlikely to gain from texts. The researchers further found that the value and purpose placed on the reading texts was more likely to decrease with male students, especially those with average and below-average reading scores, early in life.

Carbonaro and Gamoran (2002) examined achievement inequities in high school students by analyzing data from the National Educational Longitudinal Survey of 1988, a sample of nearly 25,000 students surveyed in the 8th, 10th, and 12th grades. Student and classroom observation data was mean tested, and it was found that while general language skills, including comprehension, analytical, and oral communications were both becoming more important in the U.S. labor market and employers were demanding more analytical thinking, female students outperformed males across literary and analytically-oriented disciplines over time. Those students who were deficient in English skills risked less satisfying labor outcomes and became, as a corollary, less politically aware and active as adults. The researchers' experiments showed that exposure to challenging coursework reduced, for most

students, achievement and attainment gaps brought about by lower socioeconomic status. Thus, if poverty was likely to disempower both genders to some degree along ethnic lines, as minority students are more likely to come from impoverished backgrounds, then homework hours, time spent on analytical readings and writings, and time spent away from modern distractions is all the more critical for socioeconomically disadvantaged students. A White, middle- or upper-class female student might have a statistical head start on academic success, but rigorous coursework, along with consideration of social and cultural pressures, can flatten that advantage for those students most in need of educationally positive outcomes. While some of these studies were limited by the use of year-end test data, their findings corroborate those of other researchers in other fields and using alternate study methods.

Interventions

Clark, Flower, Walton, and Oakley (2008), in a transformative study of pre-selected male adolescents receiving an intensive, extracurricular intervention, described intervention techniques useful in motivating middle school-aged boys. Their intervention was a lengthy set of interdisciplinary activities that were less about core curricula and more about how students plan and act out their daily lives. By consulting with school counselors, the researchers agreed to focus, with male students, on core male strengths, fostering healthy class and school climates, and helping students understand the contexts of both where they excelled and where they struggled. Through the focus on strengths throughout the 12-week intervention, the researchers were able to quantify substantial differences in the students' attitudes towards schooling, graduating, college education,

careers, and management of their social and academic lives. The intervention aided young males in areas where they seemed to most need support: in their self-regulation, planning, and perceptions of their futures. The researchers' focus on student mindset supports other research on student self-efficacy. If developing agency and fostering self-assessment are helpful to students, then those mediations can be implemented with male students productively in broader general education classrooms.

Blackwell, Trzesniewski, and Dweck (2007) found that students in a middle school math class reacted and performed more positively when they came to understand that their intelligence and ability with regard to mathematics was not fixed or static. Students who believed that their cognitive abilities were set did relatively poorly by comparison. They were less likely to spend more time on assignments and more likely to refuse to engage challenging material or concepts, whereas those students prompted to understand that they could improve their performance in mathematics did just that in a statistically relevant manner (p. 258). Further, students who held that their abilities could grow tended to maintain those beliefs about themselves throughout their schooling and in other disciplines. The researchers noted that their case studies were limited by how many students they were able to study and that their experiments were not conducted under ideal laboratory conditions. However, the fact that students could be motivated to improve their efforts based on the psychology of self-belief betrays a need to replicate this type of transformative study in larger, more diverse school settings.

The Educational Alliance (2007) recommended several possible interventions for aiding struggling male students in reading and writing, including teacher training to recognize gendered differences,

later schooling for slowly maturing males, same-sex classrooms, and efforts to connect young males to adult male mentors. Further, the researchers cited suggested more differentiated instruction for males to integrate physical movement and spatial elements, hands-on activities, and using more technology in classrooms. The need for more male teachers was also seen as helpful to male students, especially in the realm of language acquisition skills. It was also recommended that more male elementary and middle school teachers should be recruited to provide mentorship and support to male students who may just beginning to struggle.

Discussion

The gender achievement gap is largely a function of student attitude, and less a result of cultural or biological factors. Some of the academic gap between genders is noticed in findings based on data involving standardized and often mandatory end-of-year tests and voluntary surveys. Such test results are limited in the sense that they are only a snapshot of a student's capabilities. Thus, research relying solely on such data does not necessarily reflect student learning or academic attainment. While the reliance on measureable data from standardized tests and surveys may be construed as a realistic limitation on evaluating every student's achievements, it must be understood that such tests themselves are limited in what they can objectively assess.

However, female students are more likely to outperform their male peers in a variety of content areas, starting from a fairly young age, and the resulting positive academic outcomes are associated with positive adult outcomes. This holds for females regardless of ethnicity or socioeconomic status, whereas low-status minority males are most at risk for negative academic and economic outcomes, despite

the lack of any significant biological differences between genders regarding cognition. Another limitation of research on the gender achievement gap is that differences between the genders tend to flatten out and equalize as students reach postsecondary school ages. Further, studies reviewed which involved schoolroom interventions used small sample sizes, and those research findings need to be further qualified by larger or more longitudinal studies.

Recommendations

The results of the treatments done on middle school students by Blackwell, Trzesniewski, and Dweck (2007) offer tremendous promise. If students who come to see their own academic capacities as growing, shifting, and capable of change perform better on schoolwork, then teachers should take the time in their classes to ensure that students have a solid understanding that their minds and talents are not fixed. It might be helpful for teachers to periodically ask students to consider where they were earlier in a school year as opposed to where they might currently be oriented, as a way to remind students of their academic growth. The research on motivation and planning pursued by Clark, Flower, Walton, and Oakley (2008) with adolescent males suggests that their treatments regarding agency could be applied in classroom settings. While their program was a weekly after-school treatment, the lessons could be further shortened by teachers in any discipline to aid in all students' perceptions of their futures, how they can plan for anticipated events, and steps they can take to improve their academic outcomes.

Both Jones and Myhill (2004) and Warrington, Younger, and Williams (2000) found gender differences regarding students' relationships to academic and social status.

Their research suggests that teachers need to develop an awareness of the perceived status of students and make efforts to mitigate the effects of negative self-perceptions of students based on their socioeconomic background and dispel misconceptions about gender-based abilities or expectations. Rezazadeh and Tavakoli (2009) demonstrated the effects student anxiety can have on performance, indicating that educators could benefit from establishing learning environments where the stresses associated with challenges can be lessened. While anxiety can be born from a student's desire to succeed, student success should not come at the price of undue external pressure. Exams, tests, finals, or essays can all be fundamental assessment tools for teachers, but students need to understand, based on their teachers' actions, that no singular school event determines their academic futures.

Marinak and Gambrell (2010) found that students developed an early self-perception of their reading abilities, which tend to magnify, especially for less-capable readers, over time. As such, it would appear to be critical for teachers to consistently reinforce in students the idea that their abilities are not fixed, that they can improve, and that their efforts at improvement can lead to greater academic successes. This research indirectly supports the findings of Blackwell, Trzesniewski, and Dweck (2007), in the sense that students' abilities to see their thought processes as evolving and changeable affect, to some degree, their academic performance. It appears that if student self-identity can be addressed in classrooms, then educators' efforts to improve results can be impacted by attention to the misconceptions children and adolescents may bring with them to school.

Further Research

There is an established body of research which defines and accounts for the gender achievement gap in elementary and secondary education. However, there appears to be profoundly less research on successful interventions which mitigate or minimize the achievement gap. Successful intervention in student self-perception appears to be lacking and interventions often only take place with students after they have failed courses, dropped out of school, or entered the criminal justice system. There does not appear to be enough literature to refute the work of Blackwell, Trzesniewski, and Dweck (2007) in broader treatments. Carbonaro and Gamoran (2002) proposed more research be done on the positive academic impacts of homework hours and analytical writing for low-status secondary students. Other researchers noted the need for more strategies to work with male students regarding their own perceptions and understanding of masculinity. Interventions seem critical for student success, as teachers, counselors, and administrators see such interventions regularly regarding behavior and coursework. What does not appear to be obvious to students is that their social identities are capable of evolving, and their opportunities to change are ever-present. Furthermore, gender-based research has largely focused on treatments that have an effect on one gender, but less so on those treatments which equally impact all student motivations and attitudes.

References

- Blackwell, L., Trzesniewski, K.H., & Dweck, C.S. (2007). Implicit theories of intelligence achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*(1), 246-263.

- Buckman, C., & DiPrete, T.A. (2006). The growing female advantage in college completion: The role of family background and academic achievement. *American Sociological Review*, 71(4), 515-541.
- Carbonaro, W.J., & Gamoran, A. (2002). The production of achievement inequality in high school English. *American Educational Research Journal*, 39(4), 801-827.
- Dweck, C.S. (2006). Is math a gift? In S.J. Ceci & W. Williams (Eds.), *Why Aren't More Women in Science? Researchers Debate the Evidence*. Washington, D.C: American Psychological Association.
- Education Alliance, The. (2007). *Gender differences in reading achievement: Policy implications and best practices*. Retrieved from <http://www.educationalliance.org>
- Eisele, H., Zand, D.H., & Thomson, N.R. (2009). The role of sex, self-perception, and school bonding in predicting academic achievement among middle class African American early adolescents. *Adolescence*, 44(176), 773-796.
- Gambell, T. J., & Hunter, D.M. (1999). Rethinking gender differences in literacy. *Canadian Journal of Education*, 24(1), Winter 1999, 1-16.
- Halpern, D.F. (2006). Assessing gender gaps in learning and academic achievement. In P.A. Alexander & P.H. Winne (Eds.), *Handbook of Educational Psychology*, 635-653. Mahwah, N.J.: Erlbaum.
- Hinojosa, R., Robles-Pina, R.A., & Edmondson, S. (2009). Gender differences in placement, support, and participation in early school programs for urban Hispanic students in advanced placement courses. *Advancing Women in Leadership*, 29, 1-11.
- Jones, S., & Myhill, D. (2004). 'Troublesome boys' and 'compliant girls': Gender identity and perceptions of achievement and underachievement. *British Journal of Sociology of Education*, 25(5), 547-561.
- Jones, S., & Myhill, D. (2007). Discourses of difference? Examining gender differences in linguistic characteristics of writing. *Canadian Journal of Education*, 30(2), 456-482.
- Kuhn, J.T., & Holling, H. (2009). Gender, reasoning ability, and scholastic achievement: A multilevel mediation analysis. *Learning and Individual Differences*, 19, 229-233. doi: 10.1016/j.lindif.2008.11.007
- Lai, F. (2009). Are boys left behind? The evolution of the gender achievement gap in Beijing's middle schools. *Economics of Education Review*, 29, 383-399. doi: 10.1016/j.econedurev.2009.07.009
- Marinak, B.A., & Gambrell, L.B. (2010). Reading motivation: exploring the elementary gender gap. *Literacy Research and Instruction*, 49, 129-141. doi: 10.1080/19388070902803795
- Marks, G.N. (2008). Accounting for the gender gaps in student performance in reading and mathematics: evidence from 31 countries. *Oxford Review of Education*, 34(1), 89-109. doi: 10.1080/03054980701565279
- National Center for Education Statistics (2010). Fast Facts. Retrieved from <http://nces.ed.gov/fastfacts/display.asp?id=27>
- Rezazadeh, M., & Tavakoli, M. (2009). Investigating the relationship among test anxiety, gender, academic achievement and years of study: A case of Iranian EFL university

- students. *English Language Teaching*, 2(4), 68-74.
- Riegle-Crumb, C. (2009). More girls go to college: Exploring the social and academic factors behind the female postsecondary advantage among Hispanic and White students. *Research in Higher Education*, 51, 573-593. doi: 10.1007/s11162-010-9169-0
- Skelton, C., Francis, B., & Read, B. (2009). "Brains before 'beauty'?" High achieving girls, school and gender identities. *Educational Studies*, 36(2), 185-194. doi: 10.1080/03055690903162366
- Stinson, D.W. (2006). African American male adolescents, schooling (and mathematics): Deficiency, rejection, and achievement. *Review of Educational Research*, 76(4), 477-506.
- Tinklin, T. (2003). Gender differences and high attainment. *British Educational Research Journal*, 29(3), 307-325. doi 10.1080/0141192031000155971
- Warrington, M., Younger, M., & Williams, J. (2000). Student attitudes, image and the gender gap. *British Educational Research Journal*, 26(3), 393-407.

Kimberly Gregg

Effects of Urban Native American Identity on Native Students in Public Schools

The majority of Native American students in public schools are urban Native Americans, meaning they do not live on their tribe's reservation. Despite this, the majority of research has focused on reservation-based Native American Students. The question examined in this paper addresses what specific challenges arise with urban, non-reservation based Native American Students in the public school setting? Studies were selected that addressed issues related to urban Native American student identity. Studies examined urban Native American students and family members. The literature review examined various factors observed in research studies such as identity, family connections, risk-behaviors, mobility and invisibility. The resulting conclusions are that the factors that can affect urban Native American students are very broad and can vary from location to location. A strong sense of Native American identity and strong family connection had the biggest impact on students. Cultural programs and family involvement within the schools is recommended to positively affect students. Due to a general lack of research on this topic it is clear that much more investigating and research needs to be conducted.

Navigating the many complexities of addressing individual student needs is a challenging process as an educator. Addressing individual student needs is essential, however, in building an equitable and welcoming classroom environment that provides an opportunity for all students to be successful. Students enter the classroom with a diverse range of ethnic, cultural and socioeconomic backgrounds. Throughout the entire United States, Native American students are part of diverse student populations in many schools. These students have very specific cultural and social backgrounds that can affect their overall identity and needs as individual students. It is, therefore, the case that these students' identities need to be better understood by educators in order to best serve them and aid them being successful in school.

Currently there are roughly 561 federally-recognized Native American tribes within the United States. Because

approximately 70% of the total Native American population in the United States is urban, non-reservation-based (House, Stiffman, & Brown, 2006), the following question needs to be addressed to facilitate a better understanding of the needs of many Native American students: What specific challenges arise with urban, non-reservation based Native American Students in the public school setting?

Addressing this topic has been historically problematic due to several factors. The first factor centers on the negative context of public education due to the motives and implementation of the Native American boarding school system that ran from the mid to late-1800s to the 1950s. While this system did not differentiate between reservation based and non-reservation based Native American children, the negative effects were severe and impacted multiple generations with lasting effects still visible today. The process of establishing boarding schools was

part of a larger assimilation process that was enacted by the federal government during the 19th century. It was believed that if reservations were broken up and children were removed from their homes to be educated in government boarding schools, these children could then be assimilated into American culture and ways of life. Under this justification "schooling in European ways was meant to destroy Indian tribal life, rid the U.S. government of its trust and treaty responsibilities, and repay Indians for land taken from them (Reyhner, 2004, p. 4). The effects of the boarding school system included loss of culture, language and overall individual and tribal identities as Native Americans. The concept of Eurocentric, Western-based public education often still carries a negative connotation to many Native American families because of these historic impacts and losses. Many of these negative assimilation effects have been countered by "American Indians who lobbied and won passage of the Indian Religious Freedoms Act of 1978 and the Native American Languages Act of 1990" (p. 4). Furthermore, the U.S. Secretary of Education's Indian Nations at Risk Task Force found that schools that respected and supported Native American student's languages and cultures were more successful in educating Native American students.

Other negative impacts of the boarding school system and assimilation practices have been further mitigated by modern tribes building back linguistic, historic and cultural programs. This building back process has occurred over time and manifested differently in different tribes. Overall, tribes have become more organized and situated where they can create and lead programs that replenish various aspects of their culture and open these programs to members within the tribe. However, these programs are typically available only to those registered with a specific tribe(s) and

residing on the reservation of that tribe. Due to the often complex registration and residency requirements, the majority of the Native American population is removed from direct contact with their tribe's reservation and cultural and historical programs that would both mitigate many historical traumas and strengthen individual Native American identity. This creates a whole new set of complexities into the investigation of Native American identity and the needs of Native American students.

Another factor that has complicated the ability for educators to understand what specific challenges arise with urban non-reservation based Native American students in the classroom is the fact that Native American students come from a wide and diverse number of different Native American tribes which differ greatly in cultural and linguistic attributes. For example there are over "100 native languages currently spoken" within the United States (Fixico, 2006, p. 39). These languages are divided into eight linguistic groups: "Algonquian, Athapaskan, Caddoean, Iriquoian, Muskogean, Penutian, Siouan, and Uto-Aztecan" (p. 39). These linguistic groups differ as much in construct as do the modern languages of German and Chinese.

The cultural constructs of individual tribes also greatly differ as do tribes in specific regions. For example, the tribes of the southwest have distinctive cultures and customs that are very different from the tribal cultures and customs here in the Pacific Northwest. Due to the diversity of Native American tribes, it is problematic to group the entire population of Native American students, reservation-based or urban, non-reservation-based, together as one collective culture and expect that such a vague and superficial understanding of Native American culture can adequately address individual student needs. Often this

broad approach leads to stereotypes and other hindrances to equitable understanding and can cause students to feel isolated or unappreciated.

The final factor that has proven problematic in helping address what specific challenges arise with urban, non-reservation based Native American students in the classroom is the fact that most research and scholarly information is focused and based on students who live on their reservation. Despite that these students represent only 30% of the total population of Native Americans (House, Stiffman, & Brown, 2006), they have received the most investigative attention in educational research. Regarding the definition of reservation-based schools, it should be noted that in most cases only those children who are registered with their tribe and living on their reservation can attend reservation-based schools. Boarding schools and tribal schools usually require that students are registered with a federally or state recognized tribe; however, they need not live on their reservation to attend (Reyhner, 2004). While my goal is not to undermine the importance to address Native American students who live on the reservation, the underlying assumption of this paper is that all Native American students, regardless of their residency, benefit when they are part of an educational system that understands and respects their cultural needs. However, this paper aims to address the specific complexities in identity formation that arise when Native American students reside in a location away from the cultural centers of their tribes. These students represent the majority of their cultural and ethnic group and because of this more research needs to be examined that focuses on the specific needs of this population. Ideally, this research can address specific challenges that can arise with urban, non-reservation based

Native American Students in the public school setting.

Literature Review

Several sources were examined, including research studies, articles that addressed topics relating to urban Native Americans and urban Native American students, and books that attended to topics of Native American history, schooling and identity. All of the articles and research studies were obtained through online databases including ERIC, database for articles and reports in education and the interlibrary loan system. A clear message that echoed in many of these sources was that there has been little research attention given to urban Native Americans and urban Native American students. That there was an overall lack of available research addressing the concerns laid out in this paper was disappointing. Nevertheless, some scholars have indicated this lack of research is problematic and conducted research accordingly. The literature review is sectioned into topic areas as related to urban Native American students and their identity. The first section addresses the basis of urban American identity and the following sections look at more specific areas of urban Native American identity and the relationship to public schooling experiences and processes.

The Basis of Urban Native American Identity

While it is clear that the lack of research available indicates that the area of Urban Native American students needs to be further investigated, scholars have grappled with this issue. Ladino (2009) clearly stated the premise of this paper's research question: What specific challenges arise with urban non-reservation based Native American Students in public school settings?

Despite the fact that more than two-thirds of American Indians live in urban areas, many readers and scholars of American Indian literature continue to associate Indigenous peoples with natural environments rather than urban ones. In the minds of many non- Native Americans, Indians still wear headdresses, live in tipis, paddle canoes, and live in perfect harmony with plants and animals in a prehistoric pastoral world. (Ladino, 2009, p. 36)

Ladino further asserted that these stereotypes are very problematic not simply because they generalize and romanticize the population of Native Americans but also because these stereotypes neglect to reflect the total population of Native Americans' true demographics, lives and concerns.

Ladino (2009) strived to use literary texts that have been written by Native American authors in an attempt to examine urban Native American existence. This understanding is a necessity for educators and researchers to address the needs of urban Native American students in the public schools. Therefore, Ladino's article has the ability to offer specific insights that can prompt more research and examination into urban Native American students and the issues they specifically face. One of the literary examples that Ladino relies heavily upon is Sherman Alexie's collection of short stories, *Ten Little Indians*. Ladino analyzes several of the stories within Alexie's work in order to examine urban Native American existence and cultural identity. One such point made early on in the article suggests that "Indians perceive and experience the city differently depending on their economic and social status." (p.37) This same conclusion could reasonably be applied to urban Native American students, meaning that these students may have different expressions of their identity and place at

their school based on these same social-economic parameters.

In one of the stories within Alexie's *Ten Little Indians*, a Spokane Native American college student named Corliss seeks out a Native American poet in Seattle. Ladino (2009) examines how at the end of her journey Corliss finds out that the poet, Atwater, is not the "indigenous version of Harrison Ford," as Corliss had hoped. Rather, he is a Spokane Indian who was raised by a white couple in Seattle and admits to 'faking' and Indian identity to achieve success as a poet." (Alexie as cited by Ladino, 2009, p. 38)

Ladino also examines the fact that Corliss, upon hearing about Atwater the poet, concedes that "while she may know her tribe, her clan, and both her 'public' and 'secret' Indian names, everything else she knew about Indians was ambiguous and transitory" (Alexie as cited in Ladino, 2009, p. 38).

Corliss, having embarked on a search for authenticity, found instead that identity is complex and grows out of a "host of lineages" (Alexie as cited in Ladino, 2009, p. 38). This excerpt exemplifies, as Ladino suggests, the complexities of cultural identity among urban Native Americans and makes clear that no two people, even from the same tribe, necessarily perceive themselves in the same manner. This implies that urban Native American students like Corliss may construct their cultural identities with a similar diverse approach based on their backgrounds and lived experiences and not just based on their tribe and tribal culture.

Another character present in Alexie's work showcases the identity of Jackson Jackson. This character seems to be clear on "who he is and where he comes from" yet describes himself to others as "perpetually disappearing" (Alexie, as cited in Ladino, 2009, p. 39). This part of the story addresses

identity and “Indianess” and the following frames the situation:

When Jackson Jackson tries to pinpoint a fellow homeless Indian’s identity, this “Plains Indian hobo” responds with a poignant question that resonates in this story and throughout the collection: “Do any of us know exactly who we are?” (Alexie as cited in Ladino, 2009, p. 38)

Ladino suggests that this example of asserted identity relates to the effects our location have on creating a basis for our identity. Further, the more multifaceted and complex conceptions of identity are well suited in an urban setting, which is often filled with a wide range of diverse identities.

Ladino (2009) also concludes that urban Native American identity, “like the urban setting that envelopes it, is constantly in flux” (p.39). This would suggest that researchers or educators seeking out research on urban Native American students should take into account limitations of the application of specific study information. Many factors may affect urban Native American student identity other than the specific tribe the student comes from, such as the specific dynamics of the city where the student lives. Other factors need consideration when trying to attend to ways to better develop a system to address Native American students, particularly urban students' struggles with school success. It may be that a different pedagogical approach or a slightly modified pedagogical approach is necessary in each school district based on the number of urban Native American students, the number of tribal affiliations, socioeconomic status, dynamics of the area, and a myriad of other related factors that affect cultural and individual identity. In other words, Ladino has suggested that there are a wide range of

factors that affect urban Native American identity. Therefore, there should be a very well planned out approach in addressing the specific struggles these students face in school that can hamper their ability to be successful students. Ladino’s examination of identity certainly suggests this may be the case.

Cultural Identity in the School Setting

Powers (2006) conducted an exploratory study of cultural identity and the use of culture-based programs with 240 urban Native American students, ages 9-18, attending the same public school. Data from these students was collected through several surveys conducted over the course of a school year and the following summer. It was clear within the introduction of the study that a problem existed within these schools for Native American students. Powers claimed that

American Indian students are at great risk for failure. Cultural differences or discontinuities between Native culture and the majority culture of most schools are commonly cited as the major cause of academic failure among American Indian students. (Powers, 2006, p. 21)

While the initial premise of Powers study could be arguably applied to all Native American students and not just urban Native American students, it is made clear by the results of this study that “Native cultural identity and school success may be more complicated than a simple linear relationship.” (p. 43) There was not a simple way to apply the study model broadly to all Native students. Powers concluded that the results indicated the effects of cultural programming on students was more strongly related to the school outcomes of those Native American students more affiliated with their tribe and culture. Cultural programming within the schools entailed the use of various programs and

assistance that focused on Native American topics and culture. This could indicate that urban students who are further removed from their tribe and cultural resources are less likely to be affected by cultural programming in the schools. However, Powers also concluded that a significant "correlation was found between cultural identity and participation in cultural programs" (p. 43). This may indicate that even students who were not as directly affiliated with their tribe, yet who maintained a strong sense of Native American identity could be equally positively impacted by the use of cultural programming in the schools even if they were considered urban Native American students.

Most importantly Powers' study recognized the complexities of being an urban Native American student with the following conclusion:

Urban American Indian students are more likely than rural American Indian students to find themselves caught between two cultures, benefitting little from either. For example, moving to a city often results in losing extended kin who are critical to socializing and to protecting American Indian adolescents from risk-taking behaviors. (Machamer & Grueber as cited in Powers, 2006, p.44)

In the end Powers' conclusions indicate that being an urban Native American student can be a trade-off. This trade-off is illustrated with benefits such as many students typically representing a higher income than those who are from the reservation. Conversely, there are also hindrances such as students typically having a weaker Native American identity. Many complexities such as loss of cultural identity and the lesser affects of cultural

programming with some urban students suggest that this group needs a more specific model or span of research devoted to gaining better insight into aiding these urban students in achieving academic successes. While this study is important in its assertion that an effective model that takes student needs and school climate into consideration should have a positive impact on all students, the limitations of the scope of this study leave more questions regarding what to specifically do to better serve urban Native American students.

The Issues with Invisibility

Amerman (2007) conducted interviews with students that attended the Phoenix School District between 1945-1975 in order to represent actual accounts of urban Native American students who attended public schools during the 1950s, 1960s and 1970s. This study points out a distinctive difference between Native American students who attended boarding schools or on-reservation schools from those that attended public schools in cities. Boarding schools were defined as schools ran specifically for Native American students and generally located away from any reservation and on-reservations schools being schools attended solely by students living on the specific reservation where the school is situated. Another assertion from Amerman is that "even though there were tens of thousands of Native Americans.....who attended urban public schools between 1945 and 1975, historians have been rather slow to learn their stories" (Amerman, 2007, p. 39). While many historians and researchers have "now produced several good studies of federal boarding schools and federal Indian education policy" (p. 39), they have almost completely overlooked urban Native American school experiences. Amerman illustrates a noticeable pattern throughout the research examined. A re-occurring

question as to why the majority of Native Americans, who live in urban areas, have been and are still being ignored by prominent research and inquiry is once again addressed. This same question is applied by Amerman to urban Native American students as well; if they indeed represent the majority of Native American students, why are they not being examined more thoroughly to address their specific needs within the system of education? Why has the focus of most research been solely on reservation and federal boarding schools? These situations and school settings certainly deserve research attention. However, there is a need to prepare all students for success and studying only 30% of the Native American student population is not going to properly prepare educators or schools to adequately assist urban Native American students in achieving academic success. This lack of adequate assistance was certainly the case with the students Amerman interviewed.

One of the main factors addressed by many student accounts of being an urban Native American student was the factor of invisibility. Most students said that they felt invisible in the schools and in fact "educators seem to have been generally unaware that there were significant numbers of Indian students in their schools" (Amerman, 2007, p. 40). This invisibility led educators to engage in "insensitive portrayals of Indian history and culture" (p. 41). These factors, according to Amerman, certainly did not contribute to making the Native American students in the school feel comfortable or welcome and did not aid in their motivation to achieve school success. This same problem could no doubt still exist in some urban schools that have a significant Native American population. One student commented on the history he learned in high school as being "white supremacist indoctrination" (p. 41). More research needs

to be done to address how much improvement has been made to the content within the various social studies and history classes in modern urban schools. Research examining textbooks needs to be done, especially in schools lacking the budget to replace outdated textbooks that still render interpretations of Native Americans in a minimal, stereotypical or insulting manner. Amerman illustrated textbooks as yet another factor that could have a negative impact on urban Native American students' motivation to be successful in school.

Another problem noted by Amerman (2007) was the long term affects of negative school experiences on urban Native American students. One student explained how at home she received a lot of love and encouragement and felt very reinforced and praised. However, entering school was likened to "someone throwing a glass full of water on you. You hit the white world, and it's not a very nice world" (p.43). This experience has followed this particular student into adulthood:

Even today, she said speaking in 2000, "if I walk into a room of only white people, at meetings or a conference or something, and I'm the only minority there, the insecurity that developed at Longview School starts bubbling up, like I'm still not good enough to be around white people. It bubbles up at me, and I stand at the door, and I have to work to push it back down. It's like a demon that always pops up" (Amerman, 2007, p.43).

This indicates a potential threat to students self confidence if the urban schools they are attending do not work to address their needs or choose to interact and educate in a manner that is perceived as insulting or degrading to Native American students. Amerman illustrates that these problems can

affect students long after their urban public school experience has ended and can make other post-secondary successes difficult to attain or strive for.

Being invisible and therefore stereotyped was not the only threat to self-confidence and identity that these student accounts described. Being visible to educators as a Native American often effectively lead to Native American students being tracked into lower levels and being labeled academically deficient, even when they were not. Students who did score high were accused of cheating on the standardized tests and one subject in the study reported that one teacher made the comment that "Indians were incapable of doing that well and accused [the student] of cheating" (Amerman, 2007, p. 44). This led that particular subject to quit trying in school and drop out by the 8th grade. Other students were more resilient and moved into high tracks when it was proven that they did not cheat. However, most of these students commented how uncomfortable they felt being surrounded by all white students in these higher classes.

Based on these students' accounts, educators were doing very little to make these students feel welcome in the schools or classes. The students were being stereotyped and labeled as deficient because they were Native American, if they were given any attention at all. Amerman (2007) illustrated with many of the urban Native American student accounts just how debilitating these negative interactions could be to academic success. There were also examples that showed these negative affects impinging on the abilities of Native American students to attain or strive for post-secondary successes and leaving a permanent affect on self-esteem and identity. While some of these school interactions have no doubt changed since the 1970s, many could still be present in the

schools. With the current drop-out rates and suicide rates of Native American students far greater than that of other racial groups (Rutman, Park, Castor, Taualii, & Forquera, 2008), many of these problems within the schools are still serious enough to have a dramatic impact on students abilities to be successful.

Cultural Identity Across Generations

House, Stiffman, and Brown (2006) conducted a qualitative study that examined both culture and ethnic identity within 24 urban Native American youth, elders and parents in the Southwest. The major premise of this study was to investigate through the use of focus groups, how ethnic identity was articulated by Native American youth, parents, and elders and what the similarities and differences were generationally as well as the methods used for preserving, practicing and passing down identity. Data was analyzed by sorting the data into domain categories. The research team then identified categories or themes for the youth, parent, and elder groups and coded the data into consensus categories. The results indicated that "respect for elders, responsibility for passing on history to new generations, hard work, and sharing and helping were critical elements" of what it meant to be Native American across all three generations represented (p. 401). Another important factor mentioned by the youth was traditions. Examples were given by youth such as tribal dancing, songs and arts like jewelry and basket weaving. All groups studied, 10 youth, 6 parents, and 9 elders, identified language and physical features as being an important and distinctive feature of being a Native American. Native American youth responses to questions involving values and hardship suggest that there is a firm belief in respect for elders and a common theme of frustration of current stereotypes with one

student recanting conversation in which the assumption has been that all Native Americans party and are drunks. The youth respondents also highly valued community, with one subject stating that "you may not be related by blood but you still consider them your family" (p. 402).

These responses made by urban Native American youth suggest that there is certainly a strong connection to Native American identity present in these specific youth. The limitations are that these youth are in the Southwest. The question as to whether all urban Native American youth in other geographical areas share the same values and beliefs is left unanswered. Also, House, Stiffman, and Brown (2006) mention the idea of comparing the responses of urban Native Americans with the responses of reservation based Native Americans but were unable to enact this as a full part of their study. This would have certainly provided a basis for examining the difference in urban Native American identity with that of reservation based Native American identity. This comparison would be particularly well suited for the youth category, as this is key in examining what specific issues urban Native American students' face that can be both similar and different from their reservation based counterparts.

Identity and the Relationship to Risk Behaviors

Stanley, Beauvais, Walker, and Walker (2009) examined the initiation of alcohol use among 253 urban Native American students residing in the Seattle area over a 9-year period beginning in 1988. While this is certainly a concern for all students, the specific examination of urban Native American students can provide insight into one of the many complications urban Native American students can face in regards to their educational progress and school

successes. The premise of Stanley et al.'s study is that drinking among all underage youth has been a prevalent problem for some time and that studies have examined youth on reservations and found that reservation based Native American youth are a "high-risk group in terms of early exposure and high prevalence of alcohol use by those living around them" (Beauvais, as cited in Stanley, et al, 2009, p. 360). Once again, it is asserted that the urban population of Native American youth have been ignored by research, in this case, addressing alcohol use.

For data analysis a discrete-time proportional odds model was used due to the inclusion of time-invariant and time-dependant covariates. This method also allowed for data inclusion of youth participants that did not use alcohol at all prior to the end of the study period. The results gathered from surveys and interviews found that several factors had an impact on alcohol initiation. Family life was a huge factor and youth from families that were more cohesive and did not have a father who drank were less likely to initiate alcohol use. Interestingly, it was found that having a mother that drank did not have the same adverse affect as having a father who drank. There was no distinction between genders in terms of rates/ages of initiation. Urban Native American youth were also more likely to initiate alcohol use if their peers were drinking. The results show that approximately 32% of urban Native American youth have reported using alcohol by the age of 13 and by 15 the cumulative rate of alcohol use is approximately 65%. (p. 369) Stanley, Beauvais, Walker, and Walker (2009) suggest that the results show urban youth have a smaller percentage of initiation of alcohol use than reservation based Native American youth according to similar study results conducted during a similar time period. It was also suggested

that the rates of alcohol initiation in urban Native American youth may be slightly lower than the rate of all American youth.

There are always limitations in terms of the scope of generalization to all groups of urban Native American youth. However, Stanley, Beauvais, Walker, and Walker (2009) suggest that there is not a significant factor of alcohol use in this particular population of urban Native American youth located in Seattle, Washington. This does not mean that alcohol use cannot be a factor in undermining school successes but suggests that there are other factors contributing to the issues and struggles urban Native American youth face specifically. This study also suggests the possibility that being an urban Native American youth can lessen the likelihood of alcohol consumption from what it would be on the reservation, though more examples of studies and their data would need to be examined to be more conclusive with this suggestion.

Beebe, Vesely, Oman, Tolma, Aspy, and Rodine (2008) also examined the implications of alcohol use along with tobacco and other drugs in a study conducted in Oklahoma. In this study data was collected through surveys from 1,350 randomly selected households in two cities within Oklahoma. Ten percent, or 134 households, were Native American and were the basis of the analysis. Data analysis was completed using a chi-square test for both bivariate associations between dichotomous risk factors and demographics and ordinal demographic variables and trends. The data was then used to calculate ratios using logistical regression. The results suggest that the most important asset for urban Native American youth to have in order to lessen the likelihood of alcohol, tobacco and other drug use was having a non-parental adult role model. It was also found that family "appears to exert a stronger influence

on American Indian youth regarding substance abuse that peer influences" (p. 90). In terms of the asset of time usage, both religion and participation in organized activities were shown to have a profound effect on whether or not urban Native American youth engage in alcohol, tobacco and other drug use. The average age of youth was 15.4 and of these youth 79% reported not using alcohol in the past month, 71% reported not using tobacco in the last month and 87% reported not using other drugs in the last month.

Beebe, Vesely, Oman, Tolma, Aspy, and Rodine (2008) suggest, similar to the results of Stanley, Beauvais, Walker, & Walker (2009), that substance abuse is not the major factor affecting urban Native American youth in obtaining school success. However, once again the factor of generalizing data to other areas of Native American youth populations could be problematic and there was no comparison to reservation based Native American youth in this study to see which group is more susceptible to substance abuse. One important finding within Beebe, et al.'s study is the suggestion of an adult role model that is non-parental as a means to prevent risk-taking behaviors. Perhaps this type of mentorship could be beneficial beyond that of preventing substance abuse and provide guidance and support for other school related success as well. More research is necessary to examine this possibility.

Rutman, Park, Castor, Taulii, and Forquera (2008) conducted a youth risk behavior survey on urban Native American youth. Data was obtained from the national Youth Risk Behavior Survey (YRBS). This annual survey conducted by the Centers for Disease Control administers annual surveys to youth in grades 9-12. For this study 513 urban Native American survey takers were examined between 1997 and 2003. Data

was analyzed using STATA version 8.2 software. Prevalence estimates and 95% confidence intervals were calculated for both urban Native American students and urban white students. The results indicated that urban Native American youth engaged in significantly higher rates of some unsafe behaviors than that of white youth, such as never or rarely wearing a seatbelt as a passenger in a vehicle, being in a fight in the past year that was physical in nature, and carrying some type of weapon in the past month (p. 81). Also, urban Native American youth were twice as likely to be hurt by a boyfriend or girlfriend, be forced into having sexual intercourse, and carry a gun in the past month. Another major factor that was examined was the prevalence of suicidal ideation and behaviors. Urban Native American suicide attempts were three times higher than that of white youth and injuries attained from a suicide attempt were five times higher among the urban Native American population.

Sexual activity reports were much higher in urban Native American youth as well. Urban Native American youth were three times as likely to have had sexual intercourse by the age of 13 and to have been pregnant or gotten someone pregnant. While no comparison to reservation based Native American youth was mentioned it was asserted by Rutman, Park, Castor, Taulii, and Forquera (2008), that due to the overwhelming health disparities Native American youth are experiencing a crisis. The need to examine socioeconomic status is also made clear by the results of the study. Rutman, et al. indicates a wide variety of factors created by the risk-taking behaviors may be hampering urban Native American students from being successful at school. The results also assert a need among Native American students to have proper health care, nutrition, and safety. If a large percentage of urban Native American

students are coming to school nutritionally deficient, distracted by abuse, fights, and other unsafe behaviors many of these students are struggling in school. More research is essential to measure whether or not the abovementioned factors are occurring in other areas that have large populations of urban Native American youth. This study indicates that disparities can exist in health and safety behaviors that should be addressed as a measure of supporting urban Native American youth achieving school success.

Family and the Effects on Urban Identity

Tsethlikai, Peyton, and O'Brien (2007) examined the relationship of family, particularly maternal family and the levels of child aggression among urban Native Americans. In order to accomplish this analysis, the comparison of perceptions and aggressions of 20 mother child duos representing 13 different Native American tribes were examined that lived within midsized Midwestern towns. All of the children were between 6-9 years of age and data was collected through interviews and questionnaires with the mothers. Data analysis was conducted by dividing the questionnaire topics into categories. A process of scoring questionnaire items on a points-based scale and using the mean of the scores to form a composite variable was then applied to each category. The results suggested that the 80% of mothers were proud of their Native American heritage but only 30% strongly agreed that preserving their Native language was important. The results also suggest that the stronger the identification with Native American culture and individual identity within urban Native American youth meant a greater ability to maintain high levels of self-esteem. This concept of Native American identity and self esteem also relates to the correlation between the mothers negative attributions

and the levels of aggressive problem behaviors noted in the study results.

Tsethlikai, Peyton, and O'Brien (2007) indicate that urban Native American children whose mothers maintain a strong tie to their Native American culture and identity have higher self-esteem and are less likely to exhibit problem behaviors. This could suggest that children who are struggling in school are inhibited by the negative attributions of their mother or parental guardian. Since all of the research examined has noted a strong connection between family life, decision making, and attitudes of urban Native American youth, family outreach programs and family involvement are areas that should be addressed within schools that have a high population of urban Native American students. The scope of this study was very limited and a broader inquiry is likely to be useful in providing methods to better help students address familial complications and still maintain the ability to be successful in school.

Issues of Mobility and Potential Strategies for Students

Zehr (2007) addressed the issues of mobility among urban Native American students at a middle school in South Dakota. Zehr used statistics provided by the US Department of Education to compare with data collected from the middle school. The impact of newly implemented strategies within the school was also measured. The school population was 61% Native American and the turnover rate was approximately 50%, with many of those being Native American. This meant that approximately 50% of the student population within the school was either leaving or just entering the school each year with the remaining 50% being continuing students. Zehr discussed two main problems that can arise from frequent school changing. The first problem was that

students were falling behind academically and the second problem was that students who change schools frequently, earlier on in their school years were more likely to drop out in high school. Furthermore, with urban Native American youth making up 1.2% of the total population of all public schools, Native American students were twice as likely to have changed schools in their last two years of high school than their white and Asian peers.

This percentage and problem appears to be exacerbated in states with a higher population of urban Native American students. There are currently five states that have populations of urban Native American students greater than 10% (Zehr, 2007). Factors of socioeconomic status are related in that "families in poverty tend not to have stable housing. Kids move around with different family members" (p. 14). Several policies have been enacted within the South Dakota middle school to address mobility issues. These policies include developing a personal connection with parents, creating a standard way to assess where students are academically who enroll after the start of the school year, devise a portfolio for student work that can be taken with the students to other schools to be attended, creating working relationships between schools so that information can be shared about individual students needs as they move from schools to school, and providing extra support to help teachers integrate students into classes (p. 14).

Other cultural approaches have been implemented to motivate urban Native American students to attend and be successful in school. These include cultural and Native language classes. While these strategies are likely to work well in areas where there is a large urban population of Native Americans from one tribe or related tribes, this approach could become problematic in areas with a diverse range of

tribes represented. The goal is to have students feel valued by having culturally relevant materials and subjects and having only a fraction of the urban Native American students represented in these programs could have a negative impact on those students who are not represented within the cultural or language programs offered. Zehr does suggest strategies that could more readily be applied to a wider range of demographic areas. Zehr (2007) illustrates that developing a personal connection with parents and creating portfolios for students along with creating culturally appropriate Native American classes that incorporate all tribes that students at the school represent can all be beneficial in motivating students to both stay in school and strive for academic success. More research needs to be conducted to examine which programs have the most positive effect on both tackling mobility issues and supporting urban Native American students to attain the highest levels of school success.

Darling and Ward (1995) conducted a study that addressed teaching methods focused on creating learning communities by placing 31 primarily white pre-service teachers in a midsize K-8 school in British Columbia. The school was predominantly made up of urban Native American students and there were 160 students total. Data was collected through classroom activities that demonstrated the impact of language variation on communication and both students' and pre-service teachers' journals. Data was analyzed by calculating response patterns to classroom activities and teacher-student and student-teacher interactions for both students and pre-service teachers. Darling and Ward illustrated that an educational framework that encompassed addressing stereotypes that were held by both teachers and students, teaching history from a Native point of view, and creating

positive communication by taking on different perspectives of students aided in creating welcoming classroom communities for many of the urban Native American students at the school. Results also showed that these methods better served the teachers in successfully communicating with students and families, addressing issues of classroom management and making better overall connections with their students despite the cross-cultural setting. Another factor addressed within the study was the fact that in many Native American communities, youth are not encouraged to initiate discussions with their elders. Darling and Ward addressed this with the participating pre-service teachers who initially found this puzzling at the beginning of the study. Darling and Ward illustrated that creating classroom language activities that encouraged students to communicate with each other and their teachers improved student academic success. The results also showed that these same activities helped students develop the ability to feel competent and understood in any learning situation. While this study was limited in its scope based on the small sample size from a specific area, Darling and Ward were able to glean many promising strategies for better serving urban Native American students in the classroom.

A Historic Look at Strategies for Change

Amerman (2007) examined student accounts living in Phoenix, Arizona during the 1960s and 1970s and the relationship of the American Indian Movement (AIM) on students' attitudes and activism to improve education within the area. Within this group of students there were varying attitudes ranging from "you need to behave and be what the non-Indian told you, otherwise you're not a good person" (p. 609), to others who were more militant and very behind the AIM overall. Those who fell in between

were often well connected to their language and heritage and were often in agreement with the problems being addressed by the AIM but were not always in agreement as to the methods being used to address the problems. Despite the ranges of opinion on the AIMs mission and tactics, there were several factors that had a positive impact because of the AIM. The first major factor to change was the reorganization of the urban Native community within Phoenix in 1973 after the AIM members had passed through. The overwhelming opinion was the need for unity and communication. Another participant expressed the need for "Indian people to minimize the number of arguments amongst themselves" (p. 613). He further suggested, "One of the reasons they [members of the Native American community] have not been able to progress is they have been too busy fighting with one another" (p. 613). Many students felt the same way regarding the need to better communicate civilly, with one student stating that "there were a lot of loose wires, and the wires almost got frayed because there were too many leaders" (p. 613).

Some students took a more active approach to encouraging unity and communication. Two high school students decided to use the printout of addresses for urban Native American students in the area and begin to go door-to-door listening to the concerns of various families and to encourage them to become more involved and active in educational issues. This eventually proved fruitful as the Phoenix Native American community came together shortly thereafter identifying a number of goals for improving the education available to their children. Three main objectives were addressed: (1) the creation of more Indian clubs within the districts large high schools to prevent feelings of alienation amongst urban Native American students,

(2) training workshops for faculty within the school district to address the issue of "invisibility" of Native American students, and (3) making administrators aware of funding available for Indian education. These objectives were created to address the overall feelings of hopelessness and powerlessness that many urban Native American students reported. Due to these initial actions a well planned and well organized political campaign followed that led to many changes being implemented throughout the school district. Amerman (2007) suggests that the urban Native American population within Phoenix was very diverse in the number of tribes represented and that these differences many have persisted as an asset to the AIM inspired actions taken within the community. The over-arching goal behind these political movements as Amerman implied was to protect the students' rights to remain "Native American" within the city and the schools. This framework could logically be applied to other areas that maintain a large population of urban Native American students. The ability to set up a support network both within the community and the schools to allow students to be confident in their Native American identities and therefore be more successful in schools appears to be a noteworthy task. More research is needed to see if these types of interactions and political movements happened in other areas and if there was a positive impact on students' school successes. Also, a correlation of the AIM to current issues, movements, and organizational tactics needs to be researched to see if these effects can be replicated in modern urban Native American communities and school districts with high populations of urban Native American students.

Discussion

It is made clear by the literature review that there is a complex range of factors that affect urban Native American students. These factors can occur both during school in terms of teaching methods, materials and programs or lack thereof and outside of school with families and outside behaviors and influences. There are forces within the urban Native American community and outside of it that can have positive and negative impacts on students' abilities to find school success. Amerman (2007) found that urban schools were unaware and ill-equipped in how to effectively deal with urban Native American students in a positive manner that encouraged and supported them academically. These negative impacts affected each student differently but provided an obstacle or set of obstacles for each to overcome if they were to persevere in the educational system.

It was also made clear by several of the studies examined that there are outside negative forces occurring beyond the realm of school that can hamper any student from being healthy or successful. These behaviors were examined in regards to urban Native American youth and ranged from early sexual activities and teen pregnancy to drug and alcohol use and high suicide rates. All of these behaviors can negatively impact an urban Native American students overall identity and cause complications in school and home life. The results of these studies indicate that the stronger the students support network, the less likely these negative behaviors are to occur or continue to occur for students.

In terms of positive reinforcement, several studies examined the use of culturally relevant material and cultural programs in the schools for urban Native American students and the range of positive impacts these programs could have on enhancing students' school success rates.

Overall, students who were more connected with their Native American identity were more likely to benefit from these programs. Another factor related to cultural programs that enhanced school success was the utilization of communication activities and lessons that showed a Native American perspective. By coupling these factors with the creation of a positive learning community urban Native American students were much more likely to be successful in school. It was also found that students whose mothers were more connected to their Native American identity and showed this connection in a positive way were less likely to exhibit problem behaviors. Family dynamics seemed to have a strong effect on urban Native American students' identity and their ability to overcome adversity and the lower pressure to partake in at-risk behaviors in general.

The specific challenges that arise with urban, non-reservation based Native American Students in the public school setting are broad and appear to be able to vary from location to location. The challenges can include complications caused from schools not being culturally respectful or aware of the diversity of their students, materials covered in the schools being offensive or outdated, students participating in risky behaviors such as sexual activity, alcohol and drug consumption, suicide ideation, and a lack of family support or negative family dynamics, a lack of overall tribal identify and lastly a lack of research to adequately address students needs.

Recommendations

Despite the broad range of factors that can affect urban Native American students, there are strategies that appear to be potentially successful in having a positive impact on students. The first strategy is suggested by Amerman (2007). The students who were interviewed illustrated

through their experiences how essential it is for school officials and educators to be aware of the diversity within the population of students. These interviews also displayed how important proper training and cultural awareness for educators and school staff is in order to be best situated to serve these populations productively and positively. Having any group of students left feeling “invisible” within a school is clearly not creating a welcoming school atmosphere for all students. Being aware of the dynamics that occur within the cultures of students as an educator and a school is clearly going to better allow for an inclusive learning environment.

The materials taught to students can also have an impact on their learning environment. One of the students interviewed likened the materials at the Arizona school to “white supremacist indoctrination” (Amerman, 2007, p. 41). The use of materials that portray any group of people or culture in a stereotypical or insensitive manner is going to negatively affect the students representing that particular cultural group and their school attitudes and success. Listening to these urban Native American students discuss their school experiences also illustrates that had educators been better equipped to listening to student and family needs and being aware of how to best serve students there could have been more positive school experiences for these urban Native American students. Therefore, the awareness of individual student needs and involvement of students and families is likely to be positive force with urban Native American students but will most likely be a positive for all students.

The use of culturally relevant programs and materials within schools that have an urban Native American population is yet another strategy that if employed could better support urban Native American

students school success. Powers (2006) concluded that a significant “correlation was found between cultural identity and participation in cultural programs” (p. 43). This finding may indicate that even students who were not as directly affiliated with their tribe, yet who maintained a strong sense of Native American identity could be equally positively impacted by the use of cultural programming in the schools even if they were considered urban Native American students. The results show that by making cultural programs available to students these students will feel more welcome and that the schools believe that their culture and identity is relevant within the learning community. These programs could help some students feel more motivated to attain school success.

The employment of specific strategies targeting the specific needs of the urban Native American population served by a particular school was also show by Zehr (2007) to be effective at encouraging students to do well in school and attain success. When it was found that the urban Native American students in a particular middle school were moving around frequently and changing schools, a specific set of strategies was created to address the problem by working with the students and their families. This collaboration entails student portfolios of schoolwork and grades and parental involvement within the school itself. Also, the schools created better methods of communicating with other schools which helped support the strategies laid out. Therefore, the results indicate that schools need to not only be aware of the populations of urban Native American students but also of any particular struggles, complications or issues that the specific population is experiencing. Much of this can be accomplished by creating or employing a strong family outreach program in which families are involved and encouraged to be involved with the school.

This awareness and family outreach can have a positive impact in allowing urban Native American students to overcome obstacles to their school success and become more motivated to learn and do well in school.

Conclusion

The overall lack of research regarding urban Native Americans and urban Native American students suggest that there is much need and opportunity for more research to be conducted. When examining this papers initial research question, what specific challenges arise with urban, non-reservation based Native American Students in the public school setting, there are still many unanswered questions that resonate within the research that was examined. Future research in urban areas that have significant populations of urban Native American students within the public schools is necessary to better understand the specific dynamics and complexities within this population. Comparative research between reservation-based students who attend schools on their reservation and students who are urban, non-reservation based attending schools in an urban area needs to be conducted. This research would help to discern any similarities and differences in school success, students understanding and appreciation of school importance and other factors of identity to get a better understanding of the differences between urban and non-urban Native American students.

The question remains of what a truly positive and conducive learning environment for urban Native American students would look like within a public school setting. What would the ideal class configurations and cultural programs entail and what types of family and home outreach programs would best serve and support these students? There is much room for

improvement in many schools to better serve their students, in many cases their urban Native American students, but no research was found that examined what may allow for the necessary improvements to occur so that these students are better able to succeed. The more examples created by research the better equipped schools will be at creating widespread improvement plans that could benefit all students.

References

- Amerman, S. K. (2003). "Let's get in and fight!": American Indian political activism in an urban public school system, 1973. *American Indian Quarterly*, 27 (3-4), 607-638.
- Amerman, S. (2007). "I should not be wearing a pilgrim hat": Making an Indian place in urban schools, 1945-75. *American Indian Culture and Research Journal*, 31(1), 39-62.
- Beebe, L., Vesely, S., Oman, R., Tolma, E., Aspy, C., & Rodine, S. (2008). Protective assets for non-use of alcohol, tobacco and other drugs among urban American Indian youth in Oklahoma. *Maternal & Child Health Journal*, 12(1),82-90. doi:10.1007/s10995-008-0325-5
- Darling, L., & Ward, A. (1995). Understanding the school community: a field-based experience in teacher education. *Teaching Education*, 7(1), 85-93.
- Fixico, D. L. (2006). *Daily life of Native Americans in the twentieth century*. Westport, Connecticut: Greenwood Press.
- House, L., Stiffman, A., & Brown, E. (2006). Unraveling cultural threads: a qualitative study of culture and ethnic identity among urban southwestern American Indian youth parents and elders. *Journal of Child & Family*

- Studies*, 15(4), 393-407.
doi:10.1007/s10826-006-9038-9
- Ladino, J. K. (2009). "A limited range of motion?": Multiculturalism, "human questions," and urban Indian identity in Sherman Alexie's "ten little Indians". *Studies in American Indian Literatures*, 21(3), 36-57.
- Powers, K. (2006). An exploratory study of cultural identity and culture-based educational programs for urban American Indian students. *Urban Education*, 41(1), 20-49.
doi:10.1177/0042085905282249
- Reyhner, J. A. (2004). American Indian education. Oklahoma: University of Oklahoma Press.
- Rutman, S., Park, A., Castor, M., Taulii, M., & Forquera, R. (2008). Urban American Indian and Alaska Native youth: Youth risk behavior survey 1997–2003. *Maternal & Child Health Journal*, 12(1), 76-81.
doi:10.1007/s10995-008-0351-3
- Stanley, L., Beauvais, F., Walker, P., & Walker, R. (2009). Initiation of alcohol use among urban American Indian youth: A discrete time hazards model. *Journal of Ethnicity in Substance Abuse*, 8(4), 359-377.
doi:10.1080/15332640903327310
- Tsethlikai, M., Peyton, V., & O'Brien, M. (2007). Exploring maternal social perceptions and child aggression among urban American Indians. *American Indian & Alaska Native Mental Health Research: The Journal of the National Center*, 14(1), 63-84. Retrieved from Academic Search Complete database.
- Zehr, M. A. (2007). Mobility of Native American students can pose challenges to achievement. *Education Week*, 27(7), 1, 14.

Increasing Access to Science for English Language Learners: It is More Than Just Reducing Achievement Gaps

Educational science reform has mandated that all students develop scientific literacy. Yet research suggests that English Language Learners' (ELLs) success in science does not match their English proficient peers. Since ELLs are becoming a prominent feature of mainstream science classrooms, it is imperative that teachers are prepared to teach ELLs. Thus, this paper asks the questions: how can teachers support ELLs to develop scientific literacy and how can teachers create bridges between students' school and home experiences? I examined longitudinal studies, case studies, and descriptive studies. Participants of these studies were ELLs in late elementary to middle level science classes and teachers of ELLs. The studies were situated in a wide variety of communities. Results revealed that ELLs' inquiry skills improved when teachers explicitly taught students how to engage in inquiry and provided freedom for students to explore their own interests. Also, ELLs' ability to use scientific language and participate in science dialogue improved when teachers mediated students' everyday language and academic language, provided students with hands on experiences to inform discussion, and made connections to students' interests and home experiences. Results also suggested that teachers can make connections between ELLs' school and home lives through family outreach. Thus, it is recommended that teachers employ the aforementioned strategies to support ELLs. These recommendations are limited by the diversity of ELLs' backgrounds and school characteristics in these studies.

Educational science reform has challenged educators to ensure that all students develop scientific literacy. According to the National Science Education Standards, an overarching principle guiding science reform is the belief that "science is for all students" (National Research Council [NRC], 1996, p.19). These standards address issues of equity for students because they require that all students have the opportunity to develop scientific habits of mind and to pursue interests in science (NRC, 1996). However, inclusion in science has not been the reality for many students who are English language learners (ELLs). Research has demonstrated

that the experiences of ELLs in secondary schools differ from fully English proficient students (FEPS). For example, research has found differences between ELLs and FEPS in secondary school completion rates, participation in advanced curriculum courses, and pursuit of higher education (Meltzer & Hamann, 2005). Additionally, results from standardized tests have demonstrated large achievement gaps between ELLs and FEPS, although the validity of these results are threatened by an overemphasis on testing language proficiency instead of academic ability and the effects of factors external to schooling, such as socioeconomic status and families'

level of educational attainment (Abedi & Dietel, 2004). Nonetheless, these results suggest that ELLs are not receiving equitable access to learning in science.

The pressing need for equitable access to science for ELLs is further heightened by the continuing rise of ELLs in public schools. It is estimated that the enrollment of ELLs in public schools nationwide has grown roughly 61% between the years of 1997 to 2007 (National Clearinghouse for English Language Acquisition [NCELA], 2007). This growth trend is predicted to continue well into the future. These demographic changes translate into a greater likelihood that public school teachers will be working with culturally and linguistically diverse youth. It is imperative that teachers are ready to meet the academic needs of these students because under Title III of the Elementary and Secondary Education Act, schools are required to provide evidence that ELLs are proficient in science (NCELA, 2011). Unfortunately, in mainstream classrooms, many teachers are unprepared to meet the academic needs of ELLs, which are twofold: English language proficiency and content area literacy (Meltzer & Hamann, 2005). This lack of preparation is troubling; if teachers are unprepared to address the needs of ELLs, then it is unlikely that ELLs will have equitable opportunities for academic success.

For ELL students to experience success in science, they need access to scientific literacy while simultaneously improving English language proficiency. However, academic success for ethnic and language minority students is affected by the relationship between students' experiences with school and their cultural experiences. Finn (2009) suggested that "characteristics that facilitate school successes are, of course, associated with the culture and language of the dominant group" (p.47). In part, to be successful in school requires

acquiescence to the dominant ideology of schooling, which is largely based on White, middle class beliefs, attitudes, and actions. This can result in students feeling alienated from schooling, from their culture, or any combination of the two. Alienation from either school or one's culture can drastically hinder student's success. Thus, it is important that teachers support ELLs to be successful and active in multiple communities to avoid the potential for alienation.

Teachers are required to promote academic success for ELLs, but success is unlikely if teachers fail to recognize that ELLs participate in multiple communities and make attempts to bring these communities together in schools. Thus, in this paper, I seek to find answers to the following questions: how can teachers support ELLs to develop scientific literacy and how can teachers create bridges between students' school experiences and home experiences? To address the former question, researchers have focused on identifying strategies for teaching important elements of scientific literacy. In this paper, I will focus on two aspects of developing scientific literacy for ELLs: engaging in inquiry and talking about science.

The research regarding best practices for teaching scientific literacy is divided. Some researchers are guided by the assumption that these skills need to be explicitly taught (Amaral, Garrison, & Klentschy, 2002; Cuevas, Lee, Hart, & Deaktor, 2005; Lee, Deaktor, Hart, Cuevas, & Enders, 2005). In contrast, others believe that ELLs' possess science skills and will be supported by drawing connections between experiences with science in school and in students' lives (Gibbons, 2003; Haneda & Wells, 2010, Rosebery, Warren, & Conant, 1992, Warren, Ballenger, Ogonowski, Roseberry, & Hudicourt-Barnes, 2001). In

this paper, I will explore these differences within this area of research.

To address strategies for serving ELL students holistically, research has focused on ways to support family involvement in students' schooling experience. This research has grown from studies that have demonstrated positive effects of family participation in school activities and involvement in student's work on student achievement (Sui-Chu & Willms, 1996; Trivetter & Anderson, 1995). In this paper I will describe differences and limitations of studies that are specifically aimed towards supporting ELL students through family involvement (Chen, Kyle, & McIntyre, 2008; Lopez, Scribner, & Mahitivanichcha, 2001; Trumbull, Rothstein-Fish, & Hernandez, 2003).

In addressing the issue of creating equitable learning conditions for ELLs, this paper has several limitations. First, I refer to ELLs as a singular category which fails to reflect the multiplicity of these students who represent a myriad of ethnicities, nationalities, languages, linguistic skills, schooling experiences, and socioeconomic backgrounds (Meltzer & Hamann, 2005). As a result, the ability to draw conclusions about how to meet the needs of such a diverse population is extremely difficult. Second, the research studies that I draw from represent a variety of ages of participants. They also draw from schools in many different locations with varying proportions of ELL communities. The variation in school and participant characteristics make it difficult to identify best practices that can be applied to specific grades and school communities. Despite these limitations, this paper offers important insights for supporting access to science for ELL students.

Literature Review

In 1974, the U.S. Supreme Court maintained that providing ELL students with equal textbooks and instruction did not create equitable educational opportunities for students and effectively barred them from participation in schooling (Lau v. Nichols, 1975). To redress this inequity, the Supreme Court ruled that non-English speaking students must be provided special assistance in public schools to learn English. Since this decision, public schools have been legally required to teach English to ELLs with the goal that these students will have access to educational opportunities, just the same as their FEP peers.

This issue of access for ELLs has continued to remain important as public schools have been serving increasingly diverse students under pressure of educational demands to narrow achievement gaps. Currently, ELLs are learning English in content area classes, which is a concern for teachers who may not be prepared to tailor instruction and content for ELLs. As a result, researchers have focused on ways to increase access to scientific literacy for ELLs.

Researchers have approached this issue from very different paradigms, which have in turn directed the nature of their studies and their conclusions. In the following sections, I will describe differences in how researchers have explored ways teachers can support ELLs to develop scientific literacy in the classroom. I will focus my exploration to specific elements of scientific literacy: doing science (inquiry) and talking science (dialogue). I will then describe what researchers have found about ways to support ELL students through family outreach.

Inquiry: Doing Science

Theoretical orientation has guided the way researchers have approached strategies

to support ELLs to build scientific literacy. Some researchers have operated from the theoretical framework that maintains that scientific literacy must be explicitly taught to ELLs and have accordingly focused on strategies to teach students how to engage in inquiry (Amaral et al., 2002; Cuevas et al., 2005; Lee et al., 2005). On the other end of the spectrum, researchers have recognized that ELLs, like all students, have rich experiences with inquiry and have sought to find ways to maximize access to science through students' lived experiences (Rosebery et al., 1992; Warren et al., 2001). This section will outline these differences by beginning with a description of two studies that illustrate a focus on explicit guidance into inquiry for ELLs. After describing these studies, I will critique them together. I will then explore two studies that originate from a funds of knowledge approach and critique each separately.

A large portion of the research on improving inquiry skills for ELLs has emanated from the program, Promoting Science among English Language Learners (P-SELL), which was funded by the National Science Foundation (NSF), the University of Miami, and Miami-Dade County Public Schools. This research team designed a five year research study, from 2004 to 2009, that explored instructional and curricular strategies and developed professional development for teachers to increase student learning. Within this study, Cuevas et al. (2005) analyzed the effects of an intervention geared towards promoting scientific inquiry skills (refer to Lee et al., 2005 for a more detailed description of the study). The intervention was built on an inquiry framework that made steps of scientific inquiry, questioning, planning, implementing, concluding, and reporting, explicit to students. The intervention also guided teachers to gradually scaffold from more teacher centered to more student

centered inquiry. The participants in this study were pared down to include seven third and fourth grade teachers who were selected for their skill at teaching science and literacy to diverse students. Each teacher selected four students from their classroom that represented various achievement levels, English language proficiencies, and backgrounds.

To measure scientific inquiry skills, Cuevas et al. (2005) met with students individually to elicit student responses on a context based, inquiry problem at the beginning and end of the school year. Results revealed that the students collectively improved their scientific inquiry skills as evidenced by an increase in total scores on the assessment. The increases were similar for native English speakers and native Spanish speakers. The results also demonstrated that although ELL students initially performed lower than their peers, at the end of the year they performed comparatively higher. Thus, Cuevas et al. (2005) concluded that the inquiry based intervention was successful at promoting growth for students with diverse backgrounds and varying degrees of English language proficiency.

A different study that was also funded by the NSF explored the effects of an intervention program on students' inquiry and literacy skills (Amaral, Garrison, & Klentschy, 2002). Amaral et al. designed a four year intervention that was implemented in a large, elementary school district whose population represented diverse socioeconomic, ethnic, and linguistic backgrounds. This intervention utilized research based instructional units that focused on teaching science content and inquiry skills. The researchers limited their analysis to include in-district students who took part in the program during the four years of its implementation. To measure science learning, students completed the

science section of the Stanford Achievement Test. The data were analyzed with respect to the number of years in the intervention and the level of English language proficiency. Analysis revealed that despite different levels of language proficiency, the longer language learners participated in the intervention, the higher their scores were. As a result, Amaral et al. (2002) concluded that this intervention was effective for supporting English language learners with a range of language proficiencies to increase their knowledge of science content and skills.

These results of these studies suggest that overtly teaching scientific inquiry skills to ELLs can increase achievement (Amaral et al., 2002; Cuevas et al., 2005). However, these studies are limited in their ability to address issues of access for multiple reasons. First, because the interventions drew on multiple strategies, it is impossible to parse apart the strategies to determine which ones led to achievement gains. Second, the participants in both studies represented large communities of ELLs within the school and the larger community. The effects of these communities on the success of these interventions were unexplored by the researchers. Third, both studies were funded by the NSF, which is an “independent federal agency that was created by Congress in 1950 ‘to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense...’” (NSF, 2010). This funding may impart a bias of scientific progress to the work done by these researchers, which may explain why both large scale studies were aimed towards narrowing achievement gaps for ELLs and utilized testing to measure student learning. Moreover, the theoretical landscape of these studies reflected a belief that ELLs must be taught how to do science, instead of

recognizing and utilizing the ways that they practice science in their everyday lives.

In contrast, researchers involved in the Cheche Konnen project have examined ways to support ELLs to engage in authentically in science. Rosebery, Warren, and Conant (1992) examined changes in student thinking as they engaged in inquiry. The participants in this study spoke Haitian Creole as their native language; 12 were seventh and eighth grade students and four were high school students. Throughout the school year, students designed and implemented investigations about local ecosystems. The inquiry that students engaged was guided by teachers to feature key characteristics: experiments grew out of students’ questions and experiences and connected science at school to the larger community. Rosebery et al. compared students’ responses to an inquiry probe at the beginning and end of the year and found marked differences. They noted that when posed with a specific scientific problem, students developed significantly more testable hypotheses and designed more experiments at the end of the year.

Rosebery et al. (1992) concluded that this advancement resulted from couching inquiry within a framework that reflects students’ interests and accommodates their lived experiences. This finding suggests that one way to increase access for ELLs is to use their personal experiences and ties to the community as a foundation for developing scientific literacy. However, these results are limited because the researchers explored a very specific population within school communities that reflect a large make up of ELLs. Similarly to Amaral et al. (2002) and Cuevas et al. (2005), these results may not apply to schools where ELLs are numerically a minority.

In different Cheche Konnen project, Warren et al. (2001) diverged from a common approach of teaching students how

to define predetermined variables and to engage in inferential logic and instead utilized an exploratory inquiry activity. They analyzed the work of a fifth grade, bilingual, Latino student as he collaborated with two other students to design an experiment to answer a question. The researchers transcribed the dialogue that took place as the students worked to create the constructs within their design. They found that these students drew on resources from their everyday experiences to conceptualize this task in the absence of “any explicit discussion in class of experimental practice in terms of variables, controls, and experimental inference...” (p.541). The students successfully engaged in authentic scientific inquiry without direct instruction from the teacher by using their everyday skills.

The results from this case study are limited by a small sample size and lack of analysis of student learning. Yet, these findings are important because of their testament to the wealth of inquiry skills that ELL learners bring into the classroom. This research also suggests that teachers can support access to inquiry by providing students opportunities to explore problems in ways that arise organically instead of explicitly guiding the inquiry process.

The studies funded by the NSF and the studies from the Cheche Konnen project are divided by a subtle assumption; the former is driven from an assumption that ELLs lack necessary skills to engage in science talk while the latter arises from an assumption that ELLs have complex and multidimensional assets for engaging in meaning making. Nonetheless, both sets of studies reveal that it ELL students are supported when inquiry is made explicit and reflects students’ prior knowledge and experiences.

Dialogue: Talking Science

In this section, I will briefly explain why researchers have focused on the need to support ELLs to engage in scientific dialogue. I will then describe studies that explore strategies for structuring teacher to student talk and student to student talk. I will critique each study separately and conclude with insights for teachers.

Scientific language necessitates the use of technical vocabulary in tandem with specific thinking skills, such as reasoning, forming hypotheses, critiquing evidence, making evidentiary claims, and drawing comparisons (Wellington & Osborne, 2001). Because of the specialized form that science often takes, learning science is often thought of as akin to learning an additional language. ELLs, who are already faced with learning academic forms of English, must be supported to learn how to use science language (Lee & Fradd, 1998). Research has explored ways to support ELLs to gain understanding of science concepts while simultaneously supporting them to expand their abilities to talk about science in manners that coalesce with the valued language features of the discipline.

To address this issue, Gibbons (2003) sought to answer the question: how can teachers support students to develop spoken language to access formal language in science? This case study examined nine and ten year old Australian students in a science classroom where roughly 90% of the students were ELLs. Gibbons analyzed classroom discourse to identify factors that led to language development through socially situated, meaning making in science.

Gibbons (2003) found that teachers can mediate language and learning in various ways. First, teachers can use students’ spoken contributions and recast them in a formal way. For example, a student who was talking about magnets

noted how they stick together or push away (p.258). To recast this student's everyday language, the teacher responded by reiterating the student's thoughts and expressing them using formal, academic language. Second, teachers can signal to students a need to reformulate. For example, when a teacher recognized the need for a student to reformulate, she indicated this to the student by saying, "...can you explain that a bit more...no you're doing fine..." (p.261). Another teacher indicating the need for reformation to a student by saying "now let's start using our scientific language..." (p.264). These examples demonstrate the importance of placing the onus on students to clarify and expand on their thinking in a way is both encouraging and makes the need for reformation clear and explicit to students.

Gibbons (2003) concluded that teachers use recasting and signaling during student teacher interactions to create linguistic bridges between students' language skills and academic language. However, important limitations of this study must be taken into consideration. Most importantly, Gibbons utilized a qualitative interpretive approach to her question. She did not examine effects of the teacher mediations on students' language or science learning, which makes it difficult to determine impacts on students. Also, the characteristics of the participants in this study, a large ELL classroom composition in an Australian school, limit the generalizability of these results to other populations. Despite limitations, this study is important for understanding how to create access to learning in science for ELLs because it suggested that teachers can effectively bridge the linguistic capabilities of ELLs through teacher to student interactions.

Other studies have also examined ways to support ELLs to engage in science talk in

socially situated contexts, specifically during inquiry activities. Haneda and Wells (2010) designed a collaborative, action research study that examined the effects of inquiry based, science talk on student learning. Their case study was a longitudinal foray into two separate science units in a fourth grade classroom during 2004 and 2006. The units featured group work with hands on and text based investigations and whole group discussion of investigations. Haneda and Wells analyzed whole group discussion to identify discourse patterns and the distribution of contributions by the teacher and students. In both years, the researchers found that the majority of the questions posed by the teacher were open ended questions that could be responded to in many ways and continuing questions that built on students' prior contributions. They also found that students engaged in conversations at a rate that closely matched teacher contributions. Importantly, they found that many ELL students were active in the discussion and made substantial contributions to the conversation that reflected their capacity to explain, hypothesize, conclude, and question independently of the teacher.

The research team attributed active participation in science talk by ELLs to various characteristics of the unit and the teacher (Haneda & Wells, 2010). The unit was based on an inquiry framework that gave students experience with student driven inquiry and second hand, text based inquiry. The discussions were based on these experiences, which prepared students with many ideas and questions to contribute to the conversation. Also, during teacher guided discussion, the researchers noted that the teacher "drew on his students' out-of-school experiences ... and made connections between their everyday knowledge and science content" (p.21). Drawing on students' funds of knowledge seemed to be a

successful way to invite students into the conversation. These strategies, in addition to the use of open ended and continuing questions posed by the teacher, are successful teacher practices that engage students with science content while also improving language skills.

However, this study is limited by a lack of analysis of the effects on student learning. Just as with the research done by Gibbons (2003), it is unclear exactly how these teacher practices affected learning. The question of how these interventions affect students' ability to perform on achievement based assessment, which is the focus for many researchers (Amaral et al, 2002; Cuevas, 2005; Lee, 2005) was unexplored by Haneda and Wells (2010) and Gibbons (2003). Nonetheless, these studies verified that ELLs can participate fully in scientific conversations when they are supported by specific teacher practices.

Researchers have also examined how students engage in science talk using their cultural experiences. Warren et al. (2001) examined the dialogue of a group of Haitian American as they engaged in small group discussions about scientific concepts. The researchers focused on a sixth grade, Haitian student as he engaged in science talk using his home language, Haitian Creole (HC). It is important to note that HC is a pidgin language and as such, is commonly considered inadequate for expressing precise, scientific ideas. The researchers arrived at two important findings based on analysis of classroom discussions. First, they found that students engaged in science talk while using HC and everyday language forms such as storytelling, joking, and challenging. The researchers suggested that the features of the classroom community created by the teachers, such as respect for home languages and encouragement of everyday modes of talking, supported students to use their home language to

engage in science talk. Second, they found that the target student's linguistic understanding of HC helped him to clarify and expand his thinking on a scientific concept. This finding provides support for the idea that students bring cultural funds of knowledge with them into the classroom that direct them to navigate scientific thinking and discussion. However, these results are limited by the small sample size and lack of exploration of the effects of science talk on learning.

Warren et al. (2001) maintained that "children's questions and their familiar ways of discussing them do not lack complexity, generativity, or precision; rather, they constitute invaluable intellectual resources which can support children as they think about and learn to explain the world around them scientifically" (p.548). Thus, this research suggests that to create access to science learning for ELLs, students must be encouraged to use the strengths that come from their everyday lives in class and teachers must recognize and value the cultural power that ELLs' possess.

The results of these studies together suggest that teachers can facilitate ELL students to use formal, scientific language, discuss scientific ideas using preferred modes of communication, and draw on their prior knowledge and experiences to participate in scientific dialogue.

Teachers' Outreach to Families

While much of the research on promoting success for ELLs has focused on what teachers can do in the classroom in terms of instructional strategies, other avenues of research have explored what teachers can do to foster connections between schools and ELLs' families. This area of research has grown from studies that have confirmed that involving students' families in the classroom has positive effects on students' academic achievement (Hill &

Tyson, 2009). Researchers have assumed that these positive effects are applicable to ELLs and have accordingly focused on identifying effective strategies specific to this population.

In this section, I will describe theoretical differences in approaches to family outreach. I will then describe studies that explore what teachers can do to create family connections. These studies need to be interpreted with caution because they operate from a paradigm that focuses on the role of teachers, who have power in the classroom (van Dijk, 1996). Thus, the following studies examine how people in power, in this case teachers, can make efforts to connect with ELLs' families. These studies do not consider the agency that students and families have in bridging the gap between home and school.

Research on teacher initiated outreach reveals theoretical differences based on categorization of approaches as traditional and/or non-traditional. Traditional outreach involves communicating with families, involving families in school activities and decisions, and providing families with ways to support students at home. In contrast, non-traditional outreach includes helping families understanding the American model of schooling, providing family education and advocacy, and promoting families to become empowered to be involved in school practices (Arias & Morillo-Campbell, 2008). These forms of outreach overlap in some areas, but generally differ in that non-traditional outreach supports families holistically rather than supporting them to be involved in their students' schooling experiences.

Some research has reflected traditional approaches to making connections with ELLs' families. Chen, Kyle, and McIntyre (2008) explored the effectiveness of professional development in which researchers worked with K-12 teachers and

administrators to support them to understand the benefits of family involvement and to identify strategies. The researchers were interested in how the professional development would affect participants' attitudes and practices. To measure change, researchers compared participants' responses on pre and post surveys. The results revealed that after professional development, teachers reported an increase in overall contacts made with families, positive feedback shared with families, and home visits. Teachers also incorporated families into the curriculum by designing projects that centered on the cultural resources of ELLs' families. The researchers concluded that this professional development was successful at promoting family outreach initiated by teachers.

Despite the program's effectiveness, the researchers measured success from the viewpoint of the teachers and administrators, as measured by self-reports. The researchers neglected to consider how this program impacted the students and their families.

Other studies reflect non-traditional aspects of family outreach (Lopez, Scribner, & Mahitivanichcha, 2001; Trumbull, Rothstein-Fisch, & Hernandez, 2003). Trumbull et al. (2003) created an action research program that focused on helping teachers to understand the cultural values of Latino families. The participants were seven elementary, bilingual teachers who had a large proportion of students whose families emigrated from Mexico. With the researchers, the participants engaged in workshops and discussion to understand the cultural concepts of collectivism and individualism that are reflected in Latino and American cultures, respectively. The researchers found that by the end of the professional development, teachers shifted from more individualistic beliefs toward being able to understand both perspectives. They also found that teachers changed in the

way that they connected with families. Many teachers exhibited increased involvement and interactions with families, a willingness to explain school culture and practices to families, and encouragement of family members to take on different roles to support their students. The researchers concluded that these changes in family outreach arose from an increase in teacher awareness of students' cultural values and practices.

The results of this research are powerful because the changes in teachers' methods of outreach occurred alongside a change in teachers' understanding of their students' culture. As a result of this growth, the teachers' actions tended to reflect more non-traditional approaches to outreach. Thus, this study suggests teachers can positively connect with increasing cultural understanding of students' background.

In a different study, Lopez et al. (2001) identified school districts with large migrant populations that were employing effective, non-traditional strategies of family contact. The researchers selected three districts in Texas and one district in Illinois that were recognized for successful outreach programs. Within each school, the researchers interviewed teachers, staff, administrators, and parents of ELLs and observed practices within the schools in an effort to identify successful practices.

The key finding from these interviews and observations was that the schools and districts "firmly believed that before any type of substantive 'involvement' could be expected of parents, they first needed to address the social, economic, and physical needs of migrant families" (Lopez, 2001, p. 261). Thus, the success of these schools in supporting ELL students and families was a keen realization that they needed to address the needs of families in holistic ways and a strong commitment towards supporting families to meet their needs. An important

finding was that because this need was recognized, teachers and staff engaged in many attempts to meet with families and gain information about their needs in the attempt to get to know their "whole life story" (p.262). Participants reported that home visits were essential for successful outreach. Findings from this study also revealed a variety of approaches to meeting the needs of families, such as providing education and training at school sites to improve literacy and awareness of parental rights and bringing in outside agencies to meet families' needs. This study is promising because it highlights the importance of meeting the needs of families as a way of fostering connections rather than merely communicating with and involving families superficially.

However, the results from both Lopez et al. (2001) Trumbull et al. (2003) are complicated by the effect of teacher characteristics. Some of these participants had life experiences as ELLs which may have affected their approach to connecting with families. Thus, the approach of increasing cultural awareness and identifying and meeting the needs of families may not be an effective strategy for teachers who have limited personal experience.

Overall, these studies suggest that teachers can successfully employ traditional and non-traditional methods to bridge the gap between school and home for families (Chen et al., 2008; Lopez et al., 2001; Trumbull et al., 2003). However, these studies do not offer insight into how either strategy impacted ELL students in the classroom. Another major limitation of these studies is that they do not explore at length how the families viewed outreach attempts. The focus is on the teachers, not the ELL students or their families. This is potentially problematic because these studies focus on teachers, who have power and agency in

schools and in classrooms. These studies do not explore how ELL students and their families can be supported to have power in schooling alongside teachers. Despite this theoretical flaw, the results of these studies offer practical strategies that teachers can use to engage ELLs' families in schooling.

Conclusion

The results of these studies suggest that to support inquiry development for ELLs, the teachers should provide explicit instruction while also allowing students freedom to explore interests and make connections to out of school experiences. Thus, teachers can guide students through inquiry and make steps of the inquiry process clear to students (Amaral et al., 2002; Cuevas et al., 2005). For example, teachers can explain the steps of inquiry, such as hypothesizing, designing experiments, collecting and analyzing data, and drawing conclusions, and guide students through each step to answer a scientific question. Teachers can also allow students to engage in inquiry that is related to students' communities (Rosebery et al., 1992). For example, teachers can support students to ask and answer questions that they deem relevant to their own communities, such as "what are differences in water quality in the school buildings and surrounding areas?". Also, it is recommended that teachers allow students to openly explore their own scientific questions (Warren et al., 2001). For example, teachers can set up inquiry experiences so that students can investigate their own questions, rather than a question predetermined and controlled by the teacher.

The results of these studies also offer strategies for teachers to guide ELLs to talk about science in ways that are authentic and mirror the form that discourse takes in scientific communities. To guide students to make connections between everyday and

academic language, teachers can utilize two important moves: recasting and signaling (Gibbons, 2003). For example, teachers can recast by paraphrasing student's ideas using academic language and signal to students that they need to clarify their ideas using academic language. Teachers can also support ELLs to participate in discussions by using open ended questions, and incorporating relevant, out of school experiences into discussions (Haneda & Wells, 2010). For example, during whole group discussion, teachers can ask questions that could be answered by all students. Teachers can also make connections to students' interests during discussion, such as incorporating students' knowledge of skateboards into a conversation about motion. Additionally, teachers can encourage students to use in their home language to discuss science (Warren et al., 2001). For example, teachers can instruct students to talk in the language they are most comfortable with. Teachers can also express value in using students' home languages to talk science.

How Can Teachers Create Bridges Between Students' School and Home Experiences?

Teachers can literally create bridges between ELLs school and home lives through family outreach. Based on the research, I recommend that teachers use a blend of traditional and non-traditional forms of family involvement. Traditional outreach practices can include open communication with families about classroom content in translated forms, the use of interpreters during conferences and home visits, invitations to families to visit the school, and invitations to the classroom to serve as cultural experts (Ariza, 2010). Non-traditional outreach practices can include getting to know families' experiences and cultural beliefs, providing

support for families to access resources and education, and discussing schooling practices and expectations (Lopez et al., 2001; Trumbull et al., 2003). Both types of practices foster connections between students' school and home lives.

Future Research

Despite these promising results regarding scientific literacy, it is unclear how these practices supported students because the researchers did not ask students how these practices affected their schooling experiences. Future research should involve participants in the research process to identify students' perceptions of the value of these approaches. Additionally, these studies did not explore the long term impacts of these approaches, thus it is unclear whether these positive effects on students' literacy continued throughout students' education. Thus, future research should explore the connection between specific approaches and students' K-12 and higher educational performance and attainment.

Similarly, in the studies that focus on family involvement, the opinions of families and students were largely ignored. Thus, it is unclear how these forms of outreach impacted families and students. Also, these studies did not explore how outreach affected students' immediate and long term impact in schooling. Future studies should address these issues and garner input from students and families.

It is critical that research on this topic carries on because the climate of our schools will continue to reflect increasing linguistic and cultural diversity. The educational community will benefit from insights on how to serve ELLs that originate from students and their families and as a corollary, ELLs will benefit as teachers incorporate these insights into their practice.

References

- Abedi, J., & Dietel, R. (2004). *Challenges in the No Child Left Behind Act for English Language Learners*. (CRESST Policy Brief No. 7). Los Angeles, CA: National Center for Research in Evaluation, Standards, and Student Testing. Retrieved from http://www.cse.ucla.edu/products/policy/cresst_policy7.pdf
- Amaral, O.M., Garrison, L., & Klentschy, M. (2002). Helping English learners increase achievement through inquiry-based science instruction. *Bilingual Research Journal*, 26(2), pp. 213-239.
- Ariza, E.N. (2010). *Not for ESOL teachers: What every classroom teacher needs to know about the linguistically, culturally, and ethnically diverse student* (2nd edition). Boston, MA: Pearson Education, Inc.
- Auerbach, E. R. (1989). Toward a social-contextual approach to family literacy. *Harvard Educational Review*, 59(2), pp. 165-181.
- Chen, C., Kyle, D.W., & McIntyre, E. (2008). Helping teachers work effectively with English language learners and their families. *The School Community Journal*, 18(1), pp. 7-20.
- Cuevas, P., Lee, O., Hart, J., & Deaktor, R. (2005). Improving science inquiry with elementary students of diverse backgrounds. *Journal of Research in Science Teaching*, 42(3), pp.337-357.
- Finn, P.J. (2009). *Literacy with an attitude: Educating working-class children in their own self-interest* (2nd ed.). Albany, NY: State University of New York Press.
- Gibbons, P. (2003). Mediating language learning: Teacher interactions with ESL students in a content-based classroom. *TESOL Quarterly*, 37(2), pp. 247-273.

- Haneda, M. & Wells, G. (2010). Learning science through dialogic inquiry: Is it beneficial for English-as-additional-language students? *International Journal of Educational Research*, 49, pp.10-21.
- Hill, N.E., & Tyson, D.F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology*, 45(3), pp.740-763.
- Lau v. Nichols, 414 U.S. 563 (1974).
- Lee, O., Deaktor, R.A., Hart, J.E., Cuevas, P., & Enders, C. (2005). An instructional intervention's impact on the science and literacy achievement of cultural and linguistically diverse elementary students. *Journal of Research in Science Teaching*, 42(8), p. 857-887.
- Lee, O., & Fradd, S.H. (1998). Science for all, including students from non-English-language backgrounds. *Educational Researcher*, 4, pp.12-21.
- Lopez, G.R., Scribner, J.D., & Mahitivanichcha, K. (2001). Redefining parental involvement: Lessons from high performing migrant impacted schools. *American Educational Research*, 38(2), pp.253-288.
- Meltzer, J., & Hamann, E.T. (2005). Meeting the literacy development needs of adolescent English language learners through content-area learning. National Clearinghouse for English Language Acquisition (2011). *Title III accountability*. Retrieved from <http://www.ncela.gwu.edu/accountability/>
- National Research Council (1996). *National Science Education Standards*. Washington: National Academy Press.
- National Science Foundation (2011). *About the national science foundation*. Retrieved from <http://www.nsf.gov/funding/>.
- Rosebery, A.S., Warren, B., & Conant, F.R. (1992). Appropriating scientific discourse: Findings from language minority classrooms. *The Journal of the Learning Sciences*, 2(1), pp.61-94.
- Siegel, M.A. (2007). Striving for equitable classroom assessments for linguistics minorities: Strategies for and effects of revising life science items. *Journal of Research in Science Teaching*, 44(6), pp.864-881.
- Sui-Chu, E.H., & Willms, J.D. (1996). Effects of Parental Involvement on Eighth-Grade Achievement. *Sociology of Education*, 69(2), pp.126-141.
- Trivetter, P., & Anderson, E. (1995). The effects of four components of parental involvement on eight-grade student achievement: Structural analysis of Nels-88 data. *School Psychology Review*, 24(2), p. 299. Retrieved from EBSCOhost.
- Trumbull, E., Rothstein-Fisch, C., & Hernandez, E. (2003). Parent involvement in schooling: According to whose values? *The School Community Journal*, 13(2), pp. 45-72.
- van Dijk, T.A. (1996). Discourse, power and access. In Carmen Rosa Caldas-Coulthard and Malcolm Coulthard (Eds.), *Texts and Practices. Readings in Critical Discourse Analysis*. (pp. 84-104). London: Routledge, 1996.
- Warren, B., Ballenger, C., Ogonowski, M., Roseberry, A.S., & Hudicourt-Barnes, J. (2001). Rethinking diversity in learning science: The logic of everyday sense-making. *Journal of Research in Science Teaching*, 38(5), pp. 529-552.
- Wellington, J. & Osborne, J. (2001). *Language and literacy in science education*. Philadelphia, PA: Open University Press.

Collaborative Learning in the Mathematics Classroom: What You Think Matters

Collaborative learning is often used in mathematics classrooms, however, it is often executed in ways that are not supportive of student learning. This review of the literature explores collaborative learning practices in the mathematics classroom and seeks to uncover what collaborative learning structures lead to in-depth learning. An additional focus is placed on the role of equity and authority in the classroom and the ways in which this affects collaborative learning. Quantitative experiments as well as qualitative case studies were examined and categorized under three domains; creating community, task and grouping decisions, and teacher actions and interventions. An analysis of the literature reveals that student and teacher views on authority often hinder the efficacy of collaborative learning. The paper goes on to explore ways in which task, grouping and intervention choices can help students transform their views on authority and develop ways of interacting that lead to in depth math learning. The paper concludes with suggestions for educators looking to implement collaborative learning in their own classroom.

Mathematics teachers all over the country are bringing collaborative learning (CL) into their classrooms, using it to supplement a text based curriculum or using it in conjunction with CL based curricula. However, effective CL requires more than simply placing students in groups and expecting them to work together. This paper seeks to identify which CL structures lead to the in-depth learning of mathematics. One would be remiss, however to address the issue of CL without addressing the issue of equity in the classroom. "Students' learning depends on how they interact with one another (Esmonde, 2009)." If interactions among students are inequitable their learning will also be inequitable. This paper, therefore also seeks to examine how different groupwork structures promote equity in the classroom and how classroom equity supports in-depth learning.

Advances in technology allow students to do easily what once required extensive procedural knowledge. A focus on transmitting procedural knowledge is no

longer necessary or sufficient for today's students (National Council of Teachers of Mathematics, 2005). Rather, what is needed is an in-depth and conceptual understanding of mathematics that allows students to be flexible thinkers. Groupwork provides students with opportunities to gain this in depth understanding of mathematics. Educators have found that CL "provides students with more opportunities to talk about mathematics, to learn from others, and to learn through teaching" (Esmonde, 2009, p. 248). Even for students whose futures don't lead them down a path that relies heavily on mathematical skills, collaborative learning in the classroom will still prove beneficial. American students in school today will grow up in a country more culturally diverse than ever before. Collaborative learning will provide them with opportunities to learn how to work and engage productively with people who may have different backgrounds from their own.

During my own student teaching experience I struggled to incorporate

groupwork in a way that benefitted all students. Participation was uneven and I found it hard to balance group and individual accountability. I tried varying group sizes, attempted different strategies for holding students accountable, and used a variety of different CL activities. In the end however all my attempts failed to lead to the in depth comprehension that I sought. A glance at the available research shows I am not the only one with these struggles and concerns. “While there is a growing consensus among researchers about the positive effects of cooperative learning... there is still a great deal of confusion and disagreement about *why* cooperative learning methods affect achievement” (Slavin, 1996, pp. 43-44).

Understanding how to make cooperative learning successful is vital. Lacking this understanding, well intentioned but misguided attempts at CL can be detrimental. Teachers ill prepared to enact CL may find students disengage as they are faced with challenging tasks and thinking required of CL. Having opened up the classroom to a more student-centered philosophy, teachers may also find themselves struggling to address student thinking as it strays from the narrow concepts presented in some textbooks, leaving some student misconceptions potentially unaddressed. Poorly structured CL also opens up the door to exacerbating status issues in the classroom (rather than addressing and relieving them) and can lead to academic loafing, where one or two students complete the work for the entire group (Cohen, 1994).

Previous research has approached CL from several theoretical perspectives. There are those that investigate collaborative learning from a social-behavioral perspective who see motivation and group identifications as key reasons why it leads to student achievement. (O’Donnell &

O’Kelly, 1994). Others view collaborative learning from a cognitive perspective, taking the position that interactions with others will lead a student to challenge their own knowledge structure (O’Donnell & O’Kelly, 1994). From a cognitive perspective CL provides students with opportunities to clarify and revise their own understanding as they interact with others and are challenged by the ideas of their peers. Still it could be argued that both perspectives provide valuable insight into the nature of learning and it is the relationship between the social and the cognitive aspects of collaborative learning that make it successful.

Research on cooperative learning is extensive and it is beyond the scope of this paper to explore every facet of it. This paper will largely ignore the theoretical *why* of effective collaborative learning as well as the debate surrounding collaborative learning curriculum in the classroom. Rather, it will focus instead on the *what* and *how*. The purpose of this paper is to provide educators with concrete, research based ideas that can be implemented in the classroom or affect the instructional decisions made by the educator. Its purpose is not to advocate one curriculum or theoretical basis over another but to provide math educators with suggestions that allow them to take ownership over the CL process and incorporate it into any classroom.

Literature Review

There seems to be agreement among educators and researchers that CL practices promote achievement in mathematics classrooms. The precise reasons for these benefits, however, remain contested. A classroom is a complex environment and the day-to-day occurrences within are influenced by a variety of factors; teaching philosophies, curricular decisions and requirements, interactions between students, student-teacher interactions as well as a host

of other variables that arise when you place 30 individuals in a room together. Researchers exploring structures for effective CL have a multitude of variables on which to focus their gaze. To help frame the research one should consider the theoretical models behind it. While the primary concern of this study is not to explore the specific theories behind what makes groupwork effective, a basic understanding of driving ideologies can still prove useful.

Theoretical perspectives on CL can be broken up into two categories: social-behavioral perspectives and cognitive perspectives. Each of these perspectives offers insight into how CL might be executed successfully and each comes with its own set of potential problems, both of which aspects shall be discussed here in brief.

Social-behavioral theorists may take either a motivational approach to groupwork or a social cohesion approach (O'Donnell & O'Kelly, 1994). Motivational approaches assert that motivation for working on a task increases when one is working with one's peers (O'Donnell & O'Kelly, 1994). This perspective, however, does not focus on the intrinsic motivations that drive students to work together but rather the extrinsic motivations. "Motivational perspectives on cooperative learning focus primarily on the reward or goal structure under which students operate" (Slavin, 1996, p. 44). Students work together because they must in order to receive the reward. Clearly there are drawbacks to structuring CL from this approach. There will always be students who are not sufficiently motivated by any reward that can be provided in a school setting.

The social cohesion perspective, while still asserting that student motivations drive achievement, focuses on the motivation students have to be a productive member of

a group. O'Donnell and O'Kelly (1994) explained "participants are thought to be motivated by a desire to help one another and not 'let others down'" (p. 331). Those approaching groupwork from this perspective emphasize the extensive training students must undergo to make learning in this manner effective. One cannot make the assumption that all students want, or even have the skills needed, to productively interact in a group.

Other researchers have taken a cognitive approach to CL. Slavin (1996) explained that cognitive perspectives hold that "interactions among students will in themselves increase student achievement for reasons which have to do with mental processing of information rather than with motivations" (p. 48). Informing the cognitive approach to group learning is Vygotsky and his ideas on the zone of proximal development. CL provides opportunities for students to work with more capable peers who are able to scaffold their learning. More experienced group members also benefit in that group work gives them the opportunity to articulate and refine their thinking while in the process of assisting others.

Recent research seems to have moved away from strictly motivational or cognitive perspectives taking into account a more holistic view of learning; one where both the motivation to learn as well as the cognitive processes behind learning are taken into account. Within this paradigm the focus is not on uncovering the one right format for CL, but rather uncovering the myriad ways to implement it well.

For this paper I intend to outline research based strategies for the successful implementation of CL under 3 domains: creating a classroom community, design and structure of groups and activities, and teacher actions and interventions. Each of these is an essential component of successful

collaborative learning yet none are sufficient in and of themselves.

Creating a Classroom Community

In a CL classroom, how students interact with each other greatly influences their learning (Esmonde, 2009). For that reason an analysis of classroom culture and how it can support or prevent equity must be a first step. Research indicates that a classroom where close attention is not paid to supporting equitable and mathematically valid interactions among students is not really employing CL practices (Boaler & Staples, 2008; Esmonde, 2009; Staples, 2007).

A discussion on creating an equitable classroom might begin by exploring the notion of authority in the classroom. Amit and Fried (2005) undertook just such an exploration. In an attempt to explore what they describe as a web of authorities within the classroom, they conducted a case study of two Israeli 8th grade math classrooms with a total of 68 students. In both classrooms lessons were videotaped and interviews were conducted with both teachers and students.

Their findings indicated that students' notions of authority affected their ability to think mathematically (Amit & Fried, 2005). This clearly has implications for CL as the whole intent behind employing groupwork is to provide students opportunities to engage in mathematical thinking. "We observed how the teacher's authority can truly create conditions in which it becomes very easy to use concepts unreflectively" (Amit & Fried, 2005, p. 160). The type of authority held by the teacher in this instance is not authority over students' actions and behavior but rather authority over the subject itself. When students see the teacher as the sole authority over the subject they neglect their own thinking and mathematics becomes purely procedural. This dynamic of

assigning authority was also found in student-to-student interactions and was equally problematic.

Amit and Fried (2005) explained:

Where students are accustomed to treating one another as authorities, one student will simply listen and assent to the other...The point is, where students are accustomed to treating one another as authorities, no true dialog takes place between them, and where there is no true dialog there can be no true collaborative learning. (p. 161)

his study does not imply that authority should be done away with in the classroom. Rather, the authors suggested nurturing a type of revised authority. Within this revised authority teachers are working with students to create colleagues and co-learners. It is a shared authority based on mutual need.

This study proves insightful in providing the reader with a vision of authority based on dialog with students. Unfortunately it provides little in the way of suggestions as to how to achieve this optimal revised authority. In fact, interviews with the teachers in the study revealed that they perceived themselves as already employing a type of revised authority despite the fact that their interactions with students reinforced their status as the sole authority of mathematical knowledge.

Esmonde (2009) also touched on the idea of authority relationships in the CL classroom with a focus on expertise, equity, and the role of task design in addressing these elements. In a year-long case study Esmonde observed three different high school math classes taught by the same teacher. The school and classes are described as large, urban, and diverse in respect to race, gender, prior achievement, and grade level. The curriculum used by this teacher was one designed to support CL

strategies. The bulk of the research was conducted by coding and analyzing taped classroom lessons with interviews, questionnaires and student work providing supplementary data.

Esmonde (2009) looked at two separate group activities and analyzed the students' interactions. The study examined how students positioned themselves as expert, novice, or facilitator and how that positioning affected their learning and the learning of their peers. This positioning was considered in relationship to observed group dynamics which were coded as "helping" (a student helps other students to solve problems), "collaborative" (students work together to solve problems) and "individualistic" (students work independently though in close proximity to each other).

The findings underscore the importance of equitable interactions between students as well as careful structuring of these interactions by the teacher. Most group interactions did not result in mathematical thinking by all group members. The most successful interactions were those where there was at least one student positioned as facilitator. However, this occurred rarely, only three times out of the 24 discrete instances of groupwork observed. Further analysis of the results indicated that most group interactions were problematic as students deferred to perceived authority. In groups where there was a student positioned as expert, the other group members deferred to their authority resulting in a "helping" dynamic. It should be noted that a helping dynamic is not ideal. In these cases, help was generally provided in the form of hints or answers without addressing underlying thinking. This type of interaction was found to be detrimental to students learning (Esmonde, 2009). In groups where there were no students positioned as expert, students turned over authority to the teacher.

None of these situations allowed students to claim ownership over their learning.

This study demonstrates a flaw in the thinking that students working with others in their zone of proximal development will be sufficient in promoting learning and highlights the need for active and ongoing structuring of group activities and interactions. Students positioned as experts in the study "did not, for the most part, act like adults...or like their own teacher. They did not actively try to understand and build from the novice's perspective" (Esmonde, 2009, p. 274).

While the prior two studies have demonstrated the struggles teachers face as they incorporate CL, the next study provides a model of what effective groupwork can look like. Staples (2007) conducted a year-long case study of a high school math class headed by an experienced teacher dedicated to CL. The class that was the focus of this study was a below grade-level 9th grade pre-algebra class. Through taped lessons, observations, and student and teacher interviews Staples explored the teaching practices that made this classroom so successful.

Staples (2007) identified several distinct teaching practices that allowed students to benefit from genuine CL opportunities. The first of these was supporting students in making contributions. "Collaborative inquiry fundamentally relies upon students making their thinking public" (Staples, 2007, p. 172). However, this can be a challenge for many students who do not position themselves as mathematically competent. By pressing and aiding students in clarifying their ideas and drawing attention to the logic in a given idea, the teacher maintained a classroom that perceived mathematical knowledge as something that is actively constructed. This shifted the notion of a contribution from an answer to an idea.

An additional element of this teacher's practice was establishing and monitoring a shared body of knowledge. By maintaining public records of the class's work, insisting upon multiple representations of concepts and ensuring a shared, solid understanding of prerequisite concepts she created an environment where students were able to "respond to and build on each other's contributions" (Staples, 2007, p. 180). This implies a focus on a shared context *among students* which differs from a traditional classroom where the common ground exists between "the teacher and individual students (Staples, 2007)."

The teacher in the study played an active role in creating a community of collaborative learners but the study found that her role did not end with establishing the setting. While Staples (2007) hypothesized that the teacher would "play a significantly less prominent role organizing collaborative work in the spring than in the fall," she found that the teacher "remained a strong presence" throughout the year (p. 205). To truly support students in collaborative inquiry, one cannot simply provide them with activities. Learners need ongoing structuring and support and by providing this the teacher opens up space for students to actively engage the learning process.

Design and Structure of Groups and Activities

As previously mentioned, the quality of students' learning relies on the quality of their interactions. To ensure quality interactions several research studies have looked at how groups are structured and have explored ways to intentionally structure groups to ensure maximum learning benefits for all members. One such study was done by Ciani, Summers, Easter and Sheldon (2008) which posed the question; "does letting students choose their

own group matter?" Ciani et al. hypothesized that "students would report more intrinsic motivation and community in classes where they could choose their groups." In investigating this they conducted a study of 544 students in seven different undergraduate college classes. All classes were taught by professors who self-reported incorporating CL into their classes, two of which allowed students to self select their groups.

Findings indicated that students' ability to choose their own group did positively impact their intrinsic motivation. However this study presented several problems, both in study design as well as conclusions drawn. A primary concern is the discrepancy in group sizes. Of the 544 participants in the study, 416 were in the choice group. The results also bring up questions regarding the purpose of groupwork and how to measure success. It seems evident that students would report more positive interactions if they were only ever called upon to work with people they already felt an affinity towards. But often times, individuals are drawn to those who share their ideas and ways of thinking. If students remained in groups with only those who shared their perspective, they would lose exposure to new ideas and the opportunity to expand their thinking, key elements of CL.

Despite problematic elements of the study, Ciani et al (2008). reminded us that students do enjoy working with friends and may in fact be additionally motivated by doing so. While the study is insufficient in arguing that students should always be allowed to self select their groups, there is enough evidence to conclude that providing students with opportunities to choose their own groups may at times be a productive option.

Schmitz and Winskel (2008) also turned their attention to the subject of group

formations in CL. Their study was designed to investigate “how to best facilitate CL in the classroom through (1) partnering children with different task-specific abilities and (2) assigning or not assigning helping roles within the dyads” (p. 582). The students that comprised the focus of the study were 57 Sixth year students in an Australian primary school. Drawing from previous research that indicated that students who engage in specific types of dialog termed “exploratory talk” demonstrate greater gains in learning than those who don’t, Schmitz and Winskel (2008) measured success of the pairing arrangements in their study by considering instances of exploratory talk. Exploratory talk was defined as instances where “partners are able to disagree with one another’s ideas while suggesting a positive, alternative solution” (p. 583) and Schmitz and Winskel used a set of key words such as “because”, “I think”, “if”, and “why” to identify instances of exploratory talk.

Students were given a task-specific pre assessment then arranged into dyads which were either low-high ability or low-middle ability. They dyads were then further divided into groups which received helper/learner roles assigned to them and those that were simply asked to “work together.” The study revealed that in all instances the low-middle dyads used more exploratory talk than did the low-high groups. Also revealed was the assigning of roles did little to impact instances of exploratory talk in the low-middle pairings. However, in the low-high pairings, assigning the helper/learner roles almost doubled instances of exploratory talk.

While this study encompassed only one classroom over one day it nonetheless attempted to back up some interesting ideas on what makes an effective CL pair. “More symmetrical partnerships, such as the low-middle dyad allows for both students to

present their points of view and constructively question each other’s ideas” (Schmitz & Winskel, 2008, p.591). In pairings with large ability gaps, the ability to question, critique and explore in a way that benefitted both students was minimized. However, the study also found that while the assigning of roles did little for the low-middle groups, it had a significant impact on the low-high groups, bringing their rates of exploratory talk nearly to the level of the low-middle groups (Schmitz & Winskel, 2008). This implies that teachers have a degree of flexibility in making grouping decisions. While symmetrical groupings may at times be ideal, with a little extra preparation students may benefit from working with peers with a substantial difference in task specific abilities.

Structuring Tasks.

Along with having control over grouping decisions, teachers also have control over the structure of the tasks and activities in which students engage. Researchers have looked at jigsaw activities, team exams and group projects to examine the potential they have in supporting CL.

Souvignier and Kronenberger (2007) looked at the use of jigsaw exercises in elementary school classrooms. Their study compared jigsaw activities with and without questioning training to teacher directed instruction. A pre and post test as well as a delayed post test was administered to 208 students in nine different classrooms and the results showed very little difference among groups. Students in both of the cooperative learning groups demonstrated gains similar to those in the teacher-directed classrooms. Souvignier and Kronenberger noted that these findings are similar to studies done on jigsaw in the past, yet they were still surprised to find that the addition of questioning training did little to change the success of the jigsaw method, for better or

worse. Still, Souvignier and Kronenberger considered jigsaw a potentially useful strategy to incorporate into a CL classroom. They commented that “taking into account that cooperative learning in a team and presentation of one’s knowledge as an expert are valuable learning objectives in themselves, this seems to be sufficient justification for the integration of jigsaw in the educational programme” (Souvignier and Kronenberger, 2007, p. 766).

Esmonde (2009) while exploring equity in the classroom also looked at how the groupwork activity itself shaped student interactions. Esmonde examined the effectiveness of group exams as well as group presentations and found no indication that the structure of the activity in and of itself promoted equity or learning in the classroom. While the structure of the activity had the potential to promote or discourage interdependence, students’ ability to interact positively with their peers played a large part in determining the direction the activities took. Esmonde (2009) concluded that “it would be a misinterpretation of the analysis here to suggest that there is one best model of group interaction...that all students should take up” (p. 275). The research has thus far failed to uncover any “best” model for CL. Rather, a strategy for successful groupwork must take into account the students and teacher and the context of the classroom.

With an understanding that teachers likely adapt instructional models to fit their own classrooms and teaching styles, Seigel (2005) undertook a case study of an 8th grade math teacher to examine “the teacher’s personal definition of cooperative learning and the enactment of cooperative learning in his classroom according to that definition” (p. 339). Seigel noted that the teacher incorporated the elements of CL in a way consistent with his training while making adjustments based on the class he

was teaching. Seigel concluded that when trained specifically in a particular model, teachers can enact that model in a way that, despite adaptations, largely remains faithful the research based model. Unfortunately, Seigel’s study revealed ways in which the teacher’s perception of CL in general interfered with his ability to utilize it for the benefit of all students. Most notable, the teacher in this case study used his CL model only with his grade level and advanced class, choosing not to use CL with his remedial math students. Furthermore, he utilized CL to a greater extent in his advanced classes. “He admitted that he had less confidence in the ability of students in the general mathematics classes and suggested that he subsequently felt a need to use teacher-led instruction methods for review in those classes (Seigel, 2005, p. 346).” This study also underscored a pattern of behavior evidenced in the Amit and Fried (2005) study. In both instances teachers believed themselves to be using CL in their classroom but did so in a way that only attended to its surface elements.

This is a pattern in the research noted and addressed by Emmer and Gerwels (2002) and they too turned their attention to the ways teachers implement CL rather than focusing solely on the model being used. They observed 18 teachers in seven schools over a period of several months. All of the teachers in the study had used CL in the past for lengths ranging from three to 15 years. They sorted lessons into groups of high, moderate, and low success using “criteria that reflect commonly cited goals of cooperative learning in much of the literature: student on-task rates, extent of cooperation, and performance” (Emmer and Gerwels, 2002, p. 79). They then looked for patterns to distinguish the more successful lessons from those that were less successful. Their findings uncovered several classroom elements present in the successful lessons

and lacking in unsuccessful ones. The most prominent indicators of success were high student accountability, high levels of teacher monitoring, and increased and timely feedback to students (Emmer and Gerwels, 2002). They found several elements that had little impact on the success of the lesson which were surprising given their prominence in the existing literature on CL. These included the assigning of group roles, task or role interdependence, and decisions on group size.

Emmer and Gerwels (2002) concluded that a teacher's main concern is students' growth and performance rather than the fidelity with which they implement a particular model of CL. Furthermore, they implied that teachers should be given the freedom to implement CL in ways that benefit their students. This group of studies examining the ways in which teachers implement CL indicate that there is a great deal of variability. Perhaps an arena for further research would include teacher attitudes surrounding the nature and purpose of CL and how that might impact student achievement as well as their implementation on CL in their particular classroom.

Teacher/Student Interactions

A final variable in CL is the quality and nature of teacher/student interactions. As emphasized previously, a teacher's role in a CL classroom involves more than simply putting students in groups or assigning a task. Teachers must inevitably teach, but what that looks like in a CL environment differs from the traditional teacher-centered classroom.

Dekker and Elshout-Mohr (2004) examined teacher interventions during CL exercises and attempted to quantify the effect of different interactions on students' math ability level. They distinguished between process help interventions (those designed to aid student in working

collaboratively) and product help interventions (those concerned with groups' mathematical reasoning and end product) and hypothesized that the process help interventions would have a greater effect on student achievement. The authors confirmed their hypothesis and gained additional insight into who was benefitting from each type of interaction. They found that groups in the process help condition saw similar gains in the scores of most of the participants where in the product help group some students saw gains in their scores while the scores of other students decreased. This echoes findings from other studies that indicate when not properly structured, CL can lead to gains for those who have previously experienced success with the concept while leaving others behind (Esmonde, 2009; O'Donnell & O'Kelly 1994; Slavin, 1996).

While this study proved useful in connecting interventions in groupwork to math achievement scores, there were several drawbacks in the study design. The sample size was small, with only 35 participants. Researchers also chose to have the regular classroom teacher provide the help in the product intervention group but they themselves provided the help in the process intervention group. This was meant to control for errors a teacher might make in providing a type of assistance that they are not used to utilizing but also opens up the possibility that students performed differently due to the attention of an outside element in the classroom.

Ding, Piccolo, Kulm, and Xiaobao (2007) also turned their attention to teacher interventions in CL classrooms but also on a regrettably small scale. They videotaped six different teachers teaching the same lesson in classrooms that employed CL methods. The study focused on length, frequency and type (individual student, small group or whole class) of intervention and attempted

to connect these to the quality of the intervention. To gauge quality they determined the degree to which each intervention met three criteria: did the intervention focus on the learning goal, did it promote student thinking and did it encourage high level peer discussion. In regards to intervention length, Ding et al. (2007) found “no absolute rules” that would mark a quality interaction. Teachers in the study used both quick response as well as prolonged response forms of feedback and both resulted in varying degrees of quality. In terms of frequency, the study found that frequent interventions were important for quality interventions. Lastly, regarding type of interaction, they noted that the most quality interactions addressed student thinking, regardless of whether this was at an individual, small group or whole class level. They suggested balance in utilizing interventions and stress that regardless of the form the intervention takes, it should always be done with a focus on student mathematical thinking. This conflicts with the Dekker and Elshout-Mohr (2004) study which suggested that interventions focused on student interactions rather than their thinking are more productive. However the Ding et al. study is more compelling in that it echoes findings from previous studies. That is, it emphasizes a focus on student mathematical thinking, a determination supported by Staples (2007), Boaler and Staples (2008) and Amit and Fried (2005).

Summary

It can be tempting to think of the teacher’s role as minimized in child-centered classrooms. When lacking a clear understanding of what collaborative learning is and how it works, the teacher’s role is reduced to establishing norms and handing out work sheets. However, this body of research demonstrates that quite the opposite is required. The success of CL depends on

students’ ability to express, critique, understand and expand upon mathematical ideas and concepts. But these are not skills and abilities most students inherently possess. Much of the learning in a CL classroom includes learning these skills. While it is up to students to construct their understanding of mathematics, the teacher plays a vital and ongoing role in teaching them how to do so.

From these studies we see that elements like group size and activity type are subordinate to how students interact with each other and the math. For effective CL a teacher has great leeway in how they structure these elements, but no matter how they do so, their decisions must support equity in the classroom and address students’ mathematical reasoning.

Conclusion

The previously discussed studies make evident that the subject of CL is complex and multifaceted. The questions posed at the beginning of this paper asked what collaborative learning structures lead to in-depth learning and what the relationship is between learning and classroom equity. A review of the literature suggests that what structures a teacher uses are not as important as their views on authority and equity. However, this is not to say that teachers cannot develop useful strategies to promote cooperative learning.

CL promotes in depth math learning because it gives students opportunities to co-construct knowledge. Students talk about their ideas, listen to the ideas of others and in doing so challenge their own ideas and those of their peers. This is powerful because it gives students authentic mathematical experiences. As students are posing solutions to problems, defending or modifying their thinking and interrogating the thinking of others they are engaging in what is similar to the practice of writing and

engaging with mathematical proofs. Through collaborative learning they are, in essence, acting and thinking like mathematicians. These benefits, however, are dependent on classroom equity. Without a strong classroom culture that actively incorporates the voice of every student, every student loses out on the opportunity to have their ideas explored and every student loses out on the opportunity to learn from the ideas of others. Recommendations for teacher practices must take into account practices that promote classroom equity.

The first of such suggestions is the delegation of authority to students. This is supported by Amit and Freid (2005) who maintained that students must position themselves as mathematical authorities before they can engage in the reflective thinking that leads to strong learning. The Esmonde (2009) study also echoed this finding by noting how students who haven't positioned themselves as mathematically capable will look to teachers or peers to do the thinking for them. For students to fully engage in the construction of knowledge they must position themselves as mathematically capable. When teachers position themselves, explicitly or through classroom practices, as the classroom authority, the research suggests that students will be less likely to see themselves as capable agents of their own learning.

A second suggestion is the active, participatory facilitation of students' mathematical thinking. Schmitz and Winskel (2008) pointed out the importance of having students engage in exploratory mathematical dialog and Staples (2007) highlighted the importance of ongoing guiding of students' mathematical interactions. When looked at as a whole, several studies indicate that teachers have flexibility in how they structure and facilitate these interactions. Work done in heterogeneous pairings can lead to high

quality interactions and with a small amount of student training this can be done even with large disparities in students' task specific abilities (Schmitz & Winskel, 2008). Jigsaw activities, group exams and group projects are also easy, research based ways for teachers to incorporate CL in their classroom (Souvignier & Kronenberger, 2007; Esmonde, 2009). All of these can be incorporated successfully given that teachers remain active in monitoring and guiding thinking and interactions by providing frequent and timely feedback that addresses both mathematical thinking and group interactions (Emmer & Gerwels, 2002; Dekker & Elshout-Mohr, 2004; Ding et al., 2007).

A final suggestion is to be cautious of the tendency to assume that "high ability" students can tutor "low ability" peers. This is an oversimplification of heterogeneous learning and can be damaging to students. Experts in the field explain that heterogeneous groups benefit students of all ability levels. Explaining one's thinking as well as taking in the ideas of others are both valuable ways of learning. However this dynamic can be misapplied by assigning one student to "tutor" another student. This is problematic. It hinders the building of equity in the classroom. As one student is positioned as authority over the thinking of another, it reinforces the very notion of authority in the classroom; a notion which CL must seek to break down for learning to occur. Perhaps more importantly, assigning student to act as tutors for other students ignores the fact that students are not adults. The research shows that most students will not naturally address the misconceptions of their peers nor will they build on their prior knowledge. Relying on students to tutor each other can result in "helping" behaviors like doing the work for another student or providing answers (Esmonde, 2009). This is not an argument against heterogeneous

grouping. Rather, the suggestion is to develop an accurate understanding of why and how CL works. Students should work with more and less experienced peers and should be encouraged to see each other as resources. However, this should not be reduced to a simplistic “peer tutoring” dynamic.

An emergent theme in these studies is the importance of teacher conceptions. A teacher’s views on learning generally and collaborative learning specifically will impact how they enact CL in their classroom. This can lead to beneficial or detrimental groupwork experiences for students. Further research might include an exploration of teacher attitudes when enacting groupwork and the effect of said attitudes on student learning. Additionally, the body of research on CL might benefit from an investigation of teacher trainings on CL and the manner in which they address not only CL methods but also teacher’s attitudes and conceptions surrounding group learning.

References

- Amit, M., & Fried, M. N. (2005). Authority and Authority Relations in Mathematics Education: A View from an 8th Grade Classroom. *Educational Studies in Mathematics*, 58(2), 145-168.
- Boaler, J., & Staples, M. (2008). Creating Mathematical Futures through an Equitable Teaching Approach: The Case of Railside School. *Teachers College Record*, 110(3), 608-645.
- Ciani, K. D., Summers, J. J., Easter, M. A., & Sheldon, K. M. (2008). Collaborative Learning and Positive Experiences: Does Letting Students Choose Their Own Groups Matter?. *Educational Psychology*, 28(6), 627-641.
- Cohen, E. G. (1994). *Designing groupwork: strategies for the heterogeneous classroom*. New York, NY: Teachers College Press.
- Dekker, R., & Elshout-Mohr, M. (2004). Teacher interventions aimed at mathematical level raising during collaborative learning. *Educational Studies in Mathematics*, 56, 39-65.
- Ding, M., Piccolo, D., Kulm, G., & Xiaobao, L. (2007). Teacher Interventions in Cooperative-Learning Mathematics Classes. *Journal of Educational Research*, 100(3), 162-175.
- Emmer, E. T., & Gerwels, M. (2002). Cooperative Learning in Elementary Classrooms: Teaching Practices and Lesson Characteristics. *Elementary School Journal*, 103(1), 75-91.
- Esmonde, I. (2009). Mathematics Learning in Groups: Analyzing Equity in Two Cooperative Activity Structures. *Journal of the Learning Sciences*, 18(2), 247-284.
- National Council of Teachers of Mathematics. (2005). Computation, Calculators, and Common Sense . *A Position of the National Council of Teachers of Mathematics*. Retrieved from http://www.nctm.org/uploaded/Files/About_NCTM/Position_Statements/computation.pdf
- O'Donnell, A., & O'Kelly, J. (1994). Learning from peers: Beyond the rhetoric of positive results. *Educational Psychology Review*, 6(4), 321.
- Schmitz, M., & Winskel, H. (2008). Towards effective partnerships in a collaborative problem-solving task. *British Journal of Educational Psychology*, 78(4), 581-596.
- Siegel, C. (2005). *Implementing a Research-Based Model of Cooperative Learning*.

- Journal of Educational Research*, 98(6), 339-349.
- Slavin, R. E. (1996). Research on cooperative learning and achievement: What we know, what we need to know. *Contemporary Educational Psychology*, 21(1), 43-69.
- Souvignier, E., & Kronenberger, J. (2007). Cooperative learning in third graders' jigsaw groups for mathematics and science with and without questioning training. *British Journal of Educational Psychology*, 77(4), 755-771.
- Staples, M. (2007). Supporting Whole-class Collaborative Inquiry in a Secondary Mathematics Classroom. *Cognition & Instruction*, 25(2/3), 161-217.

Correlations Between Multicultural Education and Ethnic Identity Formation

This analysis sought to investigate how research on adolescent ethnic identity formation can support multicultural teaching practices. The studies concentrated on aspects of ethnic identity. Participants in the studies were primarily high school aged adolescents of various ethnic backgrounds. Survey and interview-based ethnographic studies showed that an affirmed ethnic identity status can be linked to higher levels of self-esteem, while negative attitudes towards ethnic identity can be correlated with lower levels of self-esteem. Ethnic identity resolution was linked to the confidence to use proactive strategies for coping with discrimination and racial prejudice. Studies also found ethnic identity to be a factor in academic identity and success primarily in Latino and African American adolescents. Largely, the limitations of these studies are related to their scope and context, which is often too specific to generalize the results to any one population. Recommendations for practice include inviting students' primary language into the classroom, classroom discussion of personal experiences with bias and discrimination, and the inclusion of multicultural literature as an entry point to discussions on prejudice. Further research that deliberately integrates multicultural pedagogy and ethnic identity research into practice is recommended.

The rationale for this study emerged while teaching a unit on Augusto Boal's "Theatre of the Oppressed" during my work as a teacher intern. The unit featured conversations on the nature of oppression, institutional racism, social construction of identity, and stereotypes. The majority of the students of color showed a reluctance to contribute to these conversations. These were students who otherwise exhibited a high level of engagement in class. Several African-American students were deeply engaged in these discussions until the conversation turned to issues of race and racial oppression. These students seemed to be withdrawn or unprepared to discuss race in the context of a class that was largely made up of White students. I found myself wondering how I could facilitate a classroom environment where these students would be willing to engage with issues of race in a classroom context such as this.

I wondered if the silence on the part of these students was a result of an underdeveloped sense of identity. Did being in a predominantly White classroom make them feel oppressed or reluctant to make their experiences as people of color a topic of

conversation? Was I making an incorrect assumption in thinking that these students had a clear concept of their own racial identification? As I started to do preliminary research on the topic in response to these questions, the concept of ethnic identity emerged. I started to wonder if supporting ethnic identity development could be a way of engaging students from diverse backgrounds in discussions of oppression and race. In ethnic identity development, I also saw a potential for creating transformative teaching experiences and fostering an empowering school culture. Conversely, I wondered if multicultural education as an entry point to discussions of race and prejudice was capable of supporting and embracing the development of ethnic identity in all adolescents. Upon considering these topics, I was left with the following question: What relationships exist between ethnic identity formation in adolescents and multicultural teaching practices?

For the sake of this study, ethnic identity is defined as a "sense of belonging or attachment to one's own ethnic group" (Azmitia, Syed, & Radmacher, 2008). Ethnicity is also defined as a group of individuals who share a common ancestral heritage (Brown, 2010). For

the sake of this study, ethnic identity formation refers to every student's connection to their ancestry, language, and culture. This study makes a distinction between the terms 'ethnic identity' and 'racial identity'. Although the terms are seemingly interchangeable in the literature, it is important for the sake of this study to regard these as two different terms in order to observe the institutional and socially-constructed nature of race.

This literature review is valuable to the educational community in its attempts to link the positive impacts of ethnic identity formation to the framework of multicultural education. Discussion of ethnic identity in the classroom has the potential to serve as a powerful entry point to topics of race, racism, prejudice, and equality. On the other hand, a discussion on ethnic identity may prove to be alienating or oppositional to students of European descent, who typically do not have a strong connection to their ancestry or ethnicity and prefer the racial label of 'White' (Branch, Tayal, & Triplett, 2000; Rich & Cargile, 2004). Many White students respond defensively when confronted with what they deem as negative connotations of Whiteness (Rich & Cargile, 2004). Nevertheless, the topic of ethnicity, can allow students to navigate away from the inequalities and discrimination associated with racial identity, which is more a product of laws and policies than of heritage and ancestry. This, in turn, may allow students to look at racial labels from an abstract point of view, rather than as a facet of identity. Multicultural educators may use discussion of ethnic identity as an opportunity to integrate Banks' (2004) dimensions of multicultural education, such as prejudice reduction and equity pedagogy, into the classroom community. Lastly, the documented benefits of ethnic identity formation upon individual self-esteem and academic performance make this topic of interest to the educational community, overall.

Ethnic identity is not without its critics. One criticism in America relates to cultural assimilation and American identity. The doctrine of "patriotic assimilation" called for immigrants to drop their religion, food,

traditional music, and ethnic identity, in favor of a core set of American patriotic values (Fonte, 2000). Critics from this school may make the argument that American identity is more important than individual ethnic identity. This criticism spills over to multicultural education as well, with many critics asserting that multicultural education is divisive because of its concentration on cultural diversity, rather than dominant American culture. This criticism is reinforced by traditional schools and mainstream educators who have adopted a policy of "colorblindness" towards multicultural issues. According to Wakefield and Hudley (2007), there is also a certain degree of dispute about the mechanisms that cause adolescents to move through the stages of ethnic identity development. Some suggest that adolescents of color develop ethnic identity as a result of encounters with racism and prejudice, while others suggest that ethnic identity formation is an inherent part of adolescent cognitive development. Lastly, there is a lack of consensus in the literature as to whether or not ethnic identity should apply to people of European descent. Many studies are done without White-identified participants, or with a White control group that does not factor into the final analysis to any significant degree.

The intent of this paper is to explore and examine the relationships between multicultural education and ethnic identity, as well as to ponder whether or not educators and students could benefit from a multicultural curriculum that addresses ethnic identity formation. In regards to professional literature, multicultural education studies and ethnic identity studies do not often intersect in a direct and explicit manner. The literature on ethnic identity development is not typically anchored in educational discourse. Ethnic identity studies commonly focus on the lived experiences of adolescents of a particular ethnicity or ethnicities. These studies tend to concentrate on students' experiences with their peers, the school administration, and their teachers. Ethnic identity studies seemingly do not integrate ethnicity with pedagogical practice. Instead, many of these studies discuss ethnic

identity in relation to self-esteem or strategies for coping with discrimination and prejudice.

Much of the applicable literature on multicultural education and ethnicity concentrates on specific teaching methods and pedagogical frameworks. There are connections to be made between these two strands of research, but there is little research combining the two. This paper approaches the professional literature with the intent to find relationships between the two strands of research. Based upon a synthesis of the literature and a discussion of its relationship to the dimensions of multicultural education, the conclusion will make pedagogical and research recommendations.

As a means of proposing implications for the classroom and possibilities for further study, this qualitative meta-analysis does seek to synthesize some of the available literature on ethnic identity formation and multicultural education. However, it is neither the intent nor the scope of this study to integrate these two areas into any concrete theory or methodology. Analysis or creation of curriculum that incorporates ethnic identity development into a multicultural education framework is also outside the limitations of this study.

Literature Review

These studies were gathered from a search that employed electronic databases, the reference library at The Evergreen State College, Olympia, as well as the ILLiad inter-library loan system. The initial search terms “multicultural education” and “antiracist education” were used in the early stages of the search. From this first wave of searches, the phrases “ethnic identity” and “racial identity” emerged. The search continued by consulting *The Encyclopedia of Identity* (see Brown, 2010) for entries on “race” and “ethnicity.” The final round of searches employed the search terms “ethnic identity,” “ethnic identity formation,” and “multicultural education” to identify possible studies. The term “antiracist education” was excluded because the term is increasingly associated with European studies, placing many studies out of context. This qualitative meta-

analysis employed the following electronic databases: JSTOR, Academic Search Complete, and EBSCOhost.

The studies in this review are divided into two separate groups: (1) ethnicity and ethnic identity formation and (2) ethnicity and education. The first category contains studies on the correlations between ethnic identity development and psychological well-being. The second category examines ethnic identity and how it influences student academic identity and student interaction with teachers, school administrators, and ethnic peers.

Ethnicity and Ethnic Identity Formation

The following studies revolve around ethnicity and ethnic identity formation. According to Umana-Taylor, Vargas-Chanes, Garcia & Gonzales-Backen (2008), the field of ethnic identity research was originally informed by two theoretical frameworks: Erikson's theory of ego identity formation and Tajfel's social identity theory. The theory of ego identity formation asserts that ego identity is formulated through a continuous cycle of exploration and resolution of crises over the course of one's life. The theory of ego identity formation concentrates on the processes by which identities are formed. Social identity theory states that one's identity revolves around a sense of group membership and group identity. Tajfel's social identity theory concentrates on whether individuals feel positive or negative about their conception of identity. These theoretical frameworks originally focused upon general identity development, but have been applied to the field of ethnic identity formation as an extension of the existing knowledge base.

Phinney (1989) identifies three separate theoretical components of ethnic identity formation: exploration, resolution, and affirmation. Exploration in this context refers to individuals exploring various different identity components and options. Resolution, in the context of ethnic identity, describes an individual's understanding of their own ethnic identity and what role it plays in their own life. When resolution is high, it provides individuals with a sense of confidence and commitment in

their choices and views on the meaning of ethnicity in their lives. Affirmation describes the level to which individuals feel positively or negatively about their own ethnic group membership.

Self-esteem is commonly associated with psychological well-being and academic success. Phinney (1989) examined the relation between ethnicity and the cultivation of self-esteem. This study examined 91 American-born 10th graders from high schools in the metropolitan Los Angeles area. The sample consisted of 14 Asian-Americans, 25 African-Americans, 25 Latinos, and 27 Whites. Each adolescent was asked to answer 20 questions related to the exploration of ethnicity. Each of the 20 questions was rated on a four-point scale, ranging from "Not at all true about me" to "Very true about me."

The study found evidence of four stages of ethnic identity formation: diffusion, foreclosure, moratorium, and achievement. Diffusion status is defined by little or no exploration of one's ethnicity and no clear understanding of the issues; foreclosure status is described by little or no exploration of one's ethnicity, but apparent clarity about one's own ethnicity; moratorium status is evidenced by ethnic identity exploration, accompanied by some confusion about the meaning of one's own ethnicity; achievement status is evidenced by ethnic identity exploration that is accompanied by a clear and secure understanding and acceptance of one's own ethnicity. While age has not proven to be a clear indicator of ethnic identity status, the assumption is that adolescents will directionally move through the stages over the course of their teens and early-twenties. These four ethnic identity statuses are a consistent feature of ethnic identity research and are referenced frequently.

Nearly all of the 64 subjects who identified as people of color were reliably placed within one of three stages of ethnic development: a combined diffusion/foreclosure category, moratorium, and achievement (pp. 41-43). The results showed that the African-American, Latino, and Asian-American groups were essentially distributed between the three

groups in the same manner with about 55% of the group in the diffusion/foreclosure category, with the remaining 40% placing evenly in the moratorium and achievement categories (p. 43).

The importance of this study is derived from its articulation of the processes of ethnic identity formation. This study demonstrated a directional relationship between ego identity and the ethnic identity stages, with the ego and adjustment scores increasing consistently from the first to third stages; however, the author emphasizes the need for further research to confirm the existence of this relationship. Findings suggested that the process of ethnic identity formation, not ethnic group membership, per se, is a key factor in understanding self-esteem and adjustment of youth of color. This study establishes an empirical rationale for the stages of ethnic identity development. The sample for the study is rather small and localized to one area. The author acknowledges this fact and calls into question the ability to extend the results to the general population.

Branch et al. (2000) examined the connection between ethnic identity and positive attributes, such as self-esteem and psychological adjustment. The research incorporated factors of age, ethnicity, and ego identity status. The sample in this study consisted of 249 subjects, with 51 African-American, 54 Asian/Asian-American, 51 Euro-American, 54 Latino/Hispanic, and 38 who identified as "Other." The participants were measured using Phinney's Multigroup Ethnic Identity Measure (MEIM), along with a Likert-type measure called the Extended Object Measure of Identity Measure (EOMEIS). This study found that subjects in the 13-19 year old range were more likely to be in the moratorium stage than older subjects in the 24-26 year old range; neither group was more likely to be in the achievement phase. This suggests that ethnic identity status may not be directionally related to age, contrary to what Phinney (1989) previously proposed.

This study suggests that people of color tend to think of themselves in terms of ethnicity more than Euro-Americans. The study also

shows that adolescents in the 13-19 year old range are more likely to be in the middle of finding out about their ethnic background and figuring out what that means to them. This suggests that high school students of color are likely to be in the process of exploring an ethnic identity.

A lack of scope or focus was evident in the authors' use of the data as a means of proving three separate hypotheses regarding the relationship between age, ethnicity, and ego identity status. None of the three hypotheses were fully confirmed or denied by the data. The intent or implication of the study was unclear. Another problem with this study was the misconception that ethnic identity formation was a concept that really only concerned people of color. In this sense, this study upholds a trend of disregarding data from White identified subjects, or excluding them from the discussion of ethnic identity development altogether.

The correlation between ethnic identity and self-esteem is complicated. Because an adolescent has an established sense of ethnic identity does not necessarily mean that they will have a corresponding high level of self-esteem. Umana-Taylor et al. (2008) explored the relationship between ethnic identity and self-esteem in Latino adolescents. This was a longitudinal study with a sample of 323 participants attending five high schools in Illinois. The data was collected by using a 17 item Ethnic Identity Score (EIS) scale, a measure for proactive coping strategies for discrimination, and a 10 item Self-Esteem Scale. The EIS measure was developed as a response to inaccuracies that have been observed in Phinney's MEIM measurement. Researchers cite the MEIM's use of a composite score for the three components of identity as problematic.

Ethnic identity was found to be a predictor of proactive coping among individuals with a high level of ethnic identity resolution, i.e., understanding and commitment to their ethnicity. Exploration and achievement, the other two components of ethnic identity, were not found to be a predictor of proactive coping strategies for dealing with discrimination. Furthermore, the authors

reason that students without a sense of resolution about their ethnicity may not develop the skills or have the confidence to use more proactive strategies (p.40). Developing proactive coping strategies for discrimination is believed to have a positive effect on self-esteem and overall well-being (p. 42).

The question of context and sample size threatens the validity of this study. A larger sample may have found different results. This sample also grouped several diverse ethnic groups under the banner of Latino. A sample of only Mexicans or only Cubans may have shown different results. However, the longitudinal nature of the study provides a solid foundation in terms of a rationale for future research.

In addition to ethnic identity, Americans have another identity to navigate on a daily basis: national identity. Some Americans consider their national identity to be the only identity that they can relate to while others feel that to adopt an American identity denies their own culture and heritage. Phinney et al. (1997) studied ethnic and national identity as predictors of self-esteem among African American, Latino, and White adolescents. This study used the 10-item Rosenberg (1986) global self-esteem scale to measure the self-esteem levels of the participants. The participants in this study were 669 American-born high school students from ethnically diverse schools in undisclosed locations. All participants came from schools that were predominantly African American, predominantly Latino, or a majority of the two.

The strength of this study resided in data that showed a direct correlation between an adolescent's level of ethnic identity and their level of self-esteem. Adolescents with negative attitudes towards their ethnicity and those who were unclear or uncommitted to their ethnicity indicated lower levels of self-esteem. The results also showed that it was the individual's attitudes and understanding of their own ethnic group that influenced their level of self-esteem; other people viewing their group negatively did not necessarily have an effect. American identity strongly predicted self-esteem for White adolescents, but not the other two groups.

American identity was shown to be a facet of ethnic identity for many of the White participants.

The study may have made drawn some invalid conclusions. The authors point out that it is possible that high self-esteem is a predictor of group identity, rather than the other way around. The direction of the effect is not determined in these correlations, which leaves a degree of skepticism about the results. Further research would need to be conducted in varied contexts, in order to confirm that the results of this study are viable.

Ethnic identity is both affected and reinforced by social context. Adolescents' opinions about their own ethnicity are greatly affected by their relationships to their school peers, their ethnic peers and their cultural community. Azmitia et al. (2008) took a different approach to examining ethnic identity. This study used qualitative methods to examine adolescents' construction of ethnicity and ethnic identity. The researchers interviewed students from two New York City urban public high schools located in the same neighborhood. The majority of these students were Puerto Rican, Dominican, Asian American (primarily Chinese American), and African American. Both schools had only 1-2% White students. The findings suggested that the consequences of ethnic identity development can vary by social context. Puerto Rican students, for example, were considered by their peers to be the "coolest students" and their place on the social hierarchy was both affected by and a result of their sense of ethnic identity (p. 65). While African American students—unlike their peers from other ethnic groups—based their sense of ethnic identity on how they would like to be seen by the rest of the world, rather than being seen in contrast to another ethnic group. African American students aspired to be seen as role models and intellectuals rather than being associated with a stereotype. The researchers found that subjects who cultivated and maintained a sense of pride about their ethnicity despite a negative or bias climate for doing so—such as the Dominican American students in this study—were more confident and

psychologically adjusted than adolescents like the Puerto Rican students in this study, who benefited from a privileged ethnic identity and social status.

This study provided an interesting look into ethnic identity development by using student voice to capture things that cannot be seen in a quantitative study. This might be the study's only real flaw. The findings of this study are not shown in composite ethnic identity scores and cannot be expressed in the same terms as many of the other studies in this field. This study's concentration on a specific context is also a limiting factor of this study. Future researchers may be challenged to find a similar context in another city.

When looking at the relationship between multicultural education and ethnic identity formation, the research reviewed above shows that there are benefits to helping students develop a positive view and confident connection to their culture and heritage. The literature shows that adolescents are generally in the often confusing process of exploring their ethnic identity. This period of exploration helps identify one possible area where educators could support adolescent development, well-being, and self-esteem through the inclusion of multiple cultures and heritages in the curriculum.

Ethnic identity research has shown many correlations between how adolescents feel about their heritage and how they feel about themselves. However, the mechanisms behind why these correlations exist are still rather unclear. The strength in this body of research lies in the fact that such a large portion of it is concerned with the ethnic identity development of school-age adolescents. This commonality positions ethnic identity research as a field of study that overlaps with educational research. The next section deals with intersections between ethnic identity, education, and schooling.

Ethnicity and Education

Ethnicity has an effect upon one's education and vice versa. Ethnic identity influences the ways in which adolescents form

their social and academic identity (McNamara Horvat & Lewis, 2003; Nasir, McLaughlin, & Jones, 2009). Student ethnic identity is also a factor in unfair treatment from teachers, administrators, and peers (Alvarez McHatton, Shaunessy, Hughes, Brice, & Ratliff, 2007; Miron & Lauria, 1998). Conversely, education has been shown to have an influence on the way that adolescents think about ethnicity and their own ethnic identity. The following studies examine the relationship between ethnicity and education.

“Acting White” is described as an aspect of the oppositional social identity that many African Americans develop as a result of unequal treatment in both schooling and education. This concept is one of many ways that ethnic identity influences both academic and social identity. McNamara Horvat and Lewis (2003) reassessed Fordham and Ogbu’s notion of “acting White” as “one major reason [why] Black students do poorly in school” (p. 265). Academic success is among the activities, events, symbols, and meanings that are often associated with being White. The study was conducted using interviews with 8 college-bound African American females. Additional interviews took place with the participants’ best friends, parents, college counselors, principals, and teachers.

The interviews provided insight into the ways that academically successful African American students have often practiced “camouflaging” strategies, in order to hide their academic success from Black peers who would apply negative peer pressure. The interviews showed how successful African American students often needed to navigate between several groups of friends in order to maintain their social and ethnic identity while still receiving peer support for their academic endeavors. These positive African American peer groups were found to counter negative influences and affirmed these students in their academic pursuits. These students were able to “reconceptualize academic excellence as the province and prerogative of Black Americans” as opposed to “fearing the loss of their Black identity” because of academic success (p. 275).

The scope of this study is a threat to the validity of the results. A sample of 8 African American females for this study makes generalizations difficult to the entire African American population. The omission of any male participants may have inadvertently supported negative stereotypes about academic achievement and identity within the African American male population. Further research should incorporate a larger sample that includes male participants. That being said, this study is an interesting look at how race interacts with schooling.

While the burden of acting White can lead some students to hide their academic success, there are others who associate their African American identity and heritage with academic success. Nasir, et al. (2009) conducted a mixed-methods study on racial and academic identity at a predominantly African American public high school in California. The study consisted of multiple samples: a focus group of 20 students (10 males and 10 females total; the students were grouped into ‘connected’ and ‘disconnected’ samples); 7 case study students who were shadowed for a total of 56 hours; and a quantitative survey of 121 students.

The study found that many of the academically successful students were also those who held a strong interest in African American history. These students identified themselves as a part of a rich African American historical legacy and drew upon this as support for their academic achievements. These students viewed their academic success as a facet of their ethnic identity and were able to maintain friendships between different peer groups that did not necessitate camouflaging behaviors. The findings of this study showed a correlation between a positive ethnic identity and academic success; furthermore, academic achievement was considered by many students to be an integral part of being African American.

A major flaw of this study was in the instrumentation. The authors state that their quantitative measures were not entirely normed or validated on the studied population (p. 108). This calls into question the discrepancies between the qualitative and quantitative portions

of the study. The qualitative student voice evidence cannot be discounted, but the short-term nature of the study and the lack of a reliable quantitative framework to analyze the proposed correlations are threats to the validity of the findings.

Educational tracking has also been shown to have a significant effect on ethnic identity in adolescents. Students often have to hide or deprioritize their ethnicity in order to succeed in higher educational tracks. Other students rely upon their ethnic identity to create a peer group of otherwise marginalized adolescents. Alvarez McHatton et al. (2007) examined ethnic identity development among Hispanic/Latino students in different educational tracks. The sample consisted of students who were bilingual, had been in an English Speakers of Other Languages program, and were tracked into either the general education (GE) or gifted education (GT) programs. The study deals with the different forms of discrimination that these students experienced due to their ethnicity. For GE students, speaking in their primary language was viewed as suspicious or disrespectful. Teachers thought that students were planning something devious if they were not speaking English. These students attributed many of the misconceptions about their communication style to the common prejudiced belief that all Latinos are criminals or gang members. These GE students sought to connect with their ethnic and cultural background as a way of establishing group identity, in response to marginalization. The GT students looked to their giftedness as their primary group identification. These students drew upon academic identity rather than ethnic identity to create connections with peers.

This study offers an interesting insight into some of the ways that ethnic identity can be addressed in the classroom. The Latino students in the GE classroom did not have a space where their ethnicity and language could be seen as a welcomed asset in the classroom. These students held onto their ethnicity as a form of resistance and group identity. Yet, the GT students accommodated to the hegemony of

the school by placing their academic identity ahead of their ethnic background.

The scope of this study is limiting. Further research that observes other schools, other ethnicities, other languages, and other code-switching behaviors may turn up data that would make the findings of this research more generalizable. Another thing to consider, regarding this study, is that it is a secondary analysis of data. The data collected for this study was originally used for a different study and then reanalyzed to create this study. It was unclear how much of the original data was applied to this study.

When adolescents consistently receive negatively biased treatment from teachers, administrators, or other authority figures, they frequently develop forms of resistance and opposition. However, many also react to this bias by accepting and accommodating it. Miron and Lauria (1998) examined how ethnic identity often becomes a means of both resistance and accommodation. This study was a comparative case study of students from two inner-city high schools. One school was an all African American magnet school, "City High", and the other was an ethnically diverse high school that served students from a single geographic area, "Neighborhood High". The researchers interviewed two categories of students from each school, essentially low and high achieving students. The researchers hoped to be able to document resistance from the lower achieving students. This study is different from many of the studies on ethnicity in that student voice is used as both the evidence and the results. The interviews are not quantified or codified using any sort of identity measure.

The study effectively used student voice to portray the experience of African Americans at an inner-city school. Students at Neighborhood High expressed that they did not feel that their teachers challenged them and that their desire to compete academically was unjustly denied. On the other hand, many African American students at Neighborhood High also related how grades were used to control student behavior. The desire to receive

passing grades and continue to receive passing grades became a source of accommodation to teacher authority. Some students mentioned that failure was commonly used as a disciplinary threat (Miron & Lauria, 1998, p. 201). The Neighborhood High students' responses alluded to unequal treatment and academic expectations for students of various ethnic groups. Many African American students at Neighborhood High resentfully expressed belief in academic discrimination that held them to lower academic standards and expectations of success because of their racial identity. This academic climate resulted in the essentialism of African American students and marginalization within a multicultural school (p. 208).

This nature of this study makes it difficult to extract data or apply it to other studies. The purpose of the study, as well as what the researchers intended to do with the results is also unclear. Although the study was conducted at two school sites, the narrative-based data makes the findings contextually dependent. There seemed to be an unequal amount of coverage on the two schools. The article appeared to dedicate more text to the Neighborhood High students, possibly to highlight the conditions at that school.

Multicultural literature in the classroom has been shown to have a positive influence on ethnic identity formation, as well as student engagement and sense of agency. Bean, Cantu'Valero, Senior, & White (1999) conducted a study on the effects of a multicultural novel upon student engagement in reading and writing. The study charted literary engagement in two separate diverse settings: a technology-oriented magnet school in the urban Southwest; and a rural school in Hawaii. The research sample consisted of 21 students: 11 students from the Southwest magnet school, and 10 from the rural Hawaiian school. A very wide representation of ethnicities was present at both schools. The study included Euro-American among the represented ethnicities, which is significant given a tendency to omit European descent from ethnic identity studies.

The case study revolved around the

students' reading and response to the novel *Heartbeat, Drumbeat*. The students responded to the novel with journal prompts. Students at the technology-oriented school took part in internet-based discussions on an online listserv designed for the class. The other school had limited access to computers and could not participate in these discussions. Overall, the students in both classes felt comfortable with displaying contrasting viewpoints and a strong sense of voice. These findings suggest that "students who feel they are empowered to talk and write about their reading are more likely to engage in reading" (p. 37). The authors assert that engagement with powerful multicultural literature causes students to change their view of themselves as individuals and learners (p. 37).

The context of this study limits the generalization of the results. The sample was very small, consisting of only 21 students; the participants came from two unique locations, a rigorous magnet school and a school in Hawaii. In addition to this, only one multicultural novel was considered. Any beneficial or positive results may have been a result of the contexts of these specific students. In addition to this, the authors were not forthcoming about the measurements or methods used to codify student journal entries. Because the codified journal entries were used to support claims of student agency, the omission of how these were measured is problematic. Overall, these findings may be too context specific and more research will need to be done if this research is going to be generalized.

When looking at the relationship between ethnic identity formation and multicultural education in this section, one is also looking at the relationship between teaching and student academic identity. These studies showed that ethnicity has a great effect upon the ways that students interact with the school and develop academic identity. This connection helps to highlight how multicultural educators can support academic identity formation by also supporting ethnic identity formation. Ethnic identity formation is a part of adolescence and is, therefore, an aspect of education. Because

of the different heritages, languages, and traditions that various ethnicities bring to the classroom, ethnic identity is inextricably linked to multiculturalism and multicultural education.

Discussion

This paper was based on the question: What relationships exist between ethnic identity formation in adolescents and multicultural teaching practices? Studies showed that ethnicity is an inescapable aspect of adolescent identity development. Adolescents of color are likely to be in the process of ethnic identity exploration. The evidence strongly suggests that ethnic identity development is crucial to understanding self-esteem, adjustment, and proactive coping strategies for dealing with racial prejudice and discrimination (Branch, et al., 2000; Phinney, 1989; Umana-Taylor, et al., 2008). Research also showed that holding negative attitudes towards ethnic self-identity can be associated with lower levels of self-esteem (Phinney et al., 1997). Adolescents who develop a strong connection to their ethnicity, despite a bias or negative climate for doing so, were likely to be more psychologically well-adjusted than those whose ethnic identity is privileged by social or academic climate (Azmitia et al., 2008).

Bias and discrimination from teachers and administrators is commonly reported by adolescents of color attending inner-city schools. These students have reported lower expectations of achievement, assumptions of gang affiliation or criminal activity, and negative responses to the use of primary language. Ethnic identity is often a source of both resistance and peer support for these students (Alvarez McHatton et al., 2007; McNamara Horvat & Lewis, 2003; Miron & Lauria, 1998). Academically successful African American teens learn to develop strategies for social navigation between different peer groups. Peer groups who would apply negative peer pressure to academically successful teens are often comprised of students who have developed an oppositional identity towards the school. To these oppositional students, academic success becomes associated with the White hegemony of the

school. African American students who are successful are seen as accommodating this hegemony and are portrayed as “acting White.” Many successful African American teens learn to use camouflaging strategies as a means of moving between peer groups who would apply negative peer pressure and those who are supportive of academic success. On the other hand, some students attribute their academic success to their African American heritage and ancestors, and do not find a need for these camouflaging strategies (McNamara Horvat & Lewis, 2003; Nasir, et al., 2009).

Recommendations

Addressing ethnic identity formation offers many opportunities for transformative multicultural educational experiences. Bean et al. (1999) showed the power of multicultural literature as a means of both engaging students in reading and encountering personal prejudices. While reading *Heartbeat, Drumbeat*, many of the students compared and contrasted the experiences of the protagonist to their own sense of ethnic identity. This suggests that educators can also use multicultural literature as a means to deconstruct personal prejudice and stereotypes through discussion and journal prompts.

Supporting ethnic identity formation runs hand-in-hand with creating an equitable classroom. Findings from Alvarez McHatton et al. (2007) suggest that merely inviting Latino students' primary language into the classroom has great potential for supporting students academically. By inviting students' primary language into the classroom, teachers can also help students develop a positive association between their ethnicity and their academic identity.

Alvarez McHatton et al. (2007), Miron and Lauria (1998), and McNamara Horvat and Lewis (2003) all discuss students who have experienced bias and cultural assumptions in their schooling. Multicultural educators may use this notion of bias and cultural assumption in the school as an entry point to talking about how bias and cultural assumptions are factors in the knowledge construction of academic disciplines.

Conclusion

There are several classroom implications for the use of ethnic identity research to support multicultural teaching practices that enhance ethnic identity formation in adolescents. Nevertheless, connections between the two are not often made. Further research would need to include a deliberate integration of ethnic identity research and multicultural pedagogy. An intervention study that incorporates a multicultural treatment and ethnic identity measures can be a possible way of integrating these two areas. The desired end goal of future research is a rationale for pedagogical strategies that are informed by both multicultural education and ethnic identity research.

References

- Alvarez McHatton, P., Shaunessy, E., Hughes, C., Brice, A., & Ratliff, M. A. (2007). You gotta represent! Ethnic identity development among Hispanic adolescents. *Multicultural Perspectives, 9*(3), 12-20.
- Azmitia, M., Syed, M., & Radmacher, K. (Eds.). (2008). The intersections of personal and social identities [Special issue]. *New Directions for Child and Adolescent Development, 120*, 61-79. doi:10.1002/cd.216
- Banks, J.A. (2004). Multicultural education: Historical development, dimensions, and practice. In J.A Banks & C.A.M. Banks (Eds.), *Handbook of research on multicultural education* (2nd ed.) (pp. 3-29). San Francisco: Jossey-Bass.
- Branch, C.W., Tayal, P., & Triplett, C. (2000). The relationship of ethnic identity and ego identity status among adolescents and young adults. *International Journal of Intercultural Relations, 24*(6), 777-790. doi:10.1016/S0147-1767(00)00031-6
- Bean, T., Cantu'Valero, P., Senior, H. M., & White, F. (1999). Secondary English students' engagement in reading and writing about a multicultural novel. *The Journal of Educational Research, 93*(1), 32-37.
- Brown, T.J. (2010). Culture, ethnicity, and race. In R.L., Jackson II (Ed.), *Encyclopedia of identity* (pp. 185-188). Thousand Oaks, CA; Sage Publications Inc.
- Presenter, Fonte, J. (2000, July). *To "possess the national consciousness of an American"*. Paper session presented at the meeting of The McCormick Tribute Foundation, Wheaton, IL. Retrieved from <http://www.cis.org/articles/cantigny/fonte.html>
- McNamara Horvat, E., Lewis, K. S. (2003). Reassessing the "Burden of 'acting white'": The importance of peer groups in managing academic success. *Sociology of Education, 76*, 265-280.
- Miron, L.F., & Lauria, M. (1998). Student voice as agency: Resistance and accommodation in inner-city schools. *Anthropology & Education Quarterly, 29*(2), 189-213.
- Nasir, N.S., McLaughlin, M.W., & Jones, A. (2009). What does it mean to be African American? Constructions of race and academic identity in an urban public high school. *American Educational Research Journal, 46*(1), 73-114. doi:10.3102/0002831208323279
- Phinney, J. S. (1989). Stages of ethnic identity development in minority group adolescents. *Journal of Youth and Adolescence, 9*(1-2), 34-49
- Phinney, J. S., Cantu, C. L., & Kurtz, D. A. (1997). Ethnic and American identity as predictors of self-esteem among African-American, Latino, and White adolescents. *Journal of Youth and Adolescence, 26*(2), 165-184.
- Rich, M.D., & Cargile, A.C. (2004). Beyond the breach: Transforming White identities in the classroom. *Race, Ethnicity and Education, 7*(4), 351-365. doi:10.1080/1361332042000303379
- Umana-Taylor, A. J., Vargas-Chanes, D., Garcia, C. D., Gonzales-Backen, M. (2008). A longitudinal examination of Latino adolescents' ethnic identity, coping with discrimination and self-esteem. *The Journal of Early Adolescence, 28*(16), 16-50. doi:10.1177/0272431607308666
- Wakefield, W. D., & Hudley, C. (2007). Ethnic

and racial identity and adolescent well-being. *Theory into Practice*, 46(2), 147-154.

Art Integration's Impact on Students' Intrinsic Motivation and Engagement

This paper critically reviews literature that examines the following question: Does art integration impact students' intrinsic motivation and engagement? This literature review explores peer reviewed, empirical studies about Flow Theory and art integration that focused on kindergarten through 12th grade participants, in urban, rural, and suburban communities. The literature review found that students became engaged and motivated to learn when they were challenged in their work, were enjoying and interested in lessons, when lessons were relevant to their lives, and when they had a choice in how to represent their learning. The literature review also found art integration was a method of providing the challenge, skill use, enjoyment and interest, relevancy, and choice in lessons. Integrating drawing, dance, skit creation, and performance, were a few methods discovered for integrating art in the classroom. In conclusion, these findings suggest that art integration is a teaching practice that engages and motivates students because it provides students with a choice in channels to represent their learning and it supplies challenging activities that are relevant, enjoyable, and interesting.

According to Smith, Sheppard, Johnson, and Johnson(2005), many in the educational community believe intrinsic motivation and engagement directly affect how much of the knowledge students learn, if they learn it well enough to apply the knowledge, and even whether students learn the knowledge at all. Zull(2002) describes intrinsic motivation as an internal desire to complete a task or learn new knowledge. Shernoff, Csikszentmihalyi, Schneider and E. Shernoff(2003) explain that student engagement occurs when students are participating completely and are devoted, as well as interested, in their learning. How to foster intrinsic motivation and student engagement was a question left unanswered after I finished my student teaching internship. This question led me to research the effectiveness of using art integration to intrinsically motivate and engage students. The information will inform my practice on how to positively impact student learning.

Rationale

There are several theories about how to achieve student engagement and motivation, in the classroom. In one study, Shernoff et al.(2003) explained that Flow Theory outlines how to engage and motivate students through interest, challenge, and relevancy of the material covered in lessons. The question that remains for educators, administrators, and parents is how to achieve these factors for every student in every classroom. One method of motivating and engaging students using the factors of Flow Theory, that is suggested in research, is art integration(Smithrim et al., 2005).

Shernoff, Csikszentmihalyi, Schneider and E. Shernoff(2003) studied the importance of student engagement and motivation on student learning are gaining momentum in the education community. Shernoff et al.(2003), also stated that students become engaged and motivated to learn when they are "challenged, the material is relevant, and they feel in control of their learning environment." Shernoff et

al.(2003) hypothesized that students become bored when they are disengaged from their learning and, as a results, do not learn or drop out of school(p. 158). Gentry and Springer(2002) cited Piaget and Ausbel, Novak and Hanson when they describe that art integration makes learning meaningful, and meaningful learning is more effective than rote learning(p. 193). As the momentum for learning how to keep students engaged and active in their learning increases, the question of how to achieve both is raised. Many educators and researchers have studied what engages and motivates students, and how and why integrating art is an essential component to increasing student engagement and intrinsic motivation.

This paper explores, in three parts, studies about the effects of art integration on student engagement and motivation. The first section reviews studies that explain why students become engaged and motivated in the classroom. The second examines studies that specifically look at art integration as a means of fostering student engagement, motivation, and transfer. The third section focuses on specific methods of art integration and their impact on student engagement and motivation.

Marshall(2005) defined integration as instruction which combines two or more content areas. Art integration is instruction in which art is one or more of the integrated areas. The integration is based on shared or related concepts, and instruction in each content area is explored for comprehension and has integrity. The learning achieved in all content areas is reflected by pre- and summative assessments, content based standards, and learning objectives. This type of in depth approach to learning each content area is called substantive integration. She stated that many theories support the substantive integration of art into curriculum. She explained that art

integration is supported by, "theories which describe learning as essentially a situated, socially constructed, and culturally mediated process of making meaning,"(p. 227). Despite the support for art integration, there are arguments about art integration's integrity.

One of the prominent disagreements, found in the professional literature reviewed to write this paper, is that art is distinctive and beneficial enough, to education, to stand on its own as a valuable and essential subject. It is argued that art provides an education in creativity, self-expression, and developing one's imagination. Smithrim and Uptis(2005) stated that many argue that these factors stand on their own and make art a necessity to a well-rounded education, therefore, art should be a core subject and research about its significance to learning other subjects is refutable.

Burton, Horowitz, and Abeles(2000) explained that another argument about integrating art is that the connections necessary to help students engage in art, and transfer this knowledge to the core subjects, must be made obvious to the students for it to be effective. If students are unable to see the connection between a skill learned from art and the core subject in which they are supposed to apply this skill, then the connection itself is irrelevant and, therefore, lost(p. 230).

Stinson(1997) explained that one final argument that questions integrating to achieve student engagement is whether students have the prior knowledge to express themselves in the lesson's prescribed art form itself. If students do not know how to paint, dance or write a play, this knowledge needs to be scaffolded. Stinson(1997) stated that without this knowledge, students feel lost and lose confidence, as well as their sense of self-control. Students, in this scenario, feel set up for failure. Students cannot express the learning if they are

unfamiliar with the medium in which they are asked to express this new knowledge.

This literature review is limited by the amount of studies I was able to find on art integration in high school English classrooms. The topic appears, based on my search for studies, to be a newer one that is gaining momentum. Another limitation in my research is the small number of mediums of art integration. The studies I found used mainly drawing, performance art such as acting out skits, and dance. There are multiple other mediums that may engage and motivate students just as well, such as painting, photography, multimedia design, and music or songwriting to name a few. I also found that art integration has several definitions and I chose to narrow my research to two: arts infusion and art-included. Arts infusion is defined as instruction that makes a connection to one concept while instructing in more than one subject. Arts-included means art instruction is offered alongside other subjects with or without integration into these subjects(Gullat, 2008). I chose these two forms of art integration because they were the most common found in research.

Literature Review

Today's high school students are faced with multiple areas of pressure, in both school and their communities. These pressures include academic achievement and passing standardized tests, which measure their comprehension of a subject. With the mounting concern over public education and the national standards, many educators, politicians, parents, and members of the multiple communities in the United States wonder how students can learn and comprehend their lessons under these pressures.

Greene(1995) theorized that art integration enables students to gain a personal lens of others perspectives. She

argued for a curriculum that fosters the imagination; an imagination that provides this critical lens into the world of others. Art integration is one method Greene(1995) suggested for teaching students how to imagine another's perspective.

Jackson(1998) also discussed the role of imagination and learning based on Dewey's theories. He explained that Dewey believed art is a method for students to make meaning of the world around them and their lessons in the classroom. According to Dewey, creative imagination is related to individual perception and intrinsic meaning. Mental imagery helps people understand the meanings of things through form. Dewey believed that the ultimate usage of creative imagination is to use one's imagination to make meaning and learn from experiences(p.27-8).

Concepts about Student Engagement and Motivation

The studies in this section explore how to positively impact student engagement and motivation. Each study examines Flow Theory as a whole or specific aspects of the theory. These studies give a scope of what affects student engagement and motivation in the classroom. They serve as a barometer to connect art integration's benefits to the aspects of Flow Theory that influence student engagement and motivation.

In a quantitative study on student engagement, Shernoff et al.(2003) examined the concept of Flow Theory on student engagement. Flow Theory states, "individuals perceive their performance to be pleasurable and successful, and the activity is perceived as worth doing for its own sake, even if no further goal is reached,"(p. 160). Students need to feel challenged enough that the task is difficult, but not so challenged that their prior knowledge and skill set cannot achieve the goal. Flow Theory also states that learners

must enjoy and must be interested in their learning activities. Shernoff et al.(2003) believed Flow Theory was the answer to engaging and motivating students.

Shernoff et al.(2003) used the Sloan Study of Youth and Social Development (SSYSD) to investigate whether high challenging activities, combined with high skill levels, had a positive impact on student engagement and motivation. The SSYSD reports the relationship between students feelings about their lives and their feelings about their future. Three questions were addressed in Shernoff's study using this information: "How do high school students spend their time in school? What is the association between student engagement and the experience of challenge, skill, control, and relevance? How do classroom factors, such as instructional method and school subject matter influence student engagement?"(p. 162). Information was collected from 526 10th and 12th grade students. The study was longitudinal and information was collected at three different times, from 1992 to 1997. In the results, 13 high schools were sampled, and the schools were in urban, rural, and suburban areas from around the United States.

Shernoff et al.(2003) surveyed participants' engagement and motivation using the Experience Sampling Form(ESF). This form asks students to tell what their present environment is, what they are doing, how they are feeling, and what they are thinking during random moments(p. 163). Students described their emotions during each activity, when signaled to do so by wrist watches. Students rated their feelings about the Flow Theory aspects of concentration, interest, and enjoyment. Engagement results were totaled by averaging the three states of feeling together, but each flow theory aspect was also recorded separately to see how they relate. Students recorded their ratings in

personal logs, which they carried around throughout the week, not just during the school hours.

One interesting aspect of engagement, shown in the results, is that students were the most engaged in both individual and group work activities, while they were less involved in direct instruction. Also, students were the most engaged when they felt they had high skill levels, were challenged by the task, had high self-esteem, a sense of control, and when the lesson was relevant. Shernoff et al. concluded by saying students should be given options, relevant tasks, and, "opportunities for success," in order to be engaged and motivated in their learning(p. 171).

There are strengths and problems with Shernoff et al.'s(2003) study. One strength is that the study asked students about their own perceptions of concentration, enjoyment and interest, as well as engagement in lessons. These perceptions gave a clear picture of when students were engaged and what aspects of Flow Theory contributed to their engagement and motivation to learn. This information explained that student engagement and motivation is affected by students feeling challenged, and their interest, concentration, and enjoyment in their learning.

One drawback seen in the study is that while students were randomly selected they were not diverse. While the schools are in different settings, Sixty-four percent of the students were European American, sixteen percent were African American, eight percent were Asian American, and ten percent were Latino. Also, noteworthy is that more than half were female(Shernoff et al., 2003). Therefore, the results appear to lack a multicultural perspective of student motivation and engagement. However, this study serves as a rationale for research on student engagement and motivation in the other studies that are reviewed for this

paper. The next study examines Flow Theory components relevancy and choice.

Assor, Kaplan, and Roth(2002) examined two aspects of Flow Theory in their qualitative and quantitative study on students' engagement and motivation: relevancy and choice. Assor et al.(2002) based their hypothesis on the Self Determination Theory, which states students are more engaged when they have, "autonomy support, competence support, and relational support," and, "when they have choice, self-management, and their perspectives, as well as their feelings, are understood,"(p. 262-3). According to the researchers, teachers promote student engagement and motivation by connecting the purpose of the learned task to students goals and interests.

Assor et al(2002) addressed two questions in their research: "Can children differentiate among various types of autonomy-enhancing and suppressing teacher behaviors?" and "Which of those types of behavior are particularly important in predicting feelings toward and engagement in schoolwork?"(p. 261). They studied 862 Israeli students ages eight to fourteen years old. The students attended 3 schools that were "middle or lower middle-class," (p. 266). Like Shernoff et al.'s(2003) study, students were asked to rate their emotional reactions to schools and engagement in classes. Assor et al.(2002) also looked at students' perceptions of support received from their teacher. Student engagement and motivation was measured based on rated student perceptions of support, using a scale of 1 to 4. They found that while choice was desirable for students, engagement was fostered more significantly when the teacher provided relevant lessons and activities.

Assor et al.'s (2002) study would be more informative if it gave a broader scope of the students involved, including gender

and socioeconomic factors, and if it involved a more diverse student population. The researchers end the study by questioning whether they examined the topic of choice enough and if they should have looked at specific factors involving choice. The study does conclude that student engagement and motivation are connected to relevancy, and this is beneficial knowledge to learn if exploring how to achieve both factors in the classroom. However, Flow Theory consists of more than relevancy and choice. Students need to feel challenged and enjoy their learning to be engaged and motivated. The following study examines all aspects of Flow Theory and their relationship to student engagement and motivation.

Gentry and Springer(2002) conducted a quantitative study on how to assess the aspects of Flow Theory. The study explored an assessment on the effects of student choice, interest, challenge, meaningfulness, and enjoyment on student engagement and motivation. The researchers stated, "Valid and reliable assessment of student perceptions of challenge, choice, interest, enjoyment, and meaningfulness within their classrooms can provide valuable insights concerning improvement in educational opportunities for these students,"(p. 193). Gentry et al.(2002) studied these aspects of student engagement in order to develop a method for teachers to inform their practice about using Flow Theory concepts to achieve student engagement and motivation.

Gentry et al.(2002) measured students with a survey modeled after the My Class Activities questionnaire. The survey asked 420 ethnically diverse and urban high school students, in grades 9-12, to rate the following student influences on student engagement and motivation: choice, interest, challenge, meaningfulness, and enjoyment. The researchers data collection and analysis later combined student interest and

enjoyment because, “items that had been judged and written to assess Interest and Enjoyment as separate constructs had strong intercorrelations and loaded together on the same factor,”(p. 198). After combining the five influences into four, Gentry et al(2002) reran the test to ensure validity. The study found that secondary students were able to give enlightening and beneficial feedback through the questionnaire, especially on the Flow Theory concept of relevance, or meaningfulness.

The strength of Gentry et al.’s(2002) study comes from its careful analysis of the data. Gentry et al.(2002) notice the close correlation between student interest and student enjoyment, and combine these measured influences, as well as rerun a new survey with the combined influences, accordingly. One major weakness of the study, in regards to the research purpose of this paper, is the results are only discussed in terms of teachers using the survey as a means of assessing student engagement and motivation. They do not consider students self-assessing their perceptions. The downfall in this weakness is that students may appear engaged and motivated from the teacher’s standpoint when they are not.

All of the previous studies discussed Flow Theory related methods of ensuring student engagement and motivation. The studies suggest that teachers should challenge students, while providing relevancy and self-control, or student choice, in lessons. The question left is what teaching practices will challenge students, offer them choice, and provide relevancy to the material covered in the curriculum. Art integration is one method suggested in a study performed by Smithrim and Uptis(2005). The following studies examine the impact of art integration on student engagement and motivation.

Integrating Art and Student Engagement and Motivation

Begoray(2001) conducted a quantitative and qualitative study to examine the impact of visual literacy on student engagement and motivation. She explored the effect of giving students the choice, of using visual modes to represent their learning, on their engagement and motivation. She explained, “The theoretical conception of literacy is undergoing a metamorphosis. Where once it meant an ability to read and write, often to some arbitrary level (grade 4 perhaps), society now demands both more sophisticated ability in traditional print text (words on the page) and also the skills of other sign systems such as visuals,”(p. 202).

Begoray(2001) conducted the study at a middle school in Canada. The students were middle class and in grades 5 through 8. Begoray compiled her data by videotaping 4 lessons twice a school year for two years, in which teachers used what they believed were visual literacy methods, and by collecting journals in which the teachers wrote about their methods of visual literacy. In the second year of the study, Begoray(2001) asked students for their perspective on the lessons involving visual literacy. She analyzed the data by reading, comparing and synthesizing the videotaped lessons and the journals.

Begoray(2001) discovered that teachers used 70 different methods of visual literacy in their lessons, and that visual literacy had a positive impact on student engagement. Visual literacy methods used by teacher participants included art and drama activities, such as drawing visual representations of story plots, as well as creating games and acting out scenes from stories. She explained that the common characteristics of visual literacy in the study were analyzing characteristics of, valuing the quality and significance of and

evaluating photographs related to the lesson's texts(p. 210). Students reported that the visual literacy activities peaked their interest and did not feel like classwork, which according to Flow Theory(Shernoff 2003) provide the type of interest necessary for engagement and motivation. Students also reported that the work was sometimes, though not always, more challenging, another important aspect of fostering student engagement according to Flow Theory.

Begoray's(2001) study gave a beneficial perspective of art integration because the perspective was from the students and the teachers. The examples of art integration provided a picture of the combination of art integration and visual literacy. The study also used control schools to compare results to and accounted for an attrition rate of thirty-two percent. This study did not completely answer the question of how to use art integration to impact student motivation and engagement. The next study explored the question further, especially in regards to student engagement and student learning.

Smithrim and Uptis(2005) conducted a mixed method study which examined the effects of art integration on student engagement and motivation. They stated, "a growing body of research suggests that arts education positively affects aspects of living and learning beyond the intrinsic values of the arts themselves,"(p. 110). Smithrim also cited educational authors Greene and Eisner as saying art integration gives students a meaningful way to represent their learning in assignments.

Smithrim et al.(2005) studied 4063 Canadian students, in grades 1 through 6, over three years. The students came from 55 schools and control schools were chosen to compare the results to. Students with learning disabilities were given accommodations. Smithrim et al. (2005) used the quantitative tools of "standardized

tests, writing examples, and surveys which measured attitudes and practices," of students(p. 113). Smithrim also used qualitative tools including, "open-ended surveys, individual interviews, and focused group interviews,"(p. 113). Surveys used in the study also measure the out of school interests of students.

The results indicated that art integration had minimal effects on student achievement, but it did affect student engagement and motivation. Teachers were quoted in the study on how the students paid more attention and were excited about being at school(p. 120). Enjoyment, part of Flow Theory(Shernoff, 2003), was a significant factor in student engagement and motivation, but the Flow Theory factors of interest, challenge and skill were not examined. The next study inspects the impact of skill on student engagement and motivation.

Burton, Horowitz, and Abeles(2010) performed a mixed method study which related student engagement and motivation to the transfer of thinking skills between different subjects. The researchers claimed that art is a discipline that contributes skills like focus, analysis, and critical thinking skills to learning. Burton et al.(2000) also stated that in order for the thinking skills developed in art integration to be perceived as pertinent to learning by students, they must know the skills can and will be transferred or useful in the future.

Burton et al.(2000) studied 2,406 students from 12 elementary and middle schools. Students' experiences in art learning were diverse, as were the instructional methods of art integration. Students filled out three qualitative tests: the Torrance Test of Creative Thinking, the Self-Description Questionnaire, and the Students Arts Background questionnaire. Teachers were surveyed on student's "imagination, risk taking, expression and

cooperative learning, as well as school climate, arts teaching and arts learning”(p. 235). The researchers also collected quantitative data, in the form of student interviews, about previous school and personal art instruction. Researchers recorded observations and examinations of students’ present classes and assessments that involved art, from 5 of the 12 schools. The data collected from the study found there were multiple relationships between art integration and student engagement. Burton et al.(2000) concluded by stating art integration provides students with relevancy and a choice in how to construct, as well as represent, their learning from their own perspective.

While the study incorporated both qualitative and quantitative data, the quantitative data was collected from only 5 of the 12 schools. The study looked at specific details of engagement, motivation, and learning, including thinking skills and enjoyment, but it did not give an answer to whether art integration aids in knowledge transfer. This study is a good beginning in exploring why arts integration contributes to student engagement and motivation, but more research needs to be done.

Edens and Potter(2001) conducted a qualitative study which explored art integration’s, impact on students motivation and engagement in science. The researchers asserted that art integrations affects student engagement and motivation because, “it functions as a tool for student reflection, enabling readers to carry on a dialogue with themselves and communicate ideas and feelings,”(p. 215). The study involved 184 fourth- and fifth-grade students with an even split of male and female, Caucasian and African American. There were only 5 Asian American students in the study. Each student was asked to respond to one of three scientific prompts twice in their art class. Both sets of prompts asked about different

subjects pertaining to scientific concepts. These prompts asked them to either write, write and draw, or write instructions for a drawing of the concept. Edens et al.(2001) explained, “the cognitive approach to learning emphasizes the importance of prior knowledge. To activate this existing knowledge, students in all three conditions heard and read a short passage of text information,”(p. 221). Edens et al. (2001) analyzed the students’ responses using a, “one-way multivariate analysis of variance and an analysis of variance on dependent variables,”(p. 221). The study concluded that in order for students to become engaged and motivated through art integration, the activities must be meaningful and access prior knowledge.

While the study explored the effect of art integration on student engagement and motivation, the short series of assignments and random selection of students who represented their learning in art do not provide a sufficient scope. Further assignments would have given a broader view of the results and made the conclusion more sound. Another disappointing factor of the this study is that the main focus was academic achievement. The research question how can arts integration be used to impact student engagement and motivation was not explored in enough detail for the conclusion to be useful.

The previous studies examined how arts integration is used to impact student engagement and motivation. However, another issue also remains in the scope of research reviewed for this paper. This issue is how do specific methods of art integration, and mediums of art, positively impact student engagement and motivation. The following studies explore this issue by employing a few methods of art integration and mediums of art.

Integrating Art and Specific Methods

Smagorinsky, Cameron, and O'Donnell-Allen(2007) conducted a qualitative study in which they examined two high school seniors, with ADHD, in a British Literature class(p. 333). The researchers asked the research question, "Given the context provided for her literary interpretation, what factors appear to contribute to students' efforts to attend to the text and task assigned by their teacher?"(p. 335). The two students were asked to analyze a poem and represent their analysis in an artistic medium. Smagorinsky et al.(2007) hypothesized, based on theorists such as Vygotsky, that all students need more options to respond to literature other than essays and quizzes. The researchers proposed that every student becomes more engaged and motivated when they are given these options. Students with learning disabilities benefit because completing an activity that they have choice and interest in detracts from their inability to focus on the assignment.

The two students analyzed poems about personal identity by authors, such as John Keats. They responded to the poems through drawings. Students demonstrated their learning at the end of the unit by creating masks that expressed their individual identities. Data on goals, setting, and tools used was collected. This data came from observations on instruction, class activities, project work, and the projects' presentations. The two subjects also reflected on their work, particularly their analysis, and the reflections were recorded. Smagorinsky et al.(2007) concluded that both students were more engaged in and motivated to respond to the projects because the artistic medium allowed them to make a personal and interesting connection to the poem. Another factor of the project that contributed to every students' engagement and motivation was the discussion that happened after each presentation.

Smagorinsky et al.'s(2007) study is another good beginning into researching the effects of art integration student engagement and motivation. However, it is just a beginning. Only two students participated in the study, therefore, a range of students to compare and contrast results with is unavailable. To be more effective at exploring the impact of art integration on student engagement and motivation, a larger scope of students and assignments would be beneficial. The next study uses a larger participant population.

Stinson(1997) performed a qualitative study in which she explored the enjoyment of dance and why it was engaging for students. She wanted to know why students were eager to learn this art form, but not so eager in other subjects. She referred to Gardner's theory on engaging students when she stated, "Gardner further suggests that 'the arts are a good testing ground for such activities because many members of the educational establishment don't care about them so much, so teachers can afford to take chances'," (p. 50).

Stinson(1997) studied 52 middle school students, ranging in socioeconomic diversity at three schools. She observed and participated in dance classes once a week. She also interviewed and collected examinations and handouts. The interviews were the main piece of data Stinson(1997) concentrated on in her analysis. She mentioned that while the different economic backgrounds of students, as well as the teaching styles used in the dance classes, may affect student engagement and motivation, she wanted to explore what facilitated student engagement and motivation in the dance classes without changing the variables(p. 51).

Stinson(1997) concluded that the enjoyment and challenge aspects of Flow Theory were the main contributors to student engagement and motivation.

Students enjoyed being social, using their imagination, and being active. She also explained that students' reactions made it, "clear to me that learning is fun to students only when they consider that learning to be relevant,"(p. 56). The connections and enjoyment make art mediums a viable method of instruction and representing what one has learned.

Stinson's(1997) study gave a thorough view of student engagement and motivation theory in balance with an art activity. While this study took place in an arts based classroom, she remained faithful to the purpose of exploring why art mediums are engaging and motivating for students. As simple as the ideas of fun and challenge are, Stinson(1997) gave a detailed account of how both aspects of Flow Theory are relevant to learning. The knowledge gained from this study is the relevancy, enjoyment, and challenge found in art integration make it a catalyst for student engagement and motivation. While this study explored a performance art class, the following study explores arts-infused high school language arts.

Gamwell(2005) qualitative study explored "meaning making" in literature and language arts using art integration(p. 359). He explained he research is born from theories that state art integration engages and motivates students by allowing them to use their prior skills, emotions, and participation to learn(p. 360). He explored how art integration is a means of reflection and expression of learning for students in his own classroom of 26 8th grade students.

Gamwell's(2005) data included students' reflections, video and audio recordings of lessons, and observation notes. He examined the research for information that supports Gardner's multiple intelligences, as well as, "connections between emotion and learning, and the contribution of aesthetic context to the meaning-making

experiences of the students in the arts based classroom,"(p. 367). The art integration in this study took the form of performance based projects, including skits and videotaped or multi-media interpretations of stories read in class. Many of the student projects were also created in groups.

Gamwell(2005) organized the results into five categories: active engagement and focused attention, emotional engagement, contextual memory, social construction of meaning, and personal choice and control(p. 367). He found that students became more engaged by creating and acting out performances based on their readings, and remembered the lessons well after the performances. Students also developed social skills, multiple meanings and perspectives of the literature in their groups. He also concluded that students made their own sense of the literature read and connected the relevancy of their learning to their lives.

Gamwell's(2005) study is fascinating and provided a deep perspective into the effects of art integration on student engagement and motivation. The study supports a teacher's decision to provide multiple ways for children to express their learning and for students to connect to this learning. He did not use a control group to compare the results of using art to express learning to completing other types of activities. This leaves the question of whether art integration or another classroom factor impacted students' engagement and motivation, in this study.

The previous studies provided a few approaches to art integration. The studies all concluded that art integration positively affected student engagement and motivation. However, none of the studies compared art integrated activities to other types of learning activities. While these studies provide a commencement in researching art integration's impact on student engagement

and motivation, the question of whether it was the only factor that was influential on student learning remains unanswered.

Conclusion

Art integration is not the only means of engaging and motivating students, but it is a significant contributor. The above studies defined noteworthy causes of students engagement and motivation. They also explained the connections between common aspects of student engagement and motivation to art integration. The studies detailed how these aspects are common in art integration. They also described art integrated mediums that can be used in future classroom activities and assessments to motivate and engage students. The studies reviewed for the paper explained that art integration is an effective way to differentiate my curriculum and give individual students multiple ways to access their learning.

There were multiple findings in my research on art integration's impact on student engagement and motivation. Shernoff et al.'s(2003) research indicated four conditions that contribute to student engagement and motivation; some if not all of these conditions were found in every study reviewed for this paper. According to Flow Theory, one condition that affects student engagement and motivation is that students must feel challenged in their demonstration of learning. Another condition is students thrive when they have a choice in assignments. The third condition that affects student engagement and motivation is that students must enjoy and be interested in the lesson and its activities. The fourth condition is students also become engaged and motivated in lessons that are relevant to these interests and to their lives.

Based on the studies reviewed in this paper, art integration is a practice that attends to Flow Theory's concepts. It

appeals to students' interest and enjoyment in learning. Art integration offers avenues for making a lesson's concepts relevant to students' lives(Stinson, 1997). It also provides challenging and accessible methods of reflection and comprehension(Gamwell, 2005). Finally, when art is integrated as a choice for student response to assignments, students feel in control of their communication and their learning(Burton et al., 2000).

A few caveats were offered in the studies reviewed for this paper. One caution is that students need to either have prior knowledge about, or scaffolding on, how to create in an art medium for art integration to be engaging and motivating. If students are unfamiliar with the techniques and tools of an art medium, they will become disengaged and feel alienated from learning(Stinson, 1997). Another caveat is that students may be nervous about performing in front of classmates or a school audience(Gamwell, 2005).

There are a few specific ways the research has informed my practice as a teacher. I plan to integrate art into my curriculum because the studies have linked art integration to improving student engagement and motivation. I have also learned that it is important learn about students' abilities, prior knowledge, and lives. This information will enable me to create differentiated, relevant lessons that challenge students to use their skills, but are within the capabilities of each student.

In future research, learning strategies for time management and scaffolding lessons is crucial. Based on personal experience, integrating art and the time needed to scaffold lessons that involve art integration will both make time allotment a concern. Collaboration with an art teacher may be a practice that will solve this dilemma by giving students the complete, in depth, and scaffolded lessons necessary for

learning art skills. Also, collaboration may ensure students are capable of completing assignments involving art if they are given time during art instruction to do so. Another benefit of collaboration might be sharing concepts across subject areas, which provides multiple perspectives of the shared concepts. These possible solutions for problems with time management and scaffolding make exploring reasons and effective strategies for collaboration the next logical step for integrating art into the classroom.

References

- Assor, A., Kaplan, H. & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviours predicting students' engagement in schoolwork. *British Journal of Educational Psychology*, 72(2), 261-278. doi:10.1348/000709902158883
- Begoray, D. (2001). Through a class darkly: visual literacy in the classroom. *Canadian Journal of Education*, 26(2), 201-217. doi:10.2307/1602201
- Burton, J., Horowitz, R. & Abeles, H.(2000). Learning in and through the arts: the question of transfer. *Studies in Art Education*, 41(3),228-25. Retrieved from: <http://0-www.jstor.org.cals.evergreen.edu/stable/1320379>
- Edens, K. & Potter E. (2001) Children's motivational beliefs about art: exploring differences and relation to drawing behavior(Paper presented at annual meeting of the American Educational Research Association). Retrieved from: <http://eric.ed.gov/PDFS/ED452134.pdf>
- Gamwell, P. (2005). Intermediate students' experiences with an arts-based unit: An action research. *Canadian Journal of Education*, 28(3), 359-383. Retrieved from: <http://0-www.jstor.org.cals.evergreen.edu/stable/4126475>
- Gentry, M. & Springer, P. (1995). Secondary student perceptions of their class activities regarding meaningfulness, challenge, choice, and appeal: An initial validation study. *Journal of Secondary Gifted Education*, 13(4), 192-204.
- Greene, M. (1995) *Releasing the imagination*. San Fransico: John Wiley & Sons, Inc.
- Gullat, D. (2008) *Enhancing student learning through arts integration: Implications for the profession*. *The High School Journal* 91(4), 12-25. Retrieved from: <http://uncpress.unc.edu/journals/j-hsj.html>
- Jackson P. (1998) *John Dewey and the lessons of art*. New Haven, CT: Yale University Press.
- Marshall, J. (2005) *Connecting art, learning, and creativity: A case for curriculum integration*. *Studies in Art Education*, 46(3), 227-241. Retrieved from: <http://0-www.jstor.org.cals.evergreen.edu/stable/3497082>
- Shernoff, D. J., Csikszentmihalyi, M., Shneider, B., & Shernoff, E. S. (2003) Student engagement in high school classroom from the perspective of flow theory. *School Psychology Quarterly*, 18, 158-176. doi: 10.1521/scpq.18.2.158.21860
- Smagorinsky, P., Cameron, T., & O'Donnell-Allen, C. (2007) *Achtung maybe: A case study of the role of personal connection and art in the literary engagement of students with attentional difficulties*. *Reading & Writing Quarterly: Overcoming Learning Difficulties*, 23(4), 333-358. doi: 10.1080/10573560701501552

- Smith, K. A., Sheppard, S. D., Johnson, D. W., & Johnson, R. T. (2005). Pedagogies of engagement: Classroom-based practices. *Journal of Engineering Education*, 94(1), 87-101. Retrieved from: EBSCOhost.
- Smithrim, Katharine & Upitis, Rena(2005). Learning through the arts: Lessons of engagement. *Canadian Journal of Education*, 28(1/2), 109-127. Retrieved from:<http://www.jstor.org/cals.evergreen.edu/stable/1602156>
- Stinson, Susan W. (1997). A question of fun: adolescent engagement in dance education. *Dance Research Journal*, 29(2), 49-6. Retrieved from: <http://www.jstor.org/cals.evergreen.edu/stable/1478734>
- Zull, J. E. (2002) *The art of changing the brain*. Sterling, VA: Stylus Publishing, LLC.

Strategies Integrating Social Studies and Language Arts at the Secondary Level

For the teacher that desires to create an integrated curriculum at first it may seem to be a fairly simple process, but the reality is that this is not the case. With several approaches to curriculum integration available there are many questions as to what approach is best for different circumstances and desired goals. This literature review of empirical research addresses both strategies and considerations that may be taken into account for integration of social studies and language arts at the secondary level (6-12). A spectrum of approaches available for curriculum integration is presented and relevant research is analyzed. The conclusions suggest the need for teachers to attend to disciplinary boundaries, to manage the balance between content and form, to utilize colleagues as resources, and to consider the social impact of their teaching formation. The paper concludes with some practical strategies and considerations for teachers who are implementing integrated curriculum and recommended areas of further research for those interested in conducting research themselves.

My desire to work within an interdisciplinary context has existed just about as long as my desire to teach. This desire has come not primarily out of any pedagogical motivation, but rather my own experience of these two disciplines being interrelated by their very nature. Any literature that has ever been written was done so within a social context, and if the literature is to be truly understood, understanding the history and context in which it was written is essential. Additionally, when designing language arts (LA) classes, choosing the specific content to work with can often be an arbitrary process, but if social studies (SS) is integrated it can serve as the guide for selecting content. On the other hand, when studying SS, reading the literature of any historical period can illuminate the personality and humanity of the era in ways that cannot be done by simply recalling names, dates, and events. Furthermore, by consolidating the two classes many of the skills that are developed in traditional English classes, specifically reading and

writing, naturally lend themselves to studying history. The idea of being able to engage students with both the content of SS and LA is filled with possibilities, but the question of whether such integration is effective quickly becomes apparent: does research support it? While this paper is not an argument for the efficacy of interdisciplinary curriculum, but rather *an examination of strategies and considerations that need to be taken into account when implementing such a program*, the primary goal in implementing such strategies is to produce an educational experience that is both educationally fruitful and rich in experience (Dewey, 1997).

The notion that LA and SS naturally lend themselves to one another is supported by many educational theorists and researchers (ex. Beck & Jeffery, 2009; Adler & Flihan, 1997; Carter, 1997). Additionally, the available literature provides many insights into the other benefits of curriculum integration that are broad in scope. One of the most prevalent arguments in support of interdisciplinary studies is the fact that it

encourages *transfer*, which is defined by Bransford, Brown, & Cocking (2000) as “the ability to learn what has been learned in one context to new contexts” (p. 51). John Dewey (1997) argued that when disciplines are segregated, content “is so disconnected from the rest of experience that it is not available under the actual conditions of life” (p. 48). It is argued that integrated curriculum is more capable of reflecting “real world” problems and scenarios, encouraging transfer and reflecting “the cultural conditions of life” (Applebee, Adler, & Flihan, 2007; Stovall, 2006).

Another reason that many propose implementing interdisciplinary curriculum is for increased communication and depths of relationships between teachers and students, teachers and teachers, students and students, and the community at large. There are several dimensions to the reasons why interdisciplinary curriculum can increase communication and depth in relationships, and they largely depends on which of the available approaches to integrating curriculum is implemented. While there are many more benefits of this kind of instruction that could be addresses, these will be the primary ones that are seen within the context of this paper.

Concerning the critiques of integrated curriculum, they are limited in number, but prevalent and recurring in the academic literature. The primary argument against integration is that sufficient curriculum resources and time are not available to successfully integrate courses (Applebee, Adler, Flihan, 2007; Carter, 1997; Post, Humphreys, Ellis, & Buggey, 1997). Another recurring concern is that one discipline often ends up taking the preeminent role, dominating the other disciplines, making them at best a backdrop for the discipline that has taken the lead role (Applebee, Adler, Flihan, 2007). Similar to that concern is the fear that the integration

process itself will take up to much time and concentration from both the teacher and students, detracting from both of the disciplines themselves (Carter, 1997). Fortunately, each one of these concerns is rooted in the ways that curriculum integration is implemented rather than being natural byproducts of it.

One of the most significant limitations of this paper is the overarching intent, which is not to turn to curriculum integration as a cure-all for all of the ills that plague modern education. Rather, curriculum integration is suggested as one part of a larger package of pedagogical practices that improve both the experience and educative value of school (Mertens & Flowers, 2003). This is an imperative element of this paper, for no matter how well content is integrated and balance is achieved, if students are kept from high order thinking their education is going to be of a generally lower quality (Carter, 1997). While the entirety of pedagogical practices that curriculum integration aids will not be covered in this paper, many of those practices will naturally emerge as essential elements of effective strategies.

As should be evident from everything stated so far, this paper will primarily focus on secondary LA and SS¹, which when integrated into one class are referred to as a humanities class. There are many valuable studies available outside of this scope, especially concerning the integration of science and math with either or both of these disciplines, but for the sake of my own current aspirations and the limited length of this paper I will be limiting my research to the given realm. Some of the studies considered do involve the integration of other disciplines in addition to LA and SS, but such instances are not the primary consideration. Lastly, while the grades being covered within this paper range from 6-12, the differences between the lower and upper

grades will not be attended to. This is not to deny the fact that there are differences that occur within the given range, but rather reflects the lack of research addressing this question available within the field. This is certainly a question that deserves future research attention.

Literature Review

When examining the possibilities for curriculum integration the range of ways that it can be approached is broad. Integration can take place within a single classroom with a single teacher (individual teaching), it can occur within multiple classrooms with multiple teachers (block teaching), or it can occur within a single classroom with multiple teachers (co-teaching). While the first two options are far more common of practices than the third, these three options represent the general range of structures that can be used for curriculum integration. In addition to the different classroom configurations there are also different degrees to which content can be integrated. Adler and Flihan (1997) provided a helpful lens for identifying the varying degrees of integration with their “interdisciplinary continuum.” The

continuum beings with *correlated knowledge*, where traditional subjects keep their traditional forms but parallel one another by common themes or topics. Connections are implicit, being left for students to synthesize in their own minds rather than explicitly in class. Next is what they labeled *shared knowledge*, in which the separate disciplines are explicitly integrated by content and themes, but sustain their unique identities. And at the far end of the spectrum is *reconstructed knowledge* where traditional disciplines are synthesized and lose their disciplinary divisions. By combining the range of classroom configurations and the interdisciplinary continuum a spectrum is created which contains the array of ways in which curriculum integration can take place (see Table 1). Rather than analyzing each one of the 9 configurations individually, I consider a broad range of strategies, some that apply to the entire spectrum and others that only apply to select regions.

In examining the relevant strategies, those that are applicable to the broadest range of the spectrum will be presented first, followed by those with decreasing levels of application.

Table 1 - Interdisciplinary Spectrum

| | | Integration Configurations | | |
|-----------------------------|-------------------------|-----------------------------------|----------------|-------------|
| | | Individual Teaching | Block Teaching | Co-Teaching |
| Interdisciplinary Continuum | Correlated Knowledge | | | |
| | Shared Knowledge | | | |
| | Reconstructed Knowledge | | | |

Attend to Disciplinary Boundaries

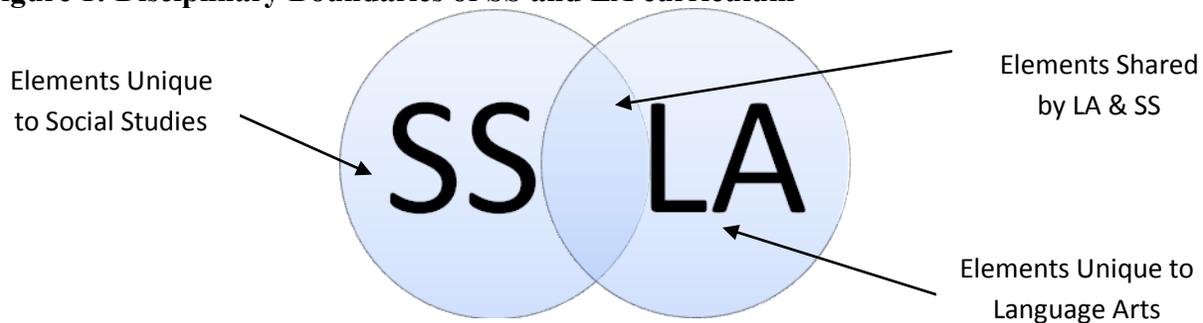
When integrating content from multiple disciplines it is crucial that the distinct elements of different disciplines are not lost. In the effort to integrate LA and SS the point is not to deny that there are certain

skills, concepts, and content areas that are unique to each of them, but to point out that there are some elements that are shared by SS and LA and other areas that can conveniently lend themselves in support to one another (see Figure 1). When

developing integrated curriculum, research indicates that these disciplinary boundaries need to be tended to so that one discipline does not end up dominating the other, either neglecting the elements of the other discipline, superficially covering them, or

failing to embrace the ways that they support one another (Applebee, Adler, & Flihan, 2007). The following set of studies each addressed this situation, providing helpful insights relating to disciplinary boundaries.

Figure 1: Disciplinary Boundaries of SS and LA curriculum



In order to understand the impact that content integration has on individual disciplines Applebee, Adler, and Flihan (2007) examined multiple interdisciplinary teams that represented different positions on the interdisciplinary continuum, concluding that disciplinary values and activities did not disappear in any of the teams studied. This mixed method study examined 11 interdisciplinary teams from the U.S. of varying grades, all at the secondary level, which represented diverse ethnic and socio-economic classes. All of the teams selected incorporated SS and LA, with 6 of the classes incorporating one or more additional discipline. Data for the study was gathered through extended interviews with students, administrators and teachers, classroom observations, student work, and field notes and was analyzed with both qualitative and quantitative measures. In order to determine where each class fell on the interdisciplinary continuum they were assessed for the minutes of interdisciplinary content per hour of instruction and the level of connections among the disciplines. This analysis was preceded by an evaluation of the level of

disciplinary integrity that was sustained through the course of study. While it was demonstrated that on some occasions key elements of one discipline were shortchanged for those of another, this was never seen to be the predominant pattern.

Among the findings, Applebee, Adler, and Flihan (2007) observed that teachers who were more flexible with their positioning along the interdisciplinary continuum had more control of their classes. Yet, when the interdisciplinary curriculum was treated more rigidly, negative results were observed. “Teachers who felt that their subject was being eroded or that the demands of interdisciplinary work were too time consuming, began to be dissatisfied; some eventually left their teams” (p. 1034). If the teams didn’t fall apart because of rigid commitments to integration, the product was often “unnatural disjunctions in the curriculum” (p. 1034-5). One example of temporary dis-integration occurred at the end of a unit on World War II era where students also read *The Grapes of Wrath*. When the unit was completed students had not yet finished reading their novel. Instead

of rushing the student through the novel or arbitrarily extending the unit until it was finished, the teachers made the decision to temporarily separate SS and LA so that the novel could be completed and the necessary SS content could be covered as well. The results of the study suggest that this kind of flexibility is essential in order to maintain disciplinary integrity and so that in instances where the two disciplines do not align or support one another they can be integrated to a lesser degree, or even temporarily separated.

Another study that was closely related focused on the specific ways that skills and concepts relating to both SS and LA overlap, serving as scaffolding for one another. As Beck and Jeffery (2009) sought to better comprehend their “knowledge of the relationship between disciplinary understanding and writing performance” (p. 238) they demonstrated that SS and LA can lend themselves to one another in the development of student writing. In a high school located in a large metropolitan district in the northeastern United States which consisted primarily of Latino and Asian students whom (99%) qualify for free- or reduced-price lunch, Beck and Jeffery used retrospective interviews to assess students’ disciplinary understanding. In the interviews students reflected upon a range of writing assignments by sharing their understanding of the writing goals, instructional preparation they received, personal challenges in the writing process, and strategies they used to address their challenges. Additionally, excerpts from students’ writing were examined in correlation with the interview information.

One of the most helpful findings included using the subjective and personal nature of writing about literature to develop writing skills that are relevant to both LA and SS. During their interviews, students expressed “a preference for writing tasks

that allowed them to express their opinions” (p. 250). As the objective of both the LA and SS classes was to develop students’ interpretive understanding, and the writing tasks in LA were more accessible to students’ experiences, they were able to serve as scaffolding for developing the skill necessary for SS as well. This was demonstrated through Nessa, who, through a LA writing assignment, “learned to appreciate the important criteria of coherence and idea development in academic writing” (p. 250), a concept that is relevant to both LA and SS. In a similar instance, Ayesha was able to identify thematic inter-textual connections, a concept related to both LA and SS, when writing about the novel *Animal Farm*. While these examples, and others given in the study, clearly demonstrated students developing skills relevant to both SS and LA, it did not make clear whether students were able to then transfer those skills over to SS. In fact, the interview results indicate that students did not yet transfer the skills because they still thought of SS as being objective and fact based, not requiring interpretation or analysis. What the study does demonstrate, however, is the beginning stages of a process that could be used to scaffold thinking and writing skills essential for SS.

During another part of the study similar results were recorded, but with more explicit connections to SS. Nessa was assigned a creative writing task in which she was to assume the perspective of a participant in a historical situation in order to develop historical empathy. While this task was not necessarily grounded in evidence-based reasoning or historical reflection, it was concluded by the researchers that with the right scaffolding from a teacher, this task could guide students towards evidence-based historical understanding. The researchers also indicated that the kind of thinking she

demonstrated in her writing task was “an important precondition for evidence-based reasoning about history” (p. 259). While this instance did not fully bridge the gap between the LA learning targets and the SS learning targets, it is likely that the students did not attain the SS targets because they were not conceptually ready.

The fact that this study was able to describe the specific interplay between LA and SS made it a helpful window into one way that both disciplines relate to and can aid one another. The specific scenarios given in this study, however, may have limited transfer to other contexts by the fact that not all students will be engaged by the kinds of subjective writing assignments that were used.

A third study (Miller, 1997) demonstrated ways that both disciplines can provide access to themes, where each plays a unique role in the process of inquiry. Through this ethnographic study, Miller examined 3 high school humanities classes taught by a two teacher team over a two year period in order to examine “how students learn to make sense of multicultural texts in the context of history study” (p. iv). While the school that was being observed contained mostly Caucasian, middle-class students, one of the classes observed contained a diverse range of students from multiple ethnic groups and socio-economic classes. Miller and her research assistant collected data as participant-observers, using field notes, interviews, curriculum artifacts, observation notes, transcriptions of lessons, and selections of student writing in order to provide descriptions of the ways in which LA and SS contribute to one another in addressing themes and concepts.

A helpful distinction made in this study (Miller, 1997) was that “empirical narratives of history attempt to tell the way it was in the world, while the literary narrative of the novel tends to tell of the

inner human struggle” (p. 59). In other words, SS and LA have completely different approaches to the ways in which they tell stories about life, both being essential parts of one whole. While in one sense the boundaries between the disciplines were blurred, since they were both incorporated in to the study of individual themes, they were also able to keep their distinct identities since each had unique contributions to their studies. For example, during a discussion of *The Scarlet Letter* several topics that were raised by the text required historical inquiry. One example surrounded the word “elf.” As students tried to determine what kind of connotation was attached with the word they had to think about the historical context and consider how the people in that time and place would have thought about such a thing. During another discussion as students discussed the text, at one point questioned “what Puritan values are expressed?” (p. 23), a question dealing with the historic people, while at another point they asked “what does Hawthorne think about these values?” (p. 23), a question which demand literary analysis. Both disciplines were a necessary part of the inquiry, as each added its unique contribution.

While the conversation around *The Scarlet Letter* provided a helpful example of the interplay between LA and SS it also demonstrated the need to have clear distinctions between the disciplines at times (Miller, 1997). During one conversation students failed to recognize the need to read fiction critically for its historical accuracy. During their discussion of *The Scarlet Letter* the students assumed that it represented an accurate portrayal of Puritan life and culture. Their assumptions can be seen in the following description of their conversation: “As they began to list ‘Puritanical things,’ they came up with, ‘They kill you if you did anything,’ ‘They kill witches,’ ‘the “A” was a Puritan thing” (p. 23). This conversation

was followed by no critical investigation as to whether this literary portrayal of Puritans was an accurate picture of the historical people, failing to make the necessary distinction between literature and history.

No matter where a class falls on the interdisciplinary continuum, these studies show that there are places for both integration and isolation of individual disciplines. Teachers who integrate using *correlated knowledge* should attend to the ways that their curriculum can be further integrated to take advantage of the unique ways that the different disciplines complement one another. Teachers who integrate using *reconstructed knowledge* need to continually attend to interplay between the disciplines, assessing whether attention to one is taking away from that of the other. For either situation it is imperative that teachers are self-conscious of where they stand on the continuum and how it is impacting student learning.

Balancing Content and Form

One of the common complaints against curriculum integration is that there are not enough curriculum resources and that by integrating their curriculum teachers are likely to compromise the educative value of their teaching. Carter (1997) developed helpful criteria for analyzing this problem by identifying the need to balance *content*, the knowledge based of the curriculum, and *form*, the skills, activities, and attitudes experienced and developed. Carter argued that both elements are necessary, and if one heavily outweighs the other then educational experiences of the students will be compromised.

An example of form outweighing content was demonstrated in an observational case study conducted by Carter (1997). This study provided a description of one humanities class and assessed it for its ability to balance content

and form. Through participant observation three to four times a week over a twelve week period, Carter was able to gather data via field notes, artifacts, surveys, and interviews from a class that was taught by Mr. Strong, an experienced LA and SS teacher, with 30 heterogeneous seventh grade students. Carter concluded that while Mr. Strong created an impressive curriculum that was well planned out, it lacked sufficient assessment and had a greater focus on the form than the content.

While Carter's (1997) final analysis of Mr. Strong's class was that he did not adequately balance content and form, a more appropriate assessment seems to be that the kind of form that he incorporated into his class provided limited access for students to engage content in meaningful and constructive ways. In his integrated humanities class Mr. Strong had an extensive, even burdensome, chronology of world history to cover, which was noted by Carter to be under revision by the state of California. In attempt to cover the extensive range of content he designed his curriculum around themes rather than chronology. Carter noted that Mr. Strong's themed approach "fragmented the content of the course while overlooking the chronology of human events and the important relationship between those events" (p. 62). While Carter did not attribute this solely to the themed approach taken by Mr. Strong, noting that it is an area that should be further researched, he did make clear that it did have a significant impact on the content focus. Furthermore, Mr. Strong did not incorporate any assessment, formative or summative, of content knowledge, placing all of the assessment on form, specifically reading and reporting. His lessons primarily focused on students reading their textbooks and reporting on what they read, either through written reports or presentations. Through these activities the students were said to be

functioning like reporters, as “the students did not shape their history” (pg. XX) but rather they retold and wrote what they read in their text. While Carter’s analysis that form outweighed content makes sense, it seems that if Mr. Strong’s had incorporated form in a way that “aimed beyond classroom performance towards acquisition and application of knowledge, in [students’] world” (p. 68) then the content that they were given would have been more relevant, applicable to their lives, and a more significant part of their education.

In contrast with Carter’s (1997) study, Stovall (2006) conducted an ethnographic study which demonstrated the use of form to support access to specific content, but with limited results concerning the educative impact of such activities. In this study, Stovall served as a researcher-as-teacher, seeking to answer the question: “Can hip-hop, as an element of popular culture, be utilized as a central theme in developing critical pedagogy in secondary social studies curriculum?” (p. 585). Stovall conducted six workshops that took place in a social studies class in a Chicago high school, which consisted of 19 African American and Latino students. In order to understand the effect of the workshops on student engagement, specifically the role of hip-hop in their experience, a student survey was conducted, and students’ journals, field notes, and a videotape of a class session were analyzed. While the class in which this study was conducted was not specifically an integrated class, the workshops demonstrated an interdisciplinary use of both content and form.

Through the study, Stovall (2006) was able to engage students in critical thinking through the discussion of certain hip-hop songs. With the objective of guiding students towards becoming active participants, where they are able to use “daily life as subject matter...to envision a

social order which supports their full humanity” (p. 589) several hip-hop songs that touch on various social and historical issues were listened to, their lyrics were read, and the content was discussed. Through these lessons students were able to discuss themes relating to deception and perception of reality, specifically as it pertains to the record industry, school, and studying history. These activities served as an access point through two issues from the Civil War era were discussed: slavery and Abraham Lincoln. Through this process students were able to connect historical content with their personal lives by identifying the predominant paradigm through which the world is often presented, addressing the need for more perspectives to challenge deception both in learning history and the world in which they live. This lesson serves as a contrast with Mr. Strong’s class, as students were engaged in the kinds of processes that are necessary to make use of SS, which Mr. Strong’s class appeared to lack. While the data recorded in this study makes it difficult how many connections were made with substantial SS content, it was able to model one way of providing students a skill (form) which allows for them to access content in a meaningful way.

The challenge of attending to the balance between content and form is a something that any teacher/teachers who are integrating curriculum need to be aware of, irrespective of where they fall on the spectrum of interdisciplinary approaches. One strategy which may help in balancing content and form is the process of *backward design* (Wiggins & McTighe, 2005) in which the desired results of a lesson or unit are identified as the first stage of the planning process. If a teacher is designing their interdisciplinary content using the backward design process they could assess their balance of objectives relating to content and form at the before they even

design their specific lessons. Also, as seen in the conclusion of Carter's (1997) study it is not just a matter of balancing content and form but making sure that the kinds of skills that forms which are included provide meaningful points of access for the given content. One way that this may be done is by incorporating questions that provide access to higher orders of thinking (e.g.: Walsh & Sattes, 2005) to stimulate the kinds of conversations demonstrated in Stovall (2006).

Working in Teams: Colleagues as Resources

Since one of the most common ways to approach curriculum integration is through teams, ways that teams can best function as resources for a teacher is a necessary consideration. Each of the following studies addresses one or more aspects of teacher collaboration in teams, providing insights and strategies for teachers to consider.

The first study is a qualitative case-study that, while limited in its conclusions, provides a helpful lens for thinking about ways that teachers can collaborate in teams. Havnes (2008) video-recorded two Interdisciplinary Teacher Teams (ITT) in lower secondary schools in Norway and examined what teachers say *in* interdisciplinary teams in order to identify patterns of teachers' talk and collaboration and potential implications of those patterns for classroom practices. As the study did not assess any of the classroom practices of the teachers in the teams, implications for classroom practices were:

expected to be inherent in the ways in which the teachers interacted as professionals, how the diversity of expertise emerged in the team-talk, and how the team-talk prepared the ground for shared practice, interdisciplinary teaching, collegial

'we-ness' and professional development of the team members and the team as a group. (p. 170)

Four patterns of team talk were identified, each with different contributions to teachers' practices. The first two patterns, observed in the first school, were *preserving individualism*, where teachers avoided collaboration, dividing activities amongst themselves, and *coordination*, where teachers simply correlated their work and tasks to accomplish their goal. Neither of these patterns included time or initiative "to discuss the substance of teaching – its content and process" (p. 165). It was concluded that the interactions which followed these patterns likely created an extra burden on the teachers as there was no evidence that the ITT provided any positive impact on the teachers' teaching or practice. The other two patterns, observed in the second school, were *cooperation*, where teachers shared the responsibility for teaching the same students in close collaboration, and *sharing*, where the teachers discussed the premises that informed their teaching practices. These patterns were accompanied by marked levels of productivity, beginning with the teachers' conversations, engaging students in activities, and reevaluating and adjusting their practices as they progressed in their unit.

After the observations took place and the patterns were identified Havnes (2008) analyzed the patterns according to set definitions of "strong" and "weak" communities. Strong communities were defined by increased collaboration, mentoring, and honest feedback, while weak communities were defined by "a technical culture and an absence of conversations about teaching" (p. 171). The first school, which involved the first two patterns, was identified as being a weak community, while

the second school, which involved the second two patterns, was identified as a strong community. The primary difference between the two centered around two factors: a shared motivation and task and sharing of premises that inform teaching practice. The first factor was seen in the second school as the teachers were working with the same students toward the same goals and the second was seen in continual conversations relating to pedagogy. The second was seen in discussions where teachers' addressed their pedagogical assumptions, challenged one another, and made adaptations accordingly.

While this study did not prove the efficacy of any of the patterns of communication, it did establish a lens for which teaming efforts can be better understood. If one agrees with the assumed premises and definition of a strong community, there should be an endeavor to emulate the patterns of cooperation and sharing. It *may* be inferred from school two that having a shared group of students and a shared task will support these patterns, but this cannot be said with certainty from this study.

Strahan and Hedt (2009) conducted a case study which demonstrates how teaming can be used to support teachers' professional development. For two years the researchers examined two middle level teachers, one math and science and one humanities, as they worked with a literacy coach from the local university (Hedt) with the purpose of integrating reading and writing in their curriculum and creating connections with reluctant students. The study took place at a middle school in North Carolina which serves over 600 heterogeneous students. As a participant observer, Hedt collected data via field notes, interviews, lesson descriptions, and student work samples, and collectively with Strahan identified themes

that contributed to professional growth in teams.

Through their study Strahan and Hedt (2009) presented a powerful picture of what can be accomplished when teachers combine their collective resources and knowledge. The primary area of collaboration included assessing students' needs, co-teaching strategy lessons, unit planning, and identification of resources, in addition to working with the literacy coach as a "guide on the side" and meeting with the project director twice a month. Through their collaboration there was much personal growth in the teachers that was both quantitatively proven and personally testified to. Through their work together, students of these teachers showed marked growth in both reading and math that was greater than the average gain for the grade level. Additionally, both teachers and their coordinating literacy coach testified to personal growth in each of the teachers. One of the teachers was recorded to have said, "teaming is an invitation to reinvent teaching because our conversations lead us to see that there are other possibilities" (p. 2). As new and ambitious teachers, these two served as an exemplary model of the gains that can come through colleague collaboration, both for personal gain and academic excellence.

While the official conclusion of Strahan and Hedt was that "teachers improve their practice in a non-linear, spiraling fashion fueled by relationships as well as by the interpretation of data from students" it is difficult to know that it was the teaming and data that necessarily improved their practice. This is because both of the observed teachers were noted on multiple occasions for their exemplary zeal for teaching and growing as teachers, making it questionable whether the same kind of conclusion would be drawn from an example with less eager teachers. None the

less, the research provided a helpful example of things that teachers can do in teams and some potential outcomes of such collaboration.

Mertens and Flowers (2003) add to this research by showing that in addition to interdisciplinary collaboration, high levels of common planning time promote student achievement. The quantitative study was based on the Self-Study Teacher Survey which evaluated 121 schools in the Mid-Southern U.S. for two school years in order to measure the impact of common planning time on teacher practices. They examined block teaching configurations, with four teachers from the core disciplines sharing common students and planning periods. Schools were first assessed for the amount of common planning time that occurred within the teaching team on a weekly basis. "High levels" of common planning time was defined as a "minimum of four meetings per week, with each meeting lasting at least 30 minutes" (p. 6) and "low levels" of common planning time was defined as anything less than "high levels." Schools were also assessed for their incorporation of "effective strategies for promoting student success" (p. 2) according to two measures: (i) *team practices*, which included communication over curriculum, over students, with parents, and with building resource staff, and (ii) *classroom practices* which included small group active instruction, integration and interdisciplinary practices, authentic instruction and assessment, critical thinking practices, reading skill practices, writing skill practices, and mathematical skill practices. The concluding results indicated that teachers with "high levels" of common planning time ranked significantly higher on team-practices and slightly higher on classroom practices than the group with "low-levels" of common planning time. The other/no-teaming group ranked lowest on both scales. While this study particularly

pertains to teachers in block configurations, it again reinforces the notion that teachers who collaborate in their teaching efforts, especially with significant amounts of time dedicated to such collaboration, are likely to see many benefits in their teaching practice.

Student Social Bonding and Teaching Configurations

In counting the cost if different approaches to curriculum integration it appears that one of the significant considerations that need to be made relates to the social impact that different interdisciplinary teaching configurations have on students. In some instances teachers integrate their curriculum alone, working in isolation from any other teachers, others work in teams with other teachers from the core disciplines. The size of teams can also vary depending on whether there are four teachers who one teacher a core discipline or two teachers who each teach two disciplines together. In order for teachers to determine which configuration is best for their context insights from research may provide a helpful window for making that decision. Both of the following quantitative studies address the effect of blocked teaching has on the social bonding of students.

Arhar (1990) conducted a quantitative study in which teamed and non-teamed teaching configurations were compared in order to measure students' perceived levels of social bonding with their peers, school, and teachers. Included in the study were eleven teamed and eleven non-teamed schools that were match paired and evaluated in light of one another. The schools chosen for the study were located in four major regions of the United States that were both suburban and urban districts, and represented students of diverse ethnic and socio-economic status. Students from each of the schools were surveyed and assessed with "The Social Bonding Scale" which

included seven questions related to peer bonding, nine related to school bonding, and nine related to teacher bonding. The researchers concluded that schools that used team teaching demonstrated stronger school and teacher bonding overall, but no significant difference on peer bonding. While the data shows that there is significant reason to believe that teaming has *some* difference on student bonding with schools and teachers, there were enough instances where no significant difference or even difference that favored non-teamed schools, to indicate that other configurations may encourage bonding as well. Also, since the analysis did not attempt to discern which student groups were most or least affected by teaming it leaves reason to question whether students from certain social groups are more likely to benefit from teaming than others.

In a similar quantitative study that also to measure students' perceived levels of social bonding with their peers, school, and teachers, Wallace (2007) surveyed ten middle schools in Wisconsin, five that configured their teacher teams in twos (L2), a SS and LA teacher and a science and math teacher, and five that configured their teacher teams in fours (C4). Students from each of the schools were surveyed and assessed with the same tool used in Arhar (1990). The results indicated that social bonding with peers and schools was significantly higher and L2 schools, and bonding with teachers was only slightly higher in L2 schools. The results from this study may be limited by the fact that it took place in Wisconsin, which is generally more of a rural state. With this in mind it is difficult to say if students in more urban settings would have the same response to the given conditions. This study also shared the limitations mentioned in study conducted by Arhar with the addition that both this study and Arhar's consisted solely of 6th and 7th

graders which makes it difficult to know how these configurations would affect students in upper grade levels.

While both of these studies are limited in the conclusions that can be drawn from them, they do provide some helpful insights. First, they point to the necessity of attending to the effect of the teaching configuration which is implemented. While it is difficult to say which configuration will be best for all situations, these studies do show that certain configurations do make a difference on student bonding. Secondly, both studies indicate that teams benefit student bonding at least at lower secondary levels, which reinforces the previous section, showing that teaming can benefit students as well as teachers. For teachers that are interested in knowing more about teaming in their specific context further research should be done to decide which configuration may best serve their students.

Conclusion

While this paper was by no means able to exhaust the possible strategies and considerations to be made when integrating curriculum, it hopefully accomplished at least three things: First, made clear the diversity of options for integration, addressing the *kinds* of considerations that should be taken into consideration when deciding on a configuration. Second, demonstrated the necessity of being firmly grounded in their disciplines, having clear goals and purposes as they integrate curriculum. Third, encouraged intentional and purposed teaming with colleagues. And, fourth, evoked questions of further study related to the specific benefits and drawbacks curriculum integration.

For the teacher that desires to incorporate curriculum integration into their teaching approach, there is a diverse array of approaches that may be taken. Depending on what kind of goals a teacher is trying to

attain, different approaches to interdisciplinary teaching may be more appropriate. For example, if a teacher is highly concerned about the social bonding of their students, which is often a concern in sixth and seventh grade, teaching a humanities class individually as part of a two team with a science and math teacher may be the best approach (Arhar, 1990; Wallace, 2007). If a teacher is primarily concerned about a specific skill set or disciplinary goal and knows of ways that disciplines attend to one another, a reconstructed view of knowledge may be the best way of integrating the curriculum (Beck & Jeffery, 2009; Miller, 1997). And, likewise, if a teacher has a specific area of content that is relevant to only one of the disciplines, they may want to take more of a correlated approach to integrating knowledge (Applebee, Adler, & Flihan, 2007).

Another implication of many of the studies is the necessity of teachers being firmly grounded in their discipline, understanding the underlying concepts of them individually. The necessity of being firmly grounded in ones disciplines can be seen in the necessity of attaining to disciplinary boundaries, for attending to the boundaries presupposes that the teacher knows, at least to some extent what the boundaries are (Beck & Jeffery, 2009; Miller, 1997; Applebee, Adler, & Flihan, 2007). The same thing goes for balancing content and form, as a teacher must know enough about their disciplines to know which elements are most important to attend to (Carter,1997; Stovall, 2006). The necessity of being proficient in one's discipline does not mean that a teacher must be an expert in it, but rather indicates that they should adopt the disposition of a lifelong learner, a characteristic that was demonstrated by the exemplary teachers in both Miller's (1997) and Strahan and Hedt's

(2009) studies. The need for teachers to be lifelong learners may be most evident by the diverse ways in which disciplines complement one another, pointing to the fact that even experts in both disciplines can always be exploring ways in which disciplines support one another. The ways that disciplines intersect with one another and support one another is also an area in which new research could be conducted, as demonstrated in Beck and Jeffery (2009).

Since many teachers who integrate curriculum work in teams it is also of upmost importance that teachers are aware of how to make the most use of their time when working together. Strahan and Hedt (2008) illuminated the wealth of resources that can accompany collaboration with colleagues and that by seeking help and resources ones eyes can be opened the resources available to them. Mertens and Flowers (2003) provided reasons to believe that spending regular amounts of time in intentional collaboration can encourage greater levels of communication within one's community and higher levels of cognitively engaging instruction. While the conclusions from Havnes (2008) study were minimal, there was at least a significant reason to believe that working in teams that have a shared task and objective will promote greater levels of collaboration and reciprocity with colleagues. However, with the limitations of each of these studies they should all encourage teachers to seek research that speaks to their own context and goals in order to discover teamwork strategies that may best help them.

One question that arose that was not necessarily part of the initial question, relates to teacher enthusiasm and zeal. In many of the studies it was noted that the teachers selected were chosen because of their excitement or excellence in their practice as teachers. I specifically address this because it was always questionable

whether the success of a given practice was due to the enthusiasm of the teacher or the practices in which they were engaged. Further research in this area could provide more clarity into the specific relation to integrated curriculum and teacher success.

While my purpose in this paper was not to present curriculum integration as a panacea for all the ills that plague our school systems, my hope is that this research provided enough of a window into the world of curriculum integrations that teachers may see it as a worthwhile approach to teaching. Furthermore, I hope that those who either are now or plan on integrating curriculum in the future will find insights and strategies that both stimulate and encourage their integration practices.

For the sake of this study, SS and history will be used synonymously as there is generally little difference, if any, between these two titles when used in secondary education.

References

- Adler, M., Flihan, S., & National Research Center on English Learning and Achievement, A. Y. (1997). *The Interdisciplinary Continuum: Reconciling Theory, Research and Practice. Report Series 2.36*. Retrieved from EBSCOhost.
- Applebee, A., Adler, M., & Flihan, S. (2007). Interdisciplinary Curricula in Middle and High School Classrooms: Case Studies of Approaches to Curriculum and Instruction. *American Educational Research Journal, 44*(4), 1002-1039. Retrieved from ERIC database.
- Arhar, J. (1990). Interdisciplinary Teaming as a School Intervention to Increase the Social Bonding of Middle Level Students. *Research in Middle Level Education: Selected Studies 1990*.
- Beck, S., & Jeffery, J. (2009). Genre and Thinking in Academic Writing Tasks. *Journal of Literacy Research, 41*(2), 228-272. Retrieved from ERIC database.
- Bickmore, D., Bickmore, S., & Hart, L. (2005). Interdisciplinary Teaming as an Induction Practice. *NASSP Bulletin, 89*(644), 30-53. Retrieved from ERIC database.
- Bransford, J.D., Brown, A.L., & Cocking, R.R. (Eds.). (2000). How people learn: Brain, mind, experience, and school. Washington, D.C.: National Academy Press.
- Carter, C. (1997). Integrated Middle School Humanities: A Process Analysis. *Teacher Education Quarterly, 55*-73. Retrieved from Google.com.
- Dewey, J. (1938/1997). Experience & education. New York: Simon & Schuster.
- Havnes, A. (2009). Talk, Planning and Decision-Making in Interdisciplinary Teacher Teams: A Case Study. *Teachers and Teaching: Theory and Practice, 15*(1), 155-176. Retrieved from ERIC database.
- Mertens, s. & Flowers, N. (2003). Middle School Practices Improve Student Achievement in High Poverty Schools. *Middle School Journal, 35*(1), 1-13. Retrieved from Google Scholar.
- Miller, S. (1997). Making the Paths: Constructing Multicultural Texts and Critical-Narrative Discourse in Literature-History Classes. *National Research Center on English Learning & Achievement, 7.8*.
- Post, T., Humphreys, Al., Ellis, A., Buggey, L. (1997) Interdisciplinary approaches to curriculum: Themes for Teaching. Columbus, Ohio: Merrill.
- Stovall, D. (2006). We Can Relate: Hip-Hop Culture, Critical Pedagogy, and the Secondary Classroom. *Urban*

- Education*, 41(6), 585-602. Retrieved from ERIC database.
- Strahan, D., & Hedt, M. (2009). Teaching and Teaming More Responsively: Case Studies in Professional Growth at the Middle Level. *RMLE Online: Research in Middle Level Education*, 32(8), 1-14. Retrieved from ERIC database.
- Wallace, J. (2007). Effects of Interdisciplinary Teaching Team Configuration upon the Social Bonding of Middle School Students. *RMLE Online: Research in Middle Level Education*, 30(5), 1-18. Retrieved from ERIC database.
- Walsh, J.A. & Sattes, B.D. (2005). Quality questioning: Research-based practice to engage every learner. Thousand Oaks: Corwin Press.
- Wiggins, G. & McTighe, J. (2005). Understanding by design. Columbus: Merrill Prentice Hall.

Scaffolding Interdependence for Group Work

Analyzing ten peer-reviewed, empirical studies, this literature review discusses the following three theoretical perspectives of cooperative learning: motivational, social cohesion and cognitive development theories. The question, "What are effective strategies to scaffold interdependence for group work" provides a limit to the exploration of each theory. Participants in the studies were students ranging from grades 1-16, representing a range of cultural backgrounds. One implication for practice is that the way a task is designed and presented affects student perceptions of ability and performance. Another implication for practice is that power dynamics can be intentionally addressed for student learning. Delegation of authority is a useful strategy. Another conclusion for practice is that successful group work requires students practicing specific skills. A final conclusion is the importance of working for balance between individual learning and group management as well as short term and long term effects. Findings from theory are that motivational theorists documented student achievement by motivating individuals to work together, social cohesion theorists developed research on status to create equitable interactions, and cognitive developmental theorists emphasized understanding of disciplinary content. The studies show different approaches to delegating of authority, presenting conceptual thinking and supporting learning for all students. Because of the large volume of research, it is helpful to see how the different theories relate.

While student teaching in a fifth grade class, I saw students looking energized during the social interaction of group work. Group work impressed me as a way for students to build on the power of their experiences and interests. One day during a group assignment, a student was not going along with the routine. He was not responding to directions. I guessed he was needing to sense his own power in his environment, but I wasn't able to engage him. Considering adolescents' growing interest in the evaluation of their peers and decreasing focus on teacher approval, working with peers is a way to help students connect with classroom material. In this case, it wasn't working. This gave me new questions about how group work can engage all students. In order to more effectively set up students to rely upon each other for shared success, this paper will explore how

to structure interdependence in the classroom. While group work can be a strategy for teachers to engage student interest, it must provide each learner with the structure to build onto his or her thinking skills.

One way for students to build thinking skills is through speaking. Small groups can provide each student more turns to speak than is possible in a large group. Research provides evidence that "students who regularly asked and answered questions did better on subsequent achievement tests than those who did not" (Strother, 1989, p.324). Building on this idea, Walsh & Sattes (2005) asked, "How can we give all our students the opportunity to ask and answer questions, to participate in discussions and recitations, and to think out loud?" (p. 13) Group work has potential to give all students the benefit of having their thinking heard, but it is

difficult to successfully implement. Students may dominate or withdraw from discussion. When this occurs, it is difficult to assess the thinking of all students.

To consider group work, it is useful to understand terms researchers have used for different kinds of interactions. Researchers in the field of cooperative learning have used the term *interdependence*. Cohen (1994) defined *cooperative learning* as “students working together on a collective task that has been clearly assigned” (p. 3). Johnson & Johnson (1989) defined *social interdependence* as, “when the outcomes of individuals are affected by each other’s actions” in ways that are cooperative or competitive (p. 23). The absence of interdependence is individual effort. Cohen (1994) explained *reciprocal interdependence*:

Each actor must exchange resources with others before the task can be completed. This contrasts with the many routine tasks used in cooperative learning where achievement depends on the stronger students helping the weaker students. This arrangement is also interdependent, but the interdependence is sequential as opposed to reciprocal—that is, one student’s performance is dependent on another’s, but the reverse is not true. (p. 8)

This paper will use the vision of reciprocal interdependence as a way to understand ten empirical studies. The concept of interdependence presents a way to see how related theoretical perspectives work. While the term interdependence is not used in all studies, aspects of its dynamic can be considered. These peer-reviewed studies were found through searching variations of “Interdependence in

Cooperative Learning” in PsycInfo and JSTOR databases.

The purpose of this literature review is to shed light on the rationales behind current practices. Researchers show different approaches to engaging student motivation and different priorities in the relationship between the process and content of learning. Skill with facilitating cooperative work is just one of many parts of effective teaching:

Students talking and working together is not a panacea for improving learning in the classroom. Gaining access to the learning tasks will do no good if those tasks are not well designed and capable of accomplishing the objectives of learning. (Cohen, Leechor and Lotan, 1999, p. 92)

As one starting place for effective teaching, this literature review will focus on the question, “What are effective strategies to scaffold interdependence for group work?”

Literature Review

The field of cooperative learning includes theoretical frameworks with different priorities between and within them. Slavin (1986) described the following four theoretical backgrounds: motivational, social cohesion, cognitive development, and cognitive elaboration. This paper will describe examples of each of the first three theoretical perspectives. The last category will not be explored because it emphasizes use of scripts and student writing, and this paper will investigate student verbal interaction.

Motivational Perspective

When considering interdependence, motivational theorists used interdependence as a tool for the goal of academic achievement and social interaction for all students. Key motivational theorists are brothers Johnson and Johnson (2009), who

promoted the value of cooperative learning. Historical context shows the need for an argument that cooperative learning had a role in education:

Cooperative learning was relatively unknown and unused in the 1940s, 1950s, 1960s and 1970s. During this time, there was considerable cultural resistance to the use of cooperative learning, based first on the social Darwinism that promoted interpersonal competition and sayings such as, 'It's a dog-eat-dog world,' and 'survival of the fittest.' In the late 1960s, after competition began to be criticized (e.g., Sexton, 1961), the cultural resistance switched to *rugged individualism*, that is, the view that strong individuals were built by isolating each students and having each student learn by themselves without interacting with classmates. (p. 365)

Johnson & Johnson developed research on motivating individuals to work together. *Social interdependence theory* stated that people are affected by the actions of others as well as by their own actions (p. 366). Johnson & Johnson traced this theory to “gestalt psychology at the University of Berlin in the early 1900’s...They posited that humans develop organized and meaningful views of their world by perceiving events as integrated wholes rather than as a summation of parts or properties” (p. 366). A founder of this school of thought, Kurt Koffka, expressed how groups of people are “dynamic wholes. Kurt Lewin developed this idea to specify that group members are affected by each other and ‘made interdependent through common goals’” (p. 366). Morton Deutsch further developed this idea and published

writing in the 1950’s and 1960’s that *positive interdependence* occurs when “individuals perceive that they can attain their goals if and only if the other individuals” in their group attain goals as well. Deutsch articulated different stages of interdependence and accompanying psychological processes. Johnson and Johnson (2009) connected this foundational knowledge into the field of education. Using their backgrounds in social and educational psychology, Johnson & Johnson (2009) scrutinized the requirements for motivating individuals to work together.

The first study to be reviewed looked at interactions in a sixth grade class in an upper middle class community. One of its goals was to increase access to learning. Lew, Johnson and Johnson (1986) worked to identify what motivates individuals to work together and see how relationships initiated during the experimental treatment developed after the treatment finished. Over a twenty-one week period, the study focused on interaction between four students who were rated as least desirable partners and the rest of the students. The four students, referred to as social isolates in the study, had low academic achievement in the current and former year, reading levels two grades below grade level, negative attitudes toward reading, and a low number of observed interactions with peers.

The study looked at how varying amounts of structure for working together affected achievement and social interaction. The first independent variable was the opportunity to interact with a partner as an alternative to working alone. The second variable was an assignment to work with group members and an assigned common goal. The third variable additionally included a reward (academic points) for each group member if all other group members received a certain score on the

vocabulary quiz. The fourth variable additionally had training in cooperative skills and extra points for each group member who demonstrated certain social skills. These independent variables were studied for their effect on the three dependent variables: (a) achievement measured by weekly vocabulary quizzes, (b) social interaction analyzed by observations and (c) interpersonal attraction. Interpersonal attraction was measured both by timed observations of how long students interacted with others and by student surveys before and after the treatments about which students each child would most and least like to work with.

This study's findings provide information on achievement and interaction. For the class as a whole, the most structured group experience resulted in significantly increased achievement. A conclusion was that in order for group work to result in student achievement, students must be taught skills for group work (p. 484). The study identified opportunity to practice social skills such as, sharing ideas and information, directing and checking to make sure everyone understood (p. 480) as well as the communication skills of "summarizing, directing, checking, information seeking, and tutoring" (p. 481). The study did not have an experimental group to measure results of training in group work without an extrinsic reward. Considering social interactions, it found that,

The socially isolated and withdrawn students became highly supportive and encouraging in their interaction with non-handicapped peers even nine weeks after the positive independence and group contingencies for doing so had been eliminated. These results supported the conclusion that the socially withdrawn and isolated

students learned the collaborative skills required to work effectively with their classmates and developed sufficient self-confidence to use the skills spontaneously and voluntarily. (p. 485)

This study showed academic achievement increased as a result of interactions, and documented withdrawn students contributing to class with the skills gained through practice.

Talmadge, Pasarella & Ford (1984) looked at how school context relates to cooperative learning for academic achievement in grades 2-6. To identify influences on student achievement in reading and language arts, they looked at (a) teacher training, (b) teacher attitudes about cooperative learning, (c) teacher demonstration of cooperative learning practices, (d) student perception of cooperation, and (e) student achievement in reading and language arts. In a three-year study, researchers looked at the difference between teachers who did and did not participate in trainings about structuring goals for group work. Teachers participated in one year, two year, or three- year groups. Student perception of cooperation in the classroom was measured through a survey. Observers documented physical environment, classroom interaction, student behavior, and teaching (p. 167).

Acknowledging that measuring cooperative learning presents multiple variables, this study presented contextual information for the work of structuring interdependence. A key finding was that students need a certain amount of experience working in cooperative skills before "an influence on their learning is shown" (p. 175). Results also showed that increased training led teachers to have improved attitudes about and demonstration of

cooperative practices (p. 174). It also led students to have greater perception of cooperation in class and greater achievement for reading but not language arts (p. 174). Considering the lack of demonstrated achievement gain in language arts, a conclusion was that "what is being measured as cooperative learning (i.e. the *My Class Adaptations* worksheet) may fail to fully capture the dimensions of a cooperative learning environment that fosters increased student achievement" (p.175). This statement reflects the work of identifying which aspects of cooperative learning are necessary for academic achievement.

Studies from the motivational perspective inform this paper's guiding question by showing how theorists worked to provide evidence that cooperative learning leads to achievement. Johnson & Johnson (2009) described how this was needed to justify cooperative learning in environments that prioritized competition and individualism. In an editorial about current political issues in education, Au et al. (2010-2011) stated that, "there's an enormous push toward competition. The message is: 'save yourself'" (p. 7). In an environment of competition, cooperative perspectives present a contrast. Exposing students to the skills and understandings gained through cooperative learning can supplement or complement a student's prior learning. While the previous studies present ideas that are currently useful, they are at least twenty-five years old. Motivational theorists identified how cooperative learning could increase academic achievement and positive social interaction in the classroom. They researched what is necessary to set up interdependence between students. Researchers from following theoretical perspective used different tools to create learning opportunities for all students.

Social Cohesion Perspective

While motivational theorists used interdependence to reach achievement for all students, social cohesion theorists embedded interdependence into group tasks that needed contribution of each group member. Social cohesion theorists worked in a way that "is sociological in its stress on task and delegation of authority rather than on the more psychological concepts of common goals, rewards and needs for other individuals in the group" (Cohen, 1994, p.3). Working toward equitable interactions, Cohen (1994) stated that, "the hope is that by choosing to focus primarily on tasks and interaction rather than on interdependence, rewards and individual accountability, new light will be shed on some old problems" (p. 4). Whereas motivational theorists investigated how individuals could be motivated to work in groups, social cohesion theorists looked at patterns that can occur in any group of people. Following are some terms often used. Cohen (1994) defined status as "an agreed-on rank order where it is generally felt to be better to be high than low" (p. 23). Researchers from this perspective build upon Theories of Status Characteristics and Expectation States. Joseph Berger (1972) explained that, "status characteristics, such as age, sex and race determine the distribution of participation, influence, and prestige among members of such groups" (p. 241). Mayer (2003) described an expectation state: "It anticipates how well actors will perform, it assesses an underlying performance capacity, it compares two or more actors," (What is an expectation state section, para 6). Mayer (2003) explained that expectation states are important because "a person's expectations influence how that person acts" and "expectations can be formed on the basis of minimal or irrelevant information" (Why are expectation states important

section, para 7). Social cohesion theory can be seen in six studies in this literature review. The first four shows refer to theories of Status Characteristics and Expectation States. The last two will be included in the next section, because they show a combination of social cohesion theory and another kind of theory.

Cohen, Lockheed, & Lohman (1976) looked at how, in groups with African American youth and European American youth, interactions were dominated by European American youth. A purpose of the study was to produce equal status interactions in these groups. Equal status of interactions was measured by who spoke more and who was agreed with more. The study hypothesized that an experimental treatment based on research from theory of Expectation States would achieve more equal status interactions than the control treatment.

This study's explanation of why the hypothesis was not confirmed offers useful information. The researchers concluded that one of its control treatments may have acted as an experimental variable. The control treatment included student training in cooperative work and a staff of both African American and European American faculty. Training in cooperative skills surfaced as effective strategy for achieving equitable interactions (p.56). The experimental treatment included African American students being teachers of European American students on four different tasks (p. 50). This practice of having students teach each other may reflects a priority of sociological theorists. Discussion of "delegation of authority" (Cohen, Lotan and Leechor, 1989, p. 76) and of how "students use of one another as resources" (p. 77) shows students positioned to need information from each other. Examples of

tasks designed for students to rely upon each other relates to the idea of interdependence.

Next, Rosenholz & Wilson (1980) looked at how task design affects perception of ability. They stated that, "Schools provide the primary setting in which the individual's notions of ability take shape" (p. 75). Their study identified how classroom characteristics influence perception of different levels of ability and that there comes to be an agreement of rank between teachers, peers, and self (p. 77). This study used the term *resolution* to describe the "visibility and dimensionality of one's academic performance" (p. 76). Visibility refers to how easy it is to quickly see, judge and agree with others about the ability level of individual students. Dimensionality refers to the depth and range of skills assessed. A *high-resolution* classroom "offers a clear pictures of student performance" (p. 76), while a *low resolution* classroom provides a less tidy picture, as students are given opportunity to exercise and demonstrate a range of different strengths. To investigate how low resolution classes provide less uniform opinions of ability, this study measured five variables: (a) student groupings that ranged from whole class to individual, (b) evaluations by teachers that were or were not based on comparisons, (c) group tasks where students used either the same or different materials, and (d) student autonomy that was measured by how often students made decisions about reading tasks (p. 78). Subjects were fifteen 5th and 6th grade classes from two schools in two neighborhoods in San Francisco, representing contrasting socioeconomic and cultural populations (working class Latino Americans and middle class European Americans). On questionnaires, students ranked classmates by ability to read. Findings indicated that when the measures of classroom resolution were higher, there

was more concurrence between students, self-ratings were more congruent with group, association between teacher and classmates was stronger, and students were more likely to voice the teacher's findings (p. 80). To reduce variables, this study did not include mixed ethnicity classes, students who had moved, or students who were disabled.

This study acknowledged how student's conceptions of ability occur within a context of social ranking. Student autonomy was one variable for shifting status. Autonomy referred to students being able to make a choice about an assignment. This study revealed classroom practices that support students in seeing more of each other's strengths. Appreciation of many different abilities in class might be a way for students to discuss and recognize interdependence.

To provide all students with high expectations, Tammivaara (1982) described how the presentation of a group task affects expectations of competence. This study showed how to shift some of the expectations of competence which are typically based on status. It did this by first illustrating that information about an individual's relative ability on a skill would be believed to be true for new situations and set the stage for future performance, unless the unrelated nature of the first skill is made explicit. Participants of the study (a) were assigned a status based on a false reading score, (b) participated in either an experimental task or a control task in small groups, and (c) completed exit questionnaires and an interview about how they ranked each other and themselves. The control group was told that a task had one correct answer. There was no discussion of whether or not reading ability related to the skills needed for the task. The experimental group was told that there were many

different correct answers, that reading skill was not at all related to success with this problem and that many skills were needed for the solution. To limit variables affecting judgments of status, this study included 144 middle class European American boys who didn't know each other before study, had similar height, and were ages 10-12.

This study concluded that, "One way to equalize participation among heterogeneous group members is through careful definition of task" (p. 212). In the experimental group, student expectations of each other and student performance were less bound by assigned status than they were in the control group. The questionnaires showing judgments of each other's leadership showed the person voted as having the highest rank in the control group was a student assigned a high status student 88% of the time. In the experimental group, the person voted as having highest rank came half the time from the low status group and half the time from the high status group (p. 219). Tammivara (1982) stated,

This study supports the proposition that an extraordinarily powerful belief system exists within the school; that there exists a notion of academic competence that is uni-dimensional and all-encompassing[...] under certain conditions, people tend to differentiate among themselves using whatever information is available regardless of how insufficient or irrelevant it might be. (p. 219)

While belief systems are powerful, this study showed the possibility of supporting students having high expectations for each other.

Chizhik, Alexander, Chizhik & Goodman (2003) investigated how task-structure relates to levels of interaction and

influence among group members who initially have different status (p. 303). This study distinguished between tasks that are *ill-structured* or *well-structured* (p. 303). Ill-structured tasks were referred to as open ended and conceptual while well-structured tasks that had one right answer and were procedural (p. 303). Chizhik et al. (2003) hypothesized that ill-structured tasks would result in modification of group's perception and evaluation of lower-status members and higher rates of participation by lower status members throughout the study. Subjects of this post-positivist study were female undergraduates enrolled in a New England public university. Methodology involved students being randomly assigned a status that was publicly announced within the study (described as having high, middle and low potential for success in related work), participants rating each other's imagined abilities on skills related to the upcoming task, completing either the experimental (ill-structured) task or the control (well-structured) task, rating each other again, and then debriefing about the study. Ill-structured tasks provide opportunity to discuss ideas and strategies.

This study found that "task structure can be used to destabilize power and prestige orders in initially heterogeneous groups" (p. 303). On the ill-structured task, lower status students performed higher than all other group members during one interval of the observation period and received significantly more positive evaluations during three out of four intervals. Chizhik (2003) explained that,

Ill-structured tasks may engender interaction that creates random opportunities for new status differences within the group by allowing groups to consider multiple suggestions at multiple points based on

variable possibilities for successful problem solving. In this way such tasks provide opportunities for reliance on all group members for the group's success. (p. 306)

One effective strategy for teachers to scaffold interdependence in their classroom is considering whether a task has more than one answer and whether it requires students to think conceptually. Cohen (1989) referred to tasks that did not have procedural solutions as having "uncertainty" (p. 75). Task uncertainty provides students the opportunity and need to hear a variety of perspectives.

The four studies in this section provide insight into (a) delegation of authority between teacher and students and between students, (b) influence of task structure on shared perceptions of ability, and (c) characteristics of tasks that can establish interdependence. Setting up learners to be interdependent and navigating the obstacles that come up includes working through how students perceive themselves and others and how they are perceived. The way a teacher chooses and introduces a task can influence this. The next theory shifts away from focus on measured achievement and interaction and prioritizes student understanding of content.

Cognitive Development Perspective

For cognitive developmental theorists, the goal of power and authority between students and with content occurs through dynamic dialogue. Development of student thinking is looked at through dialogue with a peer. Researchers from this perspective value group work as a way to engage student thinking and student voice with academic disciplines (Cornelius & Herrenkohl, 2004, p. 473). While reviewed studies from motivational and social cohesion theory

reflect a post-positivist paradigm, cognitive development studies included the constructivist paradigm. The studies by Berry (2006), Lo & Wheatley (1994) and Cornelius & Herrenkohl (2004) were qualitative studies in narrative form, which made the conclusions accessible to a reader unfamiliar with statistics. Slavin (1996) explained a focus of the perspective:

Students will learn from one another because in their discussions of the content, cognitive conflicts will arise, inadequate reasoning will be exposed, disequilibrium will occur, and higher-quality understandings will emerge...The experience of peer communication helps a child master social processes, such as participation and argumentation, and cognitive processes, such as verification and criticism. (p. 49)

Whereas social cohesion perspective advocated student autonomy from teacher for the purpose of addressing status issues, cognitive development theory values student autonomy from the teacher because of how this positions the student with his or her academic learning. The next two studies to be reviewed focus on cognitive development and the final two use social cohesion theory to support work with cognitive development.

Sharing a close-up view of classroom interactions, Cornelius & Herrenkohl (2004) addressed, “why some structures are more successful than others, why certain students ‘appropriate’ the structures more readily than others, and why some structures may be better suited to certain disciplines than others” (p. 468). Exploring “how our relationships with knowledge and with others are tied up in each other” (p. 470), these researchers used student voice and description of instructional strategy to

illustrate their findings. They observed a science unit of a 6th grade class from an urban district with a 50% non-majority background. 27% of students were eligible for free/reduced lunch. By analyzing videotapes with two focal students, the unit emphasized problematizing content, giving students authority, holding students accountable to others, and using relevant resources.

Student interaction with content and authority of ideas was valued as an opportunity for students to refine ability to use the content in sophisticated ways (p.481). Cornelius (2004) stated:

Students in classrooms with more traditional participant structures might not have the opportunity to work with concepts in this way because the teacher’s evaluation of the student’s idea could reclaim ownership of that idea and take further refinement out of the student’s hands. (p. 482)

Considering strategies for interdependence, this study shows how a teacher's ability to delegate authority benefits student thinking.

Berry (2006) analyzed student language and problem-solving to address equitable treatment of all students (p. 489). This constructivist study looked at contexts of inclusion and exclusion for special education students. Berry (2006) worked for in depth study versus generalizability (p. 501). Subjects were a class of 2nd-4th graders in a midsize urban school where more than 50% qualified for reduced/ free lunch. Twelve qualified for & received special education. Looking at power relationships & relationship between classroom norms and social norm outside class, this study investigated how teachers establish community orientation, how students respond regarding status of students with

disabilities, and how overarching ways of talking affect interactions. This study found that the ethic of helping was used and misused and concepts of inclusion and exclusion can dismiss the value of learning on the periphery. This study examined, "What is going on here? By what means do individuals come to be positioned within the group at a particular moment and over time?" (p.514) The conclusion emphasized the importance of seeing community as emergent rather than normative (p.514).

The next two studies show evidence of both cognitive developmental and social cohesion theories. Chiu (2000) described elements of social cohesion theory and emphasized principles of cognitive development. This study addressed that cooperative learning is not universally supported and its successes relate to its context. Asserting that status affects interactions and problem solving in the group, this study examined how status influenced discourse. It hypothesized that status influences politeness of students' criticism of each other (p. 175). Its sample was 117 young men and women in ninth grade algebra in heterogeneous groups. Ethnicity was described as 34% Asian, 35% Latino, and 16% European. Results analyzed from video recordings and questionnaires indicated that while none of the status measures showed influence on quality of group solutions (p.186), status did affect who was seen as leader. For establishing interdependence, this research articulated the importance of non-verbal communication.

Lo and Wheatley (1994) addressed that in order for students to learn from group discussions, they need to practice certain social norms. Pointing out how the "task of negotiating social norms tends to be neglected or kept implicit" (p. 161), they asked, "How did individuals participate and

what math meanings did they construct? How did social norms influence participation and how it was negotiated? What were the learning opportunities and how did they occur?" (p. 150) Focusing on a 3rd grade class in a lab school associated with a Southern University, this study looked at how to create a learning community informed by anticipating misconceptions of math skills (p. 148). It showed student voice and described teaching social norms to provide support for students to have educative disagreements (p. 160). The study described the problem of when student understanding of expected behavior doesn't match teacher expectation, and that it takes practice to know how to defend an idea, support an idea, and to respond when a peer's explanation isn't clear (p. 158). It also described importance of processing feelings (p. 160). To set students up for reciprocal interdependence, this study offered the perspective of the teachers striving for "balance between individual and the group as well as short term and long term effects" (p. 161). Keeping this in mind can help inform decision making when considering issues of cognitive development and social cohesion.

Studies from cognitive development theorists connected previous scholarship with unfolding challenges. These studies showed how power and authority affect learning and how norms for dialogue and participation support students in successfully contributing to and benefiting from others. These perspectives that can inform structuring a dynamic of interdependence for group work.

Conclusion

The three different theoretical perspectives approach group work from different starting points. Motivational theorists documented student achievement

by motivating individuals to work together. Social cohesion theorists developed research on status to create equitable interactions. Cognitive developmental theorists emphasized understanding of disciplinary content. Researchers have worked to integrate the material, and the abundance of available research provides much opportunity to integrate findings for student success. Two themes that stand out as linking social cohesion and cognitive development perspectives are delegation of authority and conceptual thinking. While social cohesion theorists value delegation of authority for its part in addressing status, cognitive developmental theorists value it for how it positions a learner with disciplinary content. Social cohesion theorists described the role of cognitive thinking in tasks that invite and need everyone in the group. While Cohen mentioned how problem solving can be embedded in conceptual tasks (Cohen, 1989, p.79), cognitive developmental theorists emphasized this more.

The studies in this literature review suggest that task design is a way to make classroom interaction more equitable, that educative group work requires much practice, that student power and authority can increase learning, and that each situation is unique and benefits from attentive observation and assessment.

Recommendations

The question, “What are effective strategies to scaffold interdependence for group work” guided the review of studies. Theoretical perspectives showed some of the rationales behind on current practices. Recommendations for practice follow.

First, the way a group task is designed and introduced matters. To provide all students with access to speak, give small groups tasks that are conceptual, use

multiple critical thinking skills and require multiple contributors. Including multiple critical thinking skills provides learners who have different strengths the opportunity to demonstrate and recognize competence and knowledge (Tammivara, 1982, 216 & Rosenholtz & Wilson, 1980, p. 76). Design a task so that you are prepared to explicitly let students know that there are multiple solutions and cannot be solved without everyone’s work (Tammivara, 1982, p. 221).

To help students shift out of usual ways of evaluating abilities and to invite more favorable evaluations of low- status students, design a task for which a high-status skill (like reading) is not required and tell students that this skill is not at all related to success with the task (Tammivara, 1982, p. 221 and Chizhik, Alexander, Chizhik and Goodman, 2003, p. 311).

Look at participant structures in terms of power (Cornelius & Herrenkohl, 2004, p.495). Beware of mistaking proximity to peers for equity and consider what student is experiencing (Berry, 2006, p.520). For students to have authority with disciplinary thinking, much scaffolding is needed. Strategies include audience roles and question charts (Cornelius & Herrenkohl, 2004, p. 493).

Consider what students have control over in how they are evaluated by you. Be aware of giving students evaluative comments in public (Tammivara, 1982, p. 220). Be aware of how you compare students (Rosenholtz & Wilson, 1980, p. 81). Consider giving students opportunity to “create their own performance interpretations; they can dimensionalize their performance by selecting a variety of different tasks” (Rosenholtz & Wilson, 1980, p. 76).

Considering student ability to collaborate, keep in mind that “the social skills required included the ability to control

progress through the tasks, the skills to manage competition and conflict, and the ability to modify and use different viewpoints as well as the willingness to give mutual support” (Cohen, 1994, p. 5). Students need practice with learning how to perform skills and procedures of group work (Talmadge, Pascarella & Ford, 1984, p. 175).

Observe and reflect on assumptions of current practices. Model and discuss this with students (Lo & Wheatley, 1994, p. 161). Teach students to analyze language so they can observe connections between content and process. Observe when student comments provide *knowledge content* through "new problem solving ideas, proposals, justifications, consequences, critiques, alternatives" (Chiu, 2000, p. 176) and when they provide *evaluation of the previous action* through "agreement, disagreement, change of topic or neutrality" (p. 176). Students can look at how their language communicates their ideas as well as style.

When guiding disciplinary thinking while enforcing expectations for behavior, work "for a balance between individual and the group as well as short term and long term effects" (Lo & Wheatley, 1994, p. 161).

Further Research

The studies provided many useful recommendations and areas for future research. First, research is needed on integration of disciplinary concerns of cognitive theorists with participation concerns of social cohesion theorists and motivation focus of motivational theorists (Cornelius & Herrenkohl, 2004, p. 496). Second, to build classrooms that are accessible to students with very different needs and abilities, there is a need to look at assumptions about what kinds of

participation support each learner. "Participation as a construct is greatly under-defined and under-examined" (Berry, 2006, p. 522). Berry stated the need to problematize community building to see it as emergent, continual work. One way to look critically at what supports students could be to measure specific things teachers are doing that may increase cooperation for academic outcome (Talmadge, Pascarella & Ford, 1984, p. 175). Identifying how students perceive the teacher's actions could suggest useful adaptations.

References

- Au, W., Bigelow, B., Christensen, L., Levin, D., Karp, S., Miller, L., Peterson, B., Salas, K., Sokolower, J., Tempel, M., Walters, S. (Eds.) (2010-2011). Editorial: Every school a sanctuary. *Rethinking Schools*, 25(2), 6-7.
- Berger, J., Cohen, B., Zelditch, Jr., M. (1972). Status characteristics and social interaction. *American Sociological Review*, 37(3), 241-254. Retrieved from <http://www.jstor.org/stable/2093465>
- Berry, R. (2006). Inclusion, power, and community: Teachers and students interpret the language of community in an inclusive classroom. *American Educational Researcher*, 43(3), 489-529. Retrieved from <http://www.jstor.org/stable/4121767>
- Chizhik, A., Alexander, M., Chizhik, E. & Goodman, J. (2003). The rise and fall of power and prestige orders: Influence of task structure. *Social Psychology Quarterly*, 66(3), 303-317. Retrieved from <http://www.jstor.org/stable/1519828>
- Chiu, M. (2000). Effects of status on solutions, leadership, and evaluations during group solving. *Sociology of Education* 73(3), 175-195. Retrieved

- from <http://www.jstor.org/stable/2673215>
- Cohen, E. (1994). Restructuring the classroom: Conditions for productive small groups. *Review of Educational Research, 64*(1), 1-35. Retrieved from <http://www.jstor.org/stable/1170744>
- Cohen, E., Lockheed, M., & Lohman, M. (1976). The Center for Interracial Cooperation: A field experiment. *Sociology of Education, 49*(1), 47-58. Retrieved from <http://www.jstor.org/stable/2112392>
- Cohen, E. & Lotan, R. (1990). Teacher as supervisor of complex technology. *Theory into Practice, 29*(2), 78-84. Retrieved from: <http://www.jstor.org/stable/1476904>
- Cohen, E. & Lotan, R. (1995). Producing equal status interaction in the heterogeneous classroom. *American Educational Research Journal, 32*(1), 99-120. Retrieved from: <http://www.jstor.org/stable/1163215>
- Cohen, E., Lotan, R., & Catanzarite, L. (1990). Treating status problems in the cooperative classroom. In Shlomo Sharan (Ed.), *Cooperative Learning Theory and Research* (pp. 203-229). Praeger: New York.
- Cohen, E., Lotan, R., Leechor, C. (1989). Can classrooms learn? *Sociology of Education, 62*(2), 75-94. Retrieved from <http://www.jstor.org/stable/2112841>
- Cornelius, L. & Herrenkohl, L. (2004). Power in the classroom: How the classroom environment shapes student's relationships with each other and with concepts. *Cognition and Instruction, 22*(4), 467-498. Retrieved from <http://www.jstor.org/stable/3233886>
- Johnson, D. & Johnson, R. (1989). *Cooperation and Competition: Theory and Practice*. Interact Book Company: Edina, MN.
- Johnson, D. & Johnson, R. (2009). An educational success story: Social interdependence theory and cooperative learning. *Educational Researcher, 38*(5), 365-379. Retrieved from <http://edr.sagepub.com/content/38/5/365>
- Lew, M., Mesch, D., Johnson, D., & Johnson, R. (1986). Positive interdependence, academic and collaborative-skills group contingencies, and isolated students. *American Educational Researcher, 23*(3), 476-488. Retrieved from <http://www.jstor.org/stable/1163061>
- Lo, J. & Wheatley, G. (1994). Learning opportunities and negotiating social norms in mathematics class discussion. *Educational Studies in Mathematics, 27*(2), 145-164. Retrieved from <http://www.jstor.org/stable/3482795>
- Lotan, R. (). Teaching teachers to build equitable classrooms. *Theory into Practice, 45*(1), 32-39. Retrieved from
- Mayer, T. (2004). Introduction to Expectation States Theory. Retrieved from http://www.colorado.edu/sociology/Mayer/Contemporary%20Theory/Expectation%20States_files/frame.htm#slide0001.htm
- Rosenholtz, S., Wilson, B. (1980). The effect of classroom structure on shared perceptions of ability. *American Educational Research Journal, 17*(1), 75-82. Retrieved from <http://www.jstor.org/stable/1162509>
- Slavin, R. (1996). Research on cooperative learning: What we know, what we need to know. *Contemporary Educational Psychology, 21*(1), 43-69. Doi: 10/1006/ceps1996.0004
- Tammivaara, J. (1982). The effects of task structure on beliefs about competence and participation in small groups. *Sociology of Education, 55*(4), 212-

222. Retrieved from
<http://www.jstor.org/stable/2112673>
Talmadge, H., Pascarella, E. & Ford, S.
(1984). The influence of cooperative
learning strategies on teacher practices,
student perceptions of the learning

environment, and academic
achievement. *American Educational
Research Journal*, 21(1), 163-179.
Retrieved at <http://www.jstor.org/stable/1162359>

Principles of Effective Arts Integration

Integrating art and core curriculum has the potential to provide students with access to arts education as well as deepening academic learning, increasing student engagement in school and community, and contributing to social development. This literature review examined recent academic research in order to identify principles of effective arts integration. Three main principles emerged from the research reviewed: integrating subjects at the conceptual level, engaging students through arts integration, and encouraging deeper learning through aspects of the creative process. Findings suggest that these three aspects could inform best practices of effective arts integration. This paper examined how these three principles can inform the selection of classroom strategies. Possibilities for further research are discussed.

Within the arts and education fields, there is considerable disagreement about the function of integrating arts into academic subjects. Some arts instructors and researchers support the idea that art should only be promoted through its own programs and that integration places art at a subservient role to academics. Others state that integrating arts into academic subjects helps to expose the arts to more students as well as create meaningful and effective learning experiences (Russell-Bowie, 2009).

The purpose of this review of literature is to examine the principles that contribute to effective arts integration. For this review, effective integration methods are defined as integration methods that benefit the educative process in the academic subject as well as support student learning of artistic process or aesthetic values.

I will consider “arts” to include visual and performing arts of many different kinds. In this study I will also be considering core academic subjects to include English Language Arts, Math, Science, and Social Studies. The methods of art integration discussed here could be used to integrate into other subjects as well, but I will be focusing on these subjects due to their

prevalence in schools. I will be looking for methods of integration that I see suitable for secondary grades, but many of these methods could be suitable for all K-12 grades.

Arts integration can potentially deepen student learning as well as engage students and access a variety of interests and learning styles (Maniaci & Chandler-Olcott, 2010; Purnell, Ali, Begum, & Carter, 2007; Russell-Bowie, 2009; Strand, 2006). Understanding effective arts integration is important so that teachers may successfully promote the arts, model the artistic process, as well as promote student literacy in the arts. Many public schools lack funding to provide arts programs that reach all students (Mishook & Kornhaber, 2006). High stakes testing has caused greater emphasis on the academic subjects being tested (Mishook & Kornhaber; Russell-Bowie, 2009). Because of this, many students may not find direct exposure to the arts. For many students, their only form of interaction with art may be through the integration of art into core academic subjects.

My personal interest in arts integration comes from my own experiences with art. As a child I feel that I had the natural

interest in art that many students feel when they are drawn to creativity. However, in my K-12 experience, I found very little exposure to the arts. It wasn't until I was age 25 that I enrolled myself in my first ballet class. Through dance, I have been able to engage with the arts, better understand how I learn and develop, recognize the idea of process, and build a strong social community around the arts. This leads me to question, if I went through much of my life without being exposed to an art form that now plays a major role in my life, how many others miss out on their artistic interests due to lack of exposure to the arts? Because of this, I find it extremely important to expose as many students as possible to the arts. Schools and educators must go beyond offering arts education to those who express interests or show skill, and provide access to even those students who are unaware of what the arts world has to offer. I believe that offering authentic arts integration into core subjects will help to expose more students to the arts, and help them recognize their ability to access the art world.

As a teacher, I intend that the findings in this review will inform my practices. I will be endorsed in secondary Social Studies and English Language Arts. In either of these subjects, I hope to integrate the arts. This review will inform the methods of arts integration that I will practice in the classroom, as well as advise my expectations for integration.

Through examining conclusions and research data of peer-reviewed studies, I aim to find principles and classroom-based practices that contribute to effective arts integration. Whenever possible, I attempted to focus on studies that received their findings from actual practices of arts integration in public schools. This review is limited by the amount of research found through journal database searches on arts integration. Searches for articles were

conducted through the Education Resources Information Center (ERIC) and EBSCO databases including Academic Search Complete. There seemed to be many articles published about the benefits of integrating the arts into academic subjects, but a considerable amount were not peer reviewed. Within the peer reviewed publications, there seemed to be very little research that focused on finding effective ways to integrate arts and academic subjects. The research that did deal with arts integration, most often consisted of case studies. Very few studies have been done providing quantitative evidence of the positive aspects of arts integration (Mason, Steedly, & Thormann, 2008, p. 36).

Literature Review

All of the research examined for this review provided examples of effective arts integration. The studies were examined to identify the elements contributing to the effectiveness of integration. Throughout the findings, three main themes emerged. The broad themes of elements contributing to effective integration were 1) integrating subjects on a conceptual level, 2) engaging students through arts integration, and 3) encouraging deeper learning through aspects of the creative process. The following reviews are organized in these three themes, however the studies sometimes shared observations across themes.

Conceptual Integration

Arts integration can occur at different levels of content integration. There have been multiple names for the different depths of content integration. However, studies with different titles for levels of integration often share similar ideas of what the integration spectrum looks like. At one end of the spectrum would be conceptually integrated lessons. These are lessons built around a single concept shared between two

or more subjects, while engaging the concept from multiple perspectives. The opposite end of the spectrum would include an activity from one subject that might share some content, but not a concept. The following studies provide examples of effective conceptual integration. I start with Russell-Bowie's (2009) research to provide an example of defined levels of integration.

Russell-Bowie (2009) published a study that focused on effective forms of arts integration. She defined three models of integration including service connections, symmetric correlations, and syntegegration. In a service connection, subjects may share resources, but the learning goals and concept involved only come from one of the subjects (p. 5). Symmetric correlations occur when two subjects share resources, materials, or ideas and both subjects have learning goals. In this form of integration, both subjects are supported (p. 6). The learning that occurs in syntegegration is greater than if the subjects were taught alone. It results from purposeful planning on the teacher's part and bridges themes and concepts (p. 8). Syntegegration can occur by making curriculum connections on the conceptual level. Russell-Bowie's observations presented that syntegegrated lessons, or lessons integrated conceptually, provided students with "multi-faceted, in-depth learning experiences" (p. 19). The researcher believed syntegegration to be a positive method of arts integration.

Russell-Bowie's (2009) case study sought to observe how conceptual integration can involve students and promote language development, positive attitudes towards school and curriculum as well as increase productivity across subjects. The study was conducted in an Australian school which had a high percentage of low socio-economic students as well as comprising mostly of students with a non-English speaking background. Eighteen students between 4th and 6th grade

participated over 5 months during lunch times and after school. Many participants were previously deemed 'at risk' due to either literacy levels or low self-esteem. The students participated in multiple syntegegrated lessons facilitated by their teacher and a university creative arts lecturer. They involved music, dance, drama, and visual arts experiences as they were encouraged to talk, learn, research, and think about the idea of community harmony and what it meant to them. Participants designed an exhibit of presentations involving art and different aspects of community harmony. Following the exhibit, participants tutored fellow students in various music and visual arts experiences.

Russell-Bowie (2009) conducted interviews with teachers, participants, and the school's principal. She observed that students involved in the syntegegrated lessons displayed higher academic achievement in each art form as well as showing significant improvement in leadership, self-expression respect for self and others, and experience in various life skills (p. 15).

This study provided helpful definitions and examples of effective arts integration. The idea of conceptual integration would probably transfer into students of older age groups and in North America, but it would be important to consider the difference in developmental levels between high school and the participants of this study. The school community involved had a very high percentage of students with a non-English speaking background, so a scenario such as this may effectively transfer to other English language learners. I would also consider that this study was conducted outside of classroom time. It raises questions about the role of academic achievement in these lessons. This study provided a good example of what a conceptually integrated lesson could look like, with multiple activities all focused under a similar theme that crosses

subjects and has an emphasis on deeper learning.

Maniaci and Chandler-Olcott (2010) conducted a qualitative study to observe how perspectives of pre-service teachers changed in regards to integration of arts and literacy as they completed a course on literacy integration. In the study, participants included nine graduate or undergraduate students in a pre-service teaching course. They were interviewed and observed as they took a required course on literacy across the curriculum. Observations noted the changes that occurred as students developed their understanding of literacy in all subjects. Over the course, participants expanded their concept of literacy. They created lesson plans that conceptually integrated art and academic subjects using literacy. In this practice of conceptual integration, all participants considered ways to deepen understanding by reinforcing learning throughout multiple subjects (p. 13).

These findings suggested that learning to integrate art and literacy resulted in expanding concepts, reconceptualizing practices, and developing new practices. While this does not show that what the teachers learned was directly effective in a classroom, it does provide insight into the learning process that teachers will face when embarking upon integrating arts into their lessons. This study also provided literacy as a specific example of a concept that is suitable for integration across multiple subjects including art.

Freer (2007) conducted research to recognize student learning and engagement in a music residency integration program. He observed resident artists collaborating with teachers in seven different elementary schools around Atlanta, Georgia. In addition to observations, he also examined student portfolios including essays and constructed response reflections. Freer's study published findings that dealt mainly with student

engagement. He found that classroom teachers who remained engaged with the arts lessons using the resident artist were the most effective at creating integrated lessons that encourage deeper learning and engagement in the students. These teachers observed that curriculum connections were best made when they were not forced, but "emerged naturally and easily" (p. 274). I would like to suggest that the easy and natural connections are ones that exist conceptually.

These studies provided insight into the different levels of arts integration. Russell-Bowie (2009) stated that conceptual integrations offered opportunity for deeper learning across both subjects (p. 8). Freer (2007) suggested that connections should occur naturally, while pre-service teachers in Maniaci and Chandler-Olcott's (2010) study expanded their concepts to bridge art and literacy. Conceptual integration seemed to be a highly accepted idea in the research I read, and it may be important to note that I did not come across any authors who advised teachers to limit their integration to plainly similar activities or content.

Student Engagement

Many of the studies reviewed found positive effects of student engagement in arts integrated lessons. Even within these studies there are strategies for promoting student engagement in arts integrated activities and therefore encouraging deeper learning.

Freer's (2007) study mentioned earlier also found that purposeful engagement was directly related to the authentic experiences in arts integration. These experiences specifically included the creation and doing aspect of art and music. The most engaging arts integrated activities involved students in the many roles of an artist and resembled the demands of the real world artist (p. 270). Another aspect of engagement involved

relating the artwork to other areas of the classroom experience, including the participation of the teacher (p. 272).

Several schools were involved in this study, but not much background of the communities was provided. All the schools involved were elementary schools, so it would be important to again consider developmental differences when applying these principles to high school students. I would suggest that the idea of involving students in the roles of a real world artist, as well as connecting the work to the community, may be even more effective for students 12 years and older, based on their developing interests and identity. Actual practices demonstrated in the study that follow these principles of engagement would include having students write about their personal experiences, having the entire classroom engaged, encouraging student creations, and allowing students to refine their work. It was further noted that when an artist and teacher are working together, it is important for them to develop learning goals in both the art and curriculum (Freer, 2007).

Student engagement may also come by way of broadening the scope of what is being taught. A study by Purnell, Ali, Begum, and Carter (2007) examined three short case-studies to provide strategies and ideas for building culturally responsive classrooms through arts integration. The case-studies came from three different elementary school classrooms and varied in their student backgrounds. Within these case studies, the researchers observed that arts in the classroom allowed teachers to broaden the scope of their teaching and include the senses, learning styles, intelligences, and backgrounds of all students (p. 421). They found that integrating the arts opened up the lessons for student engagement, encouraged greater participation in the classroom, and involved more students in learning.

Similar to Freer's (2007) study, Purnell, Ali, Becum, and Carter (2007) observed elementary schools. Academic and social developmental differences should be considered between elementary and high school students when informing my practices. This study included the goal of engaging students through material that is relevant to the students and their cultures, which would positively inform work with high school students. Practices that would help to engage students through culturally responsive arts integration were reflected in this study. They would include educating students about the art and cultures around them as well as encouraging students to engage with their identity in their creative process (Purnell, et al., 2007).

A large scale study conducted by Mason, Steedly, and Thormann (2008), sought to recognize the impact of arts integration on students with various disabilities. The research consisted of two studies over the course of two years. One study observed the teachers' perceptions of the impact of arts integration on students with disabilities. The second study had participant teachers present and explain their integrated lessons. Over the course of both studies, observations of integrated lessons in the classroom were made. Research in this study was conducted in a very wide variety of schools in a variety of regions and included elementary, middle school, and high school. Observations included 34 focus groups in 16 different states. Throughout the observations, the researchers focused on the impact on students with disabilities.

Mason, Steedly, and Thormann (2008) found that effective arts integration came from student engagement by allowing students to have room to develop in the artistic process. When students were provided with the space and opportunity, they developed their voice (p. 41). Arts integrated lessons that allowed students to

make their own choices saw considerable engagement especially from students with disabilities (p. 41). Furthermore, it was found that arts integration provided access to all students and helped to level the playing field.

The findings in this study would be particularly effective when considering the role of arts integration in lesson differentiation and working with students with disabilities. This study shows that students with various disabilities can be expected to engage in and benefit from arts integration. The wide range of schools and communities that participated in the observations contributes to this study's effectiveness.

During the second year of the study, researchers examined the effectiveness of rubrics in assessing academics and art. Teacher participants used rubrics that were developed to assess both academic and artistic outcomes of integrated lesson projects. The participants graded the effectiveness of the rubrics collectively as a 3.8 out of 5 (Mason, Steedly, & Thormann, 2008, p. 43). This showed that the participants generally found these rubrics suitable for assessment and could contribute to effective arts integration. The type of rubrics the teachers used could work very well with arts integration, especially in high school classrooms. Rubrics in the study included assessments for the academic learning goals as well as the quality of the final product, the use of the art to enhance the topic, and creativity (Mason, et al., p. 43).

Oreck (2006) conducted a qualitative study of six New York City teachers to identify how teachers who often integrate art into their lessons saw and defined art as well as the factors they considered influential to their use of art (p. 5). The six teachers observed had a range of artistic and teaching experience. Four of the teachers had

participated in arts professional development programs before the study took place. All of the teachers taught in elementary schools and used arts integration at different frequencies. Oreck's study found that the teachers who integrated art purposely sought to deepen student learning through engagement.

Oreck's (2006) observations were conducted on elementary school teachers, but the findings on teacher dispositions are broad enough to be transferred to high school teachers. Teachers who consciously aim to deepen engagement had a wide range of growth and learning goals for students. They operated with broad definitions of arts experiences and sought to support the artistic expression of students (p. 10).

Research conducted by Houbolt (2010) intended to identify possible best practices for youth arts programs. Through working with a youth arts program and informal tracking of the effectiveness of its practices, Houbolt examined the effects of creativity and art in youth development. The youth program that she worked with involved teenagers in a community in Australia with an ethnically diverse population, high poverty rates, and significant issues with youth gang members. The youth arts program encouraged collaborative long-term youth arts projects.

Houbolt (2010) observed that youth were able to explore futures in art as well as becoming active in their local community (pp. 50-51). The arts projects were able to engage real issues (p. 49) and had an immediate impact on youth's "self-efficacy, resilience and confidence" (p. 51). Students developed long-term dreams and showed a commitment to creativity and art (p. 51).

These findings were not observed within a school program, but do present observations that relate to the high school age group in a diverse community. Practices within the study that supported these

principles included facilitating dialogue of real issues, encouraging a sense of pride in students works, and providing students with leadership opportunities in their projects (Houbolt, 2010).

Ellis and Lawrence (2009) observed four arts integrated units over the course of a year to determine the influence of the Creative Learning Assessment (CLA) on student learning. The CLA is a framework that was developed to assist teachers in evaluating children's progress when creating artwork (p. 3). It contains a continuum of six dimensions for evaluating progress in creative learning over time. The dimensions are:

1. Confidence, independence and enjoyment
2. Collaboration and communication
3. Creativity
4. Strategies and skills
5. Knowledge and understanding
6. Reflection and evaluation (p. 4).

The study took place in a classroom of seven and eight year olds where the teacher planned and observed integrated lessons with these dimensions in mind. The researchers focused on the teacher as well as two students in their observations. One student was identified as gifted but had low academic achievements. The other student was a beginner reader and writer. Over the year of observation, four integrated arts units were taught.

Ellis and Lawrence (2009) found that providing more opportunities for student discussion contributed to a "quality and sustained nature of children's talk arising during the project" (p. 9). Using the criteria of the CLA caused lessons to move from teacher-led to more "negotiated and collaborative" lessons (p. 9). Focusing on the creative approaches allowed teachers to observe students' approaches to different

learning activities. This gave the teachers deep insight into student interest, learning styles, abilities, and strengths (p. 9). The creative aspect also empowered students who were not showing academic achievement in other areas (p. 9).

This study was another example of arts integration with elementary students. Similar considerations of developmental differences as discussed earlier should be observed. However, the Creative Learning Assessment and its principles could very effectively assist high school teachers in assessing arts learning. Teachers would benefit from having clear artistic guidelines, as well as allowing students to make choices in their art and creating space for discussion and reflection. Promoting student choice and discussion would be very appropriate for encouraging student engagement in high school.

The idea of increasing student engagement through arts integration was the most prevalent theme in the research I examined. It seemed common that arts integrated activities were opportunities to involve student interests and identity to create meaningful and educative experiences. Oreck (2006) observed that teachers who often integrated art into their lessons intentionally tried to deepen learning through student engagement (p. 5). Freer (2007) found that these experiences were best to be authentic and reflect what a real-life artist does (p. 270), while Houbolt (2010) saw these experiences as a time for students to explore their future in art (p. 50). Purnell, Ali, Becum, and Carter (2007) saw the importance of involving student backgrounds and Ellis and Lawrence (2009) noted the importance of student involved discussion. Mason, Steedly, and Thormann (2008) found students benefitted from spending time in the creative process. Arts integration not only provided students the ability to examine academic concepts, it

allowed them to examine their own identity and the community around them.

Creative Process

The creative process is a substantial aspect of arts education. It bears similarity to the writing process and scientific process, but also includes important elements that are best experienced through art. Arts integration is not just about the product students create but about the process they take part in. Attention to the creative process in arts integration can enhance student learning in life skills, art, and academics. The following studies drew particular attention to the role of the creative process in arts integration.

Lynch and Allan (2007) observed the use of the creative process as tool to promote social inclusion. They interviewed individuals and companies involved in arts education in Scotland. Lynch and Allan asked questions about targeting for social inclusion and using arts in the schools to promote social inclusion. Through these interviews, they observed reports of the impacts of students using creative approaches. The interviews covered many people and companies involved in various communities and age groups.

Almost all of the participants interviewed recognized the ability of creative processes in arts activities to develop the individual and the community. Across a wide range of student backgrounds, the creative process was reported to improve practical skills and emotional development (Lynch & Allan, 2007, p. 15).

These observations were not directly related to any one age group, but the creative process can support social development through all grades. This study did not focus on the academic learning goals involved in the integration, but it was assumed that those goals were represented. The main idea of this study presented that

creativity could make connections to real life and bridge differences. In one participant's report, high school students were unhappy about recent city planning that hindered their participation in skateboarding. A visual artist worked with the students to create strategies to interview members of society on the issue. The students created an exhibition that involved their connection to skateboarding and the interviews they conducted. This resulted in skateboarders and city planners working together to design a new skateboard park (Lynch & Allan, 2007, pp. 10-11). This example shows how it was not a pre-planned connection, but a connection that arose by paying attention to student interests and how those interests could be involved in the creative process.

Strand (2006) performed case studies of collaboration in arts integration in order to determine theories as to defining the elements of successful arts integration programs. She observed arts integration in a third grade classroom and also in a gifted summer arts program for high school students. Strand observed the programs as she was a teacher involved in one program and a consultant for the other. She collected interviews with teachers, administrators, students, as well as observing field notes and student work. In the interviews with students, Strand inquired about the learning they were engaging in and asked them to articulate it.

Strand, (2006) found the focus on process was an emergent theme in the effectiveness of the arts integration programs. Both programs had goals in "teaching a creative process and developing skills, rather than simply on impairing artistic skills and concepts" (p. 37). Performance was still an aspect of the programs through impromptu performances or as a part of classroom learning and feedback. Instructors avoided a final

performance summary believing that this would diminish the “level of success in connecting critical and creative thinking skills across the curriculum” (p. 37). The creative process was where most of the learning took place, not the performance.

These observations were made in an elementary school and with gifted high school students outside of the classroom. It is important to consider that these were gifted students with an interest in the program. Effectiveness would be affected by different developmental and interest levels in a classroom. However, this study does show that both elementary and high school age groups are capable of making connections in the creative process. It is reasonable to assume that all levels of students in high school would also be able to engage in learning in the creative process. Focusing on the creative process may also alleviate some of the inhibitions adolescent students may initially have about performing, while still allowing them to engage in the arts.

Supporting learning in the creative process requires a focus on the process of developing skills, and not the belief that artistic skills and concepts need to be imparted by the teacher. According to Strand (2006), teachers would benefit from allowing students’ creative and analytical process to take up most of the instructional time and teacher’s attention. As displayed in the studies, students should be allowed a lot of time for reflection and should be encouraged to see themselves as artists (Lynch & Allan, 2007, Strand, 2006). These practices will help encourage learning in the creative process.

Conclusion

Through my review of current research, I hoped to understand the principles that contribute to effective arts integration, particularly in the high school

classroom. From the findings I reviewed, three main themes emerged as contributors to effective integration. These findings suggest that providing arts through integration contributes to deeper engagement, promotes access to more students, and encourages learning in both academics and art. Focusing on conceptual integration, deeper student engagement, and involving the creative process in arts integration will help me to promote student learning in both academics and art. It also provides students opportunity to explore their personal identity and the community around them.

I looked for research that pertained to high school arts integration, yet in my searches there were far more studies related to elementary school arts integration. In order to better inform my question, I would benefit from reading more research focused on secondary level arts integration. It worries me that arts integration has not only been researched less in high schools, but it may also be encouraged less. It is possible that many educators believe that students who are interested in art will have identified their interests prior to high school. Some may even believe that art is merely a fun activity that students should grow out of. Very likely, teachers in high school are more focused on one subject and less likely than elementary school teachers to integrate multiple subjects. Whatever the reason behind it, a lack of arts exposure in high school denies many students opportunities to explore valuable hobbies or careers. Access to art is even harder to come by in communities with high poverty rates (Mishook & Kornhaber, 2006), and thus becomes an issue of class inequality.

Only one of the studies reviewed made an attempt to examine aspects of arts integration by using quantitative methods. Qualitative research and observational studies provided descriptions that were

helpful in understanding what takes place in arts integration as well as what is possible. Arts integration involves a wide variety of variables. Specific research or quantitative studies are hard to conduct due to the wide amount of factors that could affect outcomes of an arts integrated lesson. Further quantitative research may be helpful in identifying and supporting specific academic advantages of arts integration, particularly in the area of conceptual integration. Qualitative research could be used to identify the variables that are present, allowing for narrowing observations in further quantitative studies.

Even though arts integration involves many variables, three themes emerged that directly inform classroom strategies and best practices. Learning can be deepened by integrating subjects at the conceptual level. Making connections in the curriculum at a conceptual level encourages deeper learning and transfer across multiple subjects (Freer, 2007; Maniaci & Chandler-Olcott, 2010; Russell-Bowie, 2009). Conceptually integrated lessons, such as “syntegrated” lessons which seek to make deep connections across multiple subjects would be an example of this type of practice (Russell-Bowie, 2009).

Arts integration benefits from purposefully engaging students. Teachers should create room for students to express themselves and connect with their surroundings (Ellis & Lawrence, 2009; Freer, 2007). In their art practice, students should be encouraged to make their own choices, draw from personal experiences, engage in real issues, develop a sense of pride, refine their work, and take part in discussion (Ellis & Lawrence, 2009; Freer, 2007; Purnell, Ali, Begum, & Carter, 2007; Houbolt, 2010). These factors all contributed to deeper student engagement. Teachers can also set clear guidelines and use project rubrics including academic and

artistic goals to help engage all students including students with disabilities (Ellis & Lawrence, 2009; Mason, Steedly, & Thormann, 2008; Oreck, 2006).

While performance and product are important aspects of art, the creative process is an area of deeper and broader learning. Giving students space and time to explore creativity, as opposed to rote training in an art skill or rehearsing for performance, encourages more student reflection and subsequent learning (Strand, 2006). The creative process can also help to encourage student engagement by allowing time for artistic refinement and discussion (Strand, 2006). It also serves as a tool for bridging differences and promoting social and community inclusion (Lynch & Allan, 2007). Teachers should provide a considerable amount of time and space for the creative process in their arts integration. Integrating art and core academic subjects requires a considerable amount of teacher planning, but when done authentically, it can positively affect the student, classroom, and the community.

References

- Ellis, S., & Lawrence, B. (2009). The influence of the creative learning assessment (CLA) on children's learning and teachers' teaching. *Literacy*, 43(1), 3-10. doi: 10.1111/j.1741-4369.2009.00509
- Freer, P. K. (2007). Toward the purposeful engagement of students with artists. *Teaching Artist Journal*, 5(4), 269-278. doi: 10.1080/15411790701577519
- Houbolt, S. (2010). Youth arts: Creativity and art as a vehicle for youth development. *Youth Studies Australia*, 29(4), 46-52. Retrieved from ERIC.
- Lynch, H., & Allan, J. (2007). Target practice? Using the arts for social inclusion. *International Journal of*

- Education & the Arts*, 8(12). Retrieved from <http://www.ijea.org/v8n12/>
- Maniaci, K., & Chandler-Olcott, K. (2010). "Still building that idea": Preservice art educators' perspectives on integrating literacy across the curriculum. *International Journal of Education & the Arts*, 11(4). Retrieved from <http://www.ijea.org/v11n4/>
- Mason, C. Y., Steedly, K. M., & Thormann, M. S. (2008). Impact of arts integration on voice, choice, and access. *Teacher Education and Special Education*, 31(1), 36-46. doi: 10.1177/088840640803100104
- Mishook, J. J., & Kornhaber, M. L. (2006). Arts integration in an era of accountability. *Arts Education Policy Review*, 107(4), 3-11. Retrieved from EBSCOhost.
- Oreck, B. (2006). Artistic choices: A study of teachers who use the arts in the classroom. *International Journal of Education & the Arts*, 7(8). Retrieved from <http://ijea.asu.edu/v7n8/>
- Purnell, P., Ali, P., Begum, N., & Carter, M. (2007). Windows, bridges and mirrors: Building culturally responsive early childhood classrooms through the integration of literacy and the arts. *Early Childhood Education Journal*, 34(6), 419-424. doi:10.1007/s10643-007-0159-6
- Russell-Bowie, D. (2009). Syntegration or disintegration? Models of integrating the arts across the primary curriculum. *International Journal of Education & the Arts*, 10(28). Retrieved from <http://www.ijea.org/v10n28/>
- Strand, K. (2006). The heart and the journey: Case studies of collaboration for arts integrated curricula. *Arts Education Policy Review*, 108(1), 29-40. Retrieved from EBSCOhost.

Increasing Participation in Student-Centered Discussion: Principles to Inform Practice

Student participation in discussion is key to student learning. In today's classroom, student participation is lacking, resulting in a barrier to student learning. The question of what increases participation in student-centered discussion is here analyzed with the aid of ten empirical studies focused on discourse and questioning patterns, teacher and student roles in discussion, student voice in discussion, and student perceptions and beliefs surrounding participation in discussion. Participants in the primary studies included students and teachers in K-12 education. Four underlying principles for increasing participation in student-centered discussion have emerged. These include: involving student voice; teacher's roles with their students; student beliefs about participation; and student perceptions regarding discussion. The studies reviewed took place primarily in the discipline of science; however, the results suggest that understanding these underlying principles is crucial for teachers implementing practices to increase participation in student-centered discussion in all disciplines.

Student participation in discussion is lacking in today's classrooms. Students want to engage in discussion, but don't know how to do so productively. In my student teaching, several issues arose from the lack of productive student-centered discussion—lesson pacing, student interest, and on-task time. These factors impact student learning. What student beliefs and classroom practices increase participation in student-centered discussion? The answer to this question will directly impact my ability to help students learn.

Participation in discussion is crucial for student learning. For the purpose of this paper, participation is defined as the oral and written means of communicating centered on the big ideas in the classroom. Participation is also listening and engaging with the communication of other participants. Student-centered is defined as when discussion consists of more peer to peer interactions than student to teacher interactions.

Flynn (2009) pointed out that research shows that most of what takes place in the

classroom is recitation, not discussion. Recitation is when the student is expected to memorize and recite what the teacher transmits. For the purposes of this paper, discussion is what happens when students participate. It is all the words that happen in class about a particular subject or topic, including oral and written means of communicating.

Initiation-Response-Evaluation [IRE] is a common form of discussion seen in the classroom. It is the process by which the teacher initiates a question, the student provides a response and is then evaluated on whether or not the response is correct. Studies in the science classroom show that Initiation-Response-Feedback [IRF] may be more beneficial than Initiation-Response-Evaluation [IRE]. Feedback is different from evaluation in that it can encourage students to elaborate on their thinking. It is still a triadic form of discussion where student and teacher are involved in a three turn pattern from teacher to student to teacher.

Two terms that arise when studying classroom talk are discourse and dialogue.

These terms are closely related and often overlap. Discourse is how one studies talking. Dialogue is a form of discussion when more than one student is involved in a conversation. There are several types of discourse patterns. IRE or IRF are common, traditional types of discourse. This type of discourse is triadic and the teacher maintains most of the control (DeWitt and Hohenstein, 2009, p. 455). Dialogic discourse is discussion in which student and teacher explore questions and issues together with attention paid to two or more points of view (2009, p. 455). This type of discourse encourages student-centered participation.

Any teacher who wishes to engage students in active learning will benefit from including students in meaningful discussions. Students have questions and opinions that they want to share. Teaching them how to do this in a productive way will help them to ask better questions and to be actively involved in more useful learning. Learning is an active process (Zull, 2002). When students have the opportunity to teach something they have just learned, they learn it better (2002). Activity not passivity is crucial to learning.

Discussion is important for the construction of knowledge. DeWitt and Hohenstein (2009) cited Vygotsky and followers when they said that “learning occurs as a social process (p. 454).” Construction of knowledge depends on this sociocultural perspective (2009, p. 454). Hao (2010) noted that “IRE has been criticized for leading to unrewarding and boring classroom discussions (p. 659).” The traditional form of talk that a teacher and student engage in is the teacher looking for the correct answer. Many educators use this type of talk for the purpose of quickly evaluating students for correct answers. It may be argued that this is the most efficient way to keep the class moving and on task with the content area. It does not, however,

always help the individual student in deep learning.

There are other forms of discourse. In this digital age, there are electronic and virtual discussions. Students have access to discussions online which rely on students’ abilities to engage in written discussion. These discussions have different advantages and disadvantages than face to face discussions. Quiet students have the opportunity to “speak up” when involved in electronic discussions. However, for some students the amount of discussion can be overwhelming.

I have found that students want to engage in dialogic discussion, but do not often know how. In my own experiences as a student and an educator, I have found much more triadic patterns of discourse. Many of my students were also used to more triadic patterns of discourse. I struggled to keep my students engaged in the topics at hand. If construction of knowledge occurs as a social process, then my students will attempt to make meaning by being social. They will do this more effectively if I can give them the tools to be more involved in dialogic discourse—the tools to participate.

Many aspects of student participation can be explored. This paper will present what encourages students to participate in student-centered discussion in the classroom. It will also suggest what a teacher can do to prompt and support student to teacher and peer to peer discussion in ways that encourage each student to participate fully?

Literature Review

Components of engaging students in classroom talk include discourse patterns, questioning strategies, discussion tools, and student perceptions. In this review of the literature, the themes that provide a framework for the question of what encourages participation in student-centered

discussion will be discussed. First, what teacher participation in discussion (teacher talk) looks like will be reviewed. This will be examined by four articles examining discourse and questioning patterns. Second, how student beliefs and perceptions regarding discussion and participation influence classroom discourse will be examined. Last, three articles that examine how student-teacher power relations shape classroom discourse will be provided.

Discourse Patterns

The following four studies illustrate types of questioning and turn-taking present in the classroom which affect the engagement of student participation. The first two studies have different strengths and share some weaknesses. The weaknesses will be addressed together. The last two studies focus on teacher questioning patterns and their relationship with increased student voice.

In a study of fifteen K-6 teachers selected from a professional development program, Oliveira (2010) asked how teachers understand discourse structures and how they can use them to promote science-inquiry. The primary focus was to see how the teachers could use these understandings to improve their classroom practice. The teachers examined their classrooms through video recordings, and then discussed them. The researchers used emergent coding to record the teachers' discussions regarding teachers' social understandings of discourse. They were categorized and coded into two main categories: the way students and teachers take turns in discourse and the feedback teachers provide. The participants (teachers) noticed how feedback as the third move was more dialogical than evaluation and less authoritative. The researchers observed how expert guided discussion of understandings of discourse structures

helped teachers to bring theory together with practice.

Differing levels of constructivist teaching practices also affect student participation in discussion. Erdogan and Campbell (2008) examined the differences in questioning strategies among 14 teachers of differing levels of constructivist teaching in their classrooms. They considered both IRE/IRF and level of constructivism in the analysis. Two groups were formed that represented opposite ends of the constructivist spectrum with two teachers representing the low level constructivist teaching practice (LLCTP) group and two teachers representing the high level constructivist teaching practice (HLCTP) group. These groups were observed for frequency of questions, type of questions, and interaction patterns between the teachers and students. Results showed that the HLCTP group engaged in more questioning patterns that resulted in knowledge construction while the LLCTP group engaged in more questioning patterns that resulted in knowledge reproduction. The frequency of questions asked by the teacher in the HLCTP group was higher by 3 times as much as that of the LLCTP group. In addition, 25% of the questions asked in the LLCTP group were concept completion questions (i.e. fill in the blank) while only 2% in the HLCTP group were concept completion. The LLCTP group followed a pattern of IRE whereas the HLCTP group followed a more dialogical pattern of listening to the student response or statement and then restating the student response as a question, acknowledging the student response, and leaving room for the student to elaborate or continue. In regard to open-ended questions, the HLCTP group asked 7 times more questions than the LLCTP group with the majority of these being enablement questions which ask for an explanation and

allow for an action to be performed following the explanation.

These two studies suggest understandings of discourse patterns and use of higher constructivist level questioning patterns can lead to more informed teacher practice in discussion. Oliveira's (2010) findings are important in showing how teachers' social understandings of the third move in triadic patterns of discourse can lead teachers to extend student participation. Oliveira's study helped teachers to understand the way they use the third move in triadic discussion to further student response. The findings of Erdogan and Campbell (2008) suggest the importance of how high level constructivist teaching practices can enact more complex questioning patterns. However, neither study focused on the students' role in the discussion nor did they focus on the levels of student participation in student-to-teacher or student-to-student discussion. To be more confident of these conclusions, the research would need to address how these teacher practices affect student perceptions of this kind of discourse, as well as, how these practices affect student levels of participation.

Martin and Hand (2007) also examined teacher questioning patterns; specifically the effect of teacher questioning patterns on student voice. The research focused on a fifth grade teacher over a two year study in which 13 lessons were videotaped and analyzed. The teacher worked with a professional development liaison in shifting her instructional practices to incorporate more student voice through the types of questions she asked. Questioning patterns were analyzed into two categories: factual recall and yes/no questions (lower cognitive demand) and questions eliciting student voice (higher cognitive demand). Dialogical interactions (teacher voice versus student

voice) and elements of argument were also analyzed.

Researchers observed that two-thirds into the study there was a major shift in pedagogical practice (Martin & Hand, 2007). This created a first and second phase of the study. As the teacher questioning patterns shifted from mostly IRE to more higher cognitive demand questions, more student voice presented. With this shift the teacher started using the terms "claims and evidence" which in turn presented in the students making more claims and stating evidence, thus giving more time for student to student interaction. As these elements of argument were practiced, students began to review and evaluate their peers' claims. The context of this study was in a small, rural Midwestern town with 97% of the student population being Caucasian. The way in which these findings might differ amongst a more culturally diverse student population where different discourse styles are present could add to the strength of these findings. Another limitation was the lack of data on student reflection during the pedagogical shift regarding how they felt about discussion. These findings do suggest, however, the important role questions of higher cognitive demand play in increasing student voice.

McNeill and Pimentel (2009) examined three urban high school science classrooms of 68 students for argument structure and dialogical interactions. They asked if there was a relationship between the types of questions the teacher asked and the discourse patterns present in the classroom. Discussions were analyzed and questions were coded as open, closed, rhetorical, or managerial. The researchers found that Ms. Baker asked primarily open questions in contrast to Ms. Steven who asked open and closed questions and Mr. Dodson who asked primarily closed questions. Ms. Baker's class also had twice as many student

utterances and students were more likely to respond to each other than in the other two classes. Additionally, Ms. Baker asked these open questions that addressed student prior knowledge, claims, and evidence. Though the researchers concluded that the study was too small to assume a causal link, the findings are similar to those in Martin and Hand (2007) suggesting a strong relationship between high student participation levels, open questions, and questions drawing upon prior knowledge.

These last two studies, as well as those by Erdogan and Campbell (2008), show how using questioning patterns that include higher cognitive demand can increase student voice in the classroom (Martin & Hand, 2007; McNeill & Pimentel, 2009). All four of these studies show the importance of the teacher using open-ended higher cognitive demand questions when attempting to increase student participation in discussion. As with the first two studies, the last two also do not focus on student perceptions of and beliefs regarding discussion. More research on this could assist teachers in increasing participation amongst students.

Student Beliefs and Perceptions

The following three studies provide insight into how student beliefs and perceptions affect their participation in classroom discussion. These studies examined the influence of peer culture, participation in discussion, and roles in discussion. These studies show the impact of student beliefs and perceptions on their participation.

In a study of 46 tenth grade students, Hess and Posselt (2002) examined how and why students experience discussions on Controversial Public Issues (CPI). The school used in the study had the highest graduation and attendance rates in the district. Over the course of a semester,

discussions were analyzed and student questionnaires were used to ask open-ended questions on what students liked most and least about the discussions. Results indicated that peer culture had a profound impact on student participation in discussion. Students indicated that working with peers that they saw as having higher or lower status, or with peers that they did not get along well with could adversely affect their participation in small group settings. Students also indicated that having participation as a requirement would most likely increase their oral participation in class discussion. These findings suggest that attending to student perceptions of discussion and status of other students is important when engaging students in classroom discussion. One limitation to this study was the small, mostly homogenous participant sample—39 of the 46 were Caucasian. Some of the in-class grouping strategies also prevented students who had less developed discussion skills and confidence from engaging with those having more developed skills and confidence. This practice reinforced status issues and limited authentic discussion situations.

In another study, Jansen (2008) conducted a comparative two classroom study in which she asked how students' beliefs about classroom participation affected their engagement in classroom discussion. Through videotaped class discussion, student surveys, and interviews, Jansen measured three primary variables: (a) students' beliefs about discussion, (b), opportunities to participate in discussion, and (c) actual participation in discussion. Jansen selected 15 focal students who represented a diversity of gender, achievement, and participation.

Results found that students who believed that participation in discussion was important for the learning of mathematics participated more in conceptual talk of math; whereas, students who felt threatened about

participation in math discussions were more likely to participate in procedural discussion than in conceptual discussion (Jansen, 2008). Jansen also found that there were some differences in discussion style between the two teachers. The students in Ms. Carson's class were found to be involved in more IRE discussion, more seatwork, more procedural talk (about the math operations), and more teacher-directed discussion; whereas, the students in Ms. Evans' class were found involved more in discussion than seatwork, less IRE discussion, more conceptual talk, and discussion engaging multiple student perspectives. The researchers also found that recall questions engaged students to participate when their beliefs suggested that they normally wouldn't. This last finding suggests that IRE, though being triadic in nature, does have some benefits to engaging student participation.

The primary strength of this study is its emphasis on the students' beliefs and participation. One limitation cited by Jansen (2008) was that most students were used to being asked to talk about their mathematical thinking from previous years exposure to district curriculum. The study did not take into account the lack of cultural diversity and what affect that might have on cultural perceptions of discussion. Jansen also stated that though the teachers had differences in how they implemented the learning, the text book used encouraged student discussion of concepts thus presenting a possible hidden variable.

In an action research study involving 88 students enrolled in three ninth grade honors world studies classes at a selective Chicago public school, Flynn (2009) sought to understand how students experienced classroom discussions and how she could facilitate learning (or scaffold) discussion skills for the students to promote a more democratic or equitably distributed

classroom discourse. The teacher provided a framework of scaffolding student-led discussions over the course of a year involving several different discussion-based activities: role-play, salon, fishbowl, conference, online forum, and simulation. Flynn used student reflections, teacher observations, teacher reflections, and student-teacher debriefings to collect her data.

Flynn (2009) found that students were very aware of the dynamics of discussion and the roles they each play in discussion. Students' perceptions of each other were also a factor in limiting or not limiting participation. Students struggled with leadership and facilitative roles in discussion. Their perceptions of these leadership roles did not allow them to participate in the same way as students not engaged in these roles. Flynn observed that roles during discussion and different modes of discussion can be an effective strategy for helping more students to participate. Flynn involved students in every step of the study and this informed her future steps. The scaffolding she developed for her class went beyond her classroom and was implemented in her social studies department. These two points are very powerful. A possible limitation was the selective nature of this public school.

These three studies suggest that explicitly addressing students' perceptions of their roles in discussion and the impact of peer culture on student participation is crucial for a teacher to increase student participation. These studies were done with a homogenous population. To be more confident in these conclusions, further research could be done with more diverse populations to see if the results would be different with different groups.

Student-Teacher Roles and Power Relations

The following three studies give some insight as to how the different roles that students and teachers play affect participation. The first two studies examined how the teacher in the role of a novice instead of an expert affects student participation. The last study showed how more dialogical participant structures can present themselves as more triadic in form due to the roles that teachers and students assume.

The social context in which students and teachers engage in discourse has an effect on discourse patterns. DeWitt and Hohenstein (2010) examined how different social contexts affect student and teacher discourse patterns, primarily triadic and non-triadic. Specifically, they examined the differences in four classes between discourse patterns in the classroom compared to discourse patterns during museum field trips. The sample consisted of three primary schools and one secondary school. Three schools were urban and one was suburban. Discussions were recorded and analyzed in both pre- and post classroom lessons as well as in museum lessons. Results concluded that triadic discourse was slightly less in the museum context than in the classroom; and, dialogic (non-triadic) discourse was slightly higher in the museum context. Perhaps, the teacher had less contextual authority in the museum making the teacher a novice in this situation. Only two different contexts were studied in the research, and future studies should look into different social contexts within the classroom and school itself to see how this would affect student contextual authority within the classroom. The diversity within the sample, including a sizable portion of English Language Learners [ELL] students in one of the classes, lends strength to the findings that supports the use of different

contexts in discourse. This study suggests that the social context in which student and teacher discussions take place affect whether the discourse patterns are more triadic or more dialogic.

Smith and Connolly (2005) analyzed the nature of classroom discussion over poetry when teacher authority changed regarding the different texts used. The sample consisted of Connolly and his two ninth grade honors classes. The researchers measured the teacher's authority with a text according to three conditions: (a) a poem the teacher had written, (b) a poem the teacher had read and taught often, and (c) a poem the teacher was reading with his students for the first time. Smith and Connolly analyzed whole class discussions and teacher and student reflections. The discussions were analyzed for kinds of reasoning: description, interpretation, evaluation, and generalization which Smith and Connolly expressed were good indicators of whether a discussion was dialogical or not.

All three discussions were fairly dialogical (Smith and Connolly, 2005). Though his turns were longer, the teacher made fewer informative statements than his students in all the discussions. In the high authority condition, the fact that the poet was in the room seemed to lessen the students' enthusiasm for analyzing the poem. The discussions in this condition were less dialogical, shorter, and more descriptive than in the other two conditions inviting fewer opportunities for student response. One student said she didn't want to hurt the teacher's (poet's) feelings or get a bad grade so she kept her thoughts to herself. The medium authority condition contained the shortest student turns and the biggest difference between length of student and teacher turns. In the low authority condition, students seemed more eager to respond and more likely to take consecutive turns. Their responses were longer and they

provided an average of 71.5% of the informative statements of substance. The teacher reflected that he felt more comfortable offering his own ideas under this condition than when he had prepared his notes for the medium authority condition. Another student reflected that the teacher was just like her, and so there was nothing holding her back.

These findings could suggest that a teacher assuming the role of a novice in a literature discussion could possibly increase the participation of students in dialogical discussion. It also illustrates how some students feel regarding their participation in relationship to how much teacher authority the teacher has with a given text (Smith & Connolly, 2005). Smith and Connolly examined only ninth grade honors classes and further study within a more heterogeneous sample would help to generalize these findings. They did, however, employ Marshall et al.'s (as cited in Smith and Connolly, 2005) coding scheme which also allowed them to compare their findings to one of the largest studies on secondary discussions of literature.

Billings and Fitzgerald (2002) examined how one teacher enacted dialogical discussions in Paideia format. The idea behind the Paideia seminar is that it represents a student-to-student interchange of ideas, concepts, and values (2002). Their findings supported that format itself can end up looking very differently than intended; in this case it was more triadic in form. Three Paideia seminars were conducted in the spring of one honors English class of 18 students. Variables examined were who talked (amount of talk and talk turns), the purpose and function of talk (types of questions asked, discussion content), form of talk (discourse patterns), and the roles teacher and students assumed.

Billings and Fitzgerald (2002) found that though the teacher observed some

values of Paideia seminars such as asking many open-ended questions and arranging students in a circle, her seminars exhibited several practices outside of the Paideia parameters. She often asked questions that pointed to her point of view, often stated her own opinion, and often evaluated students' comments. The teacher presented herself as a knowledgeable coach in contrast to the Paideia model of facilitator. The form of talk observed was often a triadic form where IRE or IRF occurred—92% of seminar was this format—and very few student-to-student talk episodes occurred. The following quote, "I am the most knowledgeable, conversant, analytic reader, and skilled writer [in the seminar]" (2002, p. 925), expressed the belief that teacher thought of herself as an expert and for that reason felt it necessary to play the role of knowledgeable coach. Student roles often enabled the teacher in this coaching role. Some students took oppositional roles but not often, and these were not always validated. These were opportunities for deepening dialogic discussion through divergent and multiple viewpoints that were not taken.

In theory, the Paideia seminar is supposed to be student-centered. However, this teacher's enactment was not. This study cannot be generalized to be representative of all or even most Paideia seminars; however, it does shed light on how teacher roles and authority play a pivotal role of enacting any kind of participant structure. Additionally, though the school did represent a diverse student population this diversity was not equally represented in this class. There were many more females than males and only one student of color. As an honors class, it also represented a small academically homogenous sample. Although student voice was elicited in focus group interviews regarding their perceptions about discussion and seminar, there wasn't any follow up on what the researchers found with this

information or what their purpose for collecting it was.

These three studies suggest that teachers allowing themselves to assume the role of a novice with their students can lead to higher participation among students. Findings from DeWitt and Hohenstein (2010) suggest social contexts play a role in the patterns of discourse. When teachers assume the role of expert, there is less student talk than when the teacher assumes the role of novice (Smith & Connolly, 2005; Billings & Fitzgerald, 2002). When taken with DeWitt and Hohenstein's study on contextual authority, these studies suggest a sizable impact on encouraging student participation. Further study would be helpful in looking at how a teacher assuming the role of novice would affect student participation in other subjects.

Conclusion

My original question was what actual teacher practices can a teacher use to increase participation in student-centered discussion? However, the research shows that when the teacher uses practices or strategies without an understanding of basic principles about how students participate and what affects participation in discussion, these teacher practices do not increase student participation.

Students may not participate unless they are given the proper support. It is up to students to participate in their learning; the teacher plays a strong part in how they facilitate the conditions that encourage students to do this.

Principles of Participation in Student-Centered Discussion

These studies suggest principles that inform practices that teachers can use to engage students in participation. These principles include teachers' involvement of student voice, teachers' roles with students,

student beliefs about participation, and student perceptions regarding discussion.

Teachers' Involvement of Student Voice

An increase in student voice occurred when dialogical discourse including less triadic and more complex questioning patterns were used (Erdogan & Campbell, 2008; Martin & Hand, 2007). These types of questioning patterns invite knowledge construction (Erdogan & Campbell, 2008). These findings lead me to recommend that to elicit more student voice, a teacher needs to ask more open-ended questions; use less triadic, specifically less IRE discourse patterns; and be explicit in letting students know that their voice is important and valued in classroom discussions.

Teachers' Roles with Students.

In at least one study, teachers strategically assuming the role of novice has shown to increase participation in student-centered discussion by shifting the contextual authority of the teacher. Billings and Fitzgerald (2002) found that assuming an expert role in an inherently dialogical discussion such as a Paideia seminar can shut down student participation. Teachers may assume the role of novice involuntarily through participation in contexts outside of the classroom (DeWitt & Hohenstein, 2010) or purposefully, by presenting to students material that the teacher is as unfamiliar with as his or her students (Smith & Connolly, 2005). These findings lead me to recommend that teachers should include a balance of material for students to engage with that the teacher is not familiar. Teachers should also solicit multiple student perspectives and assume expert and novice roles.

Student Beliefs Regarding Participation.

Students have different beliefs about how and why to participate in discussion.

Students who don't believe participation in mathematics discussion is important for their learning don't engage in as much conceptual talk as those who do (Jansen, 2008). Additionally, participation is inhibited when students don't feel comfortable questioning other's claims and assertions (Smith & Connolly, 2005; Hess & Posselt, 2002). Hence, addressing students' beliefs and perceptions about participation and their roles in discussion is crucial. Teachers can do this by soliciting information on students' experiences and beliefs regarding discussion; having clear expectations about how to participate in discussion; and reflecting on discussions. Also, teachers can scaffold discussion skills by giving students roles that explicitly ask students to engage in the use of certain types of discussion skills.

Student Perceptions Regarding Discussion.

Student perceptions of how they are seen by their peers and teachers can also adversely affect participation in discussion (Hess & Posselt, 2002; Flynn, 2009). This is especially true of students who have a different social status than another student or for students that don't get along (Hess & Posselt, 2002). Recommendations are similar to those given for dealing with student beliefs. Giving students roles to assume for scaffolding their discussion skills addresses providing students with specific tasks for participation. It is also recommended to allow students to explore all these roles including the ones that have students assume less familiar and sometimes uncomfortable ones.

Further Research

This paper was limited in the number of studies reviewed; further research would uncover more underlying principles for increasing participation in discussion. Many

of the studies were in the discipline of science and more studies of how participation is enacted in other disciplines might create a more complete picture or might point out differences related to student learning in different disciplines. The role the teacher assumes (expert versus novice) provides the following questions. When is it appropriate to assume the role of novice over expert? When is it crucial that the teacher maintain an expert role? When the teacher does assume the role of a novice, how is this done and how is authentically preserved?

It is important for teachers to think about these underlying principles that inform their practice when working to increase student participation. Without an understanding of these principles there is no guarantee that students will participate. And, it is through student participation that teachers can increase student learning.

References

- Billings, L. & Fitzgerald, J. (2002). Dialogic discussion and the Paideia seminar. *American Educational Research Journal*, 39 (4), 907-941. Retrieved from ERIC database.
- DeWitt, J. & Hohenstein, J. (2010). School trips and classroom lessons: An investigation into teacher-student talk in two settings. *Journal of Research in Science Teaching*, 47(4), 454-473. Retrieved from ERIC database.
- Erdogan, I. & Campbell, T. (2008). Teacher questioning and interaction patterns in classrooms facilitated with differing levels of constructivist teaching practices. *International Journal of Science Education*, 30(14), 1891-1914. Retrieved from ERIC database.
- Flynn, N. (2009). Toward democratic discourse: Scaffolding student-led discussions in the social studies. *TeachersCollege Record*, 111(8),

- 2021-2054. Retrieved from ERIC database.
- Hess, D. & Posselt, J. (2002). How high school students experience and learn from the discussion of controversial public issues. *Journal of Curriculum & Supervision*, 17(4), 283. Retrieved from Academic Search Complete database.
- Hao, C.F. (2010). A comparative study of collaborative learning in paper scribbles and group scribbles. *Australasian Journal of Educational Technology*, 26(5), 659-674.
- Jansen, A. (2008). An investigation of relationships between seventh-grade students' beliefs and their participation during mathematics discussions in two classrooms. *Mathematical Thinking and Learning*, 10, 68-100. Retrieved from ERIC database.
- Martin, A. & Hand, B. (2007). Factors affecting the implementation of argument in the elementary science classroom. A longitudinal case study. *Research in Science Education*, 39, 17-38. Retrieved from ERIC database.
- McNeill, K.L. & Pimentel, D.S. (2009). Scientific discourse in three urban classrooms: The role of the teacher in engaging high school students in argumentation. *Wiley InterScience*. DOI 10.1002/sce.20364.
- Oliveira, A. (2010). Developing elementary teachers' understanding of the discourse structure of inquiry-based science classrooms. *International Journal of Science and Mathematics Education*, 8(2), 247-269. Retrieved from ERIC database.
- Smith, M.W. & Connolly, W. (2005). The effects of interpretative authority on classroom discussions of poetry: Lessons from one teacher. *Communication Education*, 54(4), 271-288. Retrieved from ERIC database.
- Zull, J. E. (2002). *The art of changing the brain: Enriching teaching by exploring the biology of learning*. Sterling, VA: Stylus Publishing, LLC.

The Effects of First Language Proficiency on Additional Language Acquisition

The purpose of this paper was to examine whether or not first language proficiency benefits additional language acquisition. The studies within this paper targeted three major categories regarding this purpose: bilingualism, the relationship between L1 and L2, and effective strategies that are ideal for both the native language and additional language classroom. The range of studies included longitudinal studies, multiple treatment group studies, and case studies, and the range of participants included 5 years old to university age. Results of these studies indicated that simultaneous language learning from an early age is the ideal way to learn additional languages, and additional language acquisition is benefited by first language proficiency. Limitations of the studies are the lack of practical recommendations for the various language learning schools of thought and lack of research on the benefits of additional language learning on first language writing and composition. The major conclusions drawn in this paper are that language is best learned concurrently, with instruction in both the first and additional languages. Additionally, the conclusion was drawn that high proficiency in L1 significantly benefits additional language acquisition in concurrent instruction. Based on these two conclusions, recommendations as to the strategies ideal for concurrent language instruction include social-cooperative instruction, incorporating relevance and immersion into the foreign language classroom.

Language plays a vital role in the American school system. The ongoing debate about the proper instruction of language revolves around two questions: Do students acquire language by simply using it and making mistakes, or do they learn by explicit instruction of grammar and vocabulary? This debate is especially relevant in the current political and educational context with organizations like the National Council of Teachers of English criticizing the phonics-based instruction that has, until recently, been popular in elementary schools (Fielding, 1992). Proponents of phonics-based and explicit instruction claim that breaking down language aids in reading and writing fluency. Groups opposed to phonics-based instruction argue that explicit teaching of grammar is biased against students who

speak a dialect other than Standard American English, including African American English and other dialects, claiming that to learn the standard grammar is similar to learning a foreign language in the great differences in syntax and vocabulary that learners must overcome (Bloome, 2003).

Almost identical to the phonics versus whole language debate, there is discussion among foreign language teachers about whether language should be taught explicitly, similar to the phonics-based instruction, or through immersion, similar to whole language (Dahlberg, 2003). Many theorists believe that learners acquire language through explicit presentation of grammar, syntax, and vocabulary, using methods like “Total Physical Response” instruction and Krashen’s Input Hypothesis,

both of which focused on form before communication. Opponents favor language acquisition through the “Natural Approach” and communicative language teaching, which focus on communicative proficiency rather than accuracy (Richards & Rodgers, 2001).

The issue of measuring proficiency in a foreign language has been a dominant discussion for decades and has had a major impact on foreign language instruction. The American Council on Foreign Language developed a proficiency measure based on governmental language programs to use with secondary and post-secondary language learners. Although this measurement, starting at the bottom of the pyramid with “novice” speakers who are just beginning to learn the language and going up to “superior” who are near-native speakers, is used to test learners on speaking, writing, listening, and reading, the measurement is specifically designed for oral proficiency (Lange, 1992). The question that comes from this brief discussion is, if proficiency is the end goal of foreign language instruction, what teaching strategies and methods will best support it?

After working as a teacher intern with sophomore English students, I noticed that they were insecure in their writing abilities, often choosing to disengage rather than to try to overcome the difficulty of writing. This, along with my experience teaching German grammar to high school students in my practicum, caused me to wonder about how proficiency in the native language may affect acquisition of an additional language. My German students struggled to understand syntactic and lexical concepts in a foreign language that they often do not understand in their native language. This made scaffolding difficult to accomplish since students have little prior knowledge of syntax with which they can connect. This is important because learning a new language

forces the learner to study grammar, syntax, and conventions. They would likely succeed more readily if they were already proficient in these aspects of writing in their native language.

My personal experience suggests that high proficiency in the native language benefits writing and composition in the additional language. The literature about the debates in foreign language and English language arts has caused me to wonder about classroom instruction practices that would benefit both the native language and world language classroom. It is this perspective that has influenced my exploration of language instruction, and it leads to the research question to be investigated in this paper: How does native language (L1) proficiency either benefit or detract from second or additional language (L2) writing and composition? This topic is important to me and the educational community because it affects the instructional practice of classroom English language arts teachers in the United States, and it could support foreign language teachers in their quest to teach language learners structures from their native language in a new context.

If my initial hypothesis that L1 proficiency benefits L2 acquisition is accurate, then this would become an issue of classroom instruction: In order for students to succeed in an additional language, they need first to be proficient in their native language. The next question to ask, then, is what instructional strategies are most effective in teaching L1 syntax, grammar, voice, and conventions? How might these strategies be transferred to L2 instruction? The limitation of my study is that I will be focusing on the written language in L1 and L2 rather than speaking, reading, and listening. Also, although this study concludes with recommendations for instructional strategies to support

proficiency in both languages, the focus of my research is on the relationship between L1 and L2 rather than effective strategies.

Literature Review

The following studies were gathered from a search completed during the winter of 2011 using the Educational Resources Information Center (ERIC), Academic Search, and Education Full Text databases, as well as the library book database at the Evergreen State College. The search terms and key words were “language acquisition,” “L1 and language acquisition,” and “L1 and L2 composition.”

This literature review is organized into three sections: bilingualism, the relationship between L1 and L2, and language acquisition strategies. To begin with, the bilingualism section offers insight into how two languages develop, whether simultaneously or staggered over time. The second section explores the specific relationship between L1 and L2 that is the target of this paper: whether or not high L1 proficiency benefits L2 development. The last section is focused on strategies that may be useful in acquiring an additional language.

Bilingualism

Before beginning discussion on the active relationship between L1 and L2, it is pertinent to discuss the nature of language acquisition. There have been many studies on how language is acquired, but the focus here is specifically on additional language acquisition as opposed to initial or native language acquisition. Therefore, the literature of this section focuses on additional language acquisition or, more specifically, the parallel development of L1 and L2.

Bauer (2004) conducted a longitudinal case study that measured the developing writing and reading proficiency of a

bilingual child, speaking German and English, from the time she was two years to five years, six months. The researcher analyzed the subject’s writing from home, assigned by her mother and father, and from school. The writing samples included notes to family members, stories, and labels to pictures that she had drawn. The researcher found that the subject utilized both languages when writing, which could lead to higher writing proficiency in both languages. The subject developed a written inter-language through which she was able to combine her knowledge of both English and German to communicate her thoughts; if she could not think of a word in English, she would write the German equivalent. This ability to switch at will between languages, referred to as ‘code-switching,’ demonstrates a communication proficiency that is greater than when a learner is acquiring only one language (the initial or native language).

Although the results of this study have positive implications for simultaneous L1 and L2 acquisition, limitations of the study include sample size and multiple treatment interference. Being a single case study, the results may not be generalizable because there was only one research subject. Also, Bauer (2004) indicated that the subject was supported more in reading than she was in writing, so her ability to write may have suffered because she was left to write on her own.

Hassan (2008) also examined the simultaneous development of L1 and L2, in this case, Spanish and English, respectively, in a convenience sample of university students, a majority of whom indicated that Spanish was their native language. All had been in the United States for approximately 20 years and had begun acquiring English around the age of 5. After administering a survey to 202 participants about their comfort level in Spanish and English on a

number of variables, researchers collected writing samples in both languages in order to cross check subjects' self reports with a scored rubric. The researchers found that 25% of subjects had achieved balance between L1 and L2, indicating that they were equally comfortable and proficient in each language, whereas 75% showed that L2 had dominated L1.

The implications of this study are important to consider for language maintenance because it indicates that an additional language can be mastered when learned at a young age in an immersion context. A powerful aspect of the structure of the study is the cross checking that researchers did to verify subjects' responses to the survey. Although subjects may perceive their skill in either L1 or L2 to be one way, researchers were able to measure their abilities themselves rather than relying solely on self reporting.

Canagarajah (2002) reviewed research on the different cultural and language communities of students and related them to a new concept of academic community. The study was focused on how to bridge the gap between academic discourse and community discourse, i.e., code-switching. The literature review showed the difficulty that learners have developing an academic vocabulary and proficiency in L2, and it gives insight into the question of how L1 and L2 relate in an academic context. This literature review is relevant because it sets the stage for L1 and L2 relationships and how they affect each other.

Related to language acquisition is the cognitive function of language. Roco de Larios, Manchon and Murphey (2006) investigated the relationship between cognitive processes of L1 and L2 problem-solving formulation. Participants were chosen based on a standardized test measuring their L2 proficiency. All 21 participants were native speakers of Spanish.

The participants were separated into three groups based on their L2 proficiency and were assigned writing and speaking tasks in which they responded to prompts by the researchers. The responses were then timed and scored to measure proficiencies of each participant; the longer participants took to formulate their responses, the more declarative their procedural knowledge was, meaning that they had to consciously consider each grammatical and lexical step of the response. When participants were able to respond more quickly, their procedural knowledge became automatized, meaning that they did not have to consider each step that they had learned, and the responses came more naturally.

Roco de Larios et al. (2006) found that subjects took twice as long to formulate responses in L2 as in L1. This suggested that they had already made the progression from declarative of procedural knowledge, describing the process of having to consciously consider each aspect of syntax and lexicon, to automatization of procedural knowledge, describing the ability to automatically make connections without a great deal of conscious effort, in L1 but not L2. One limitation of this study is that it stops just short of discussing how the L1 automatization is affected by L2 learning and instruction. Other limitations for this study are sample size, with only 7 participants, and potentially the Hawthorne Effect, in that the participants may have been affected by the presences of the researchers.

Leikin et al. (2010) explored the cross-linguistic transfer of phonemic awareness and word identification between two structurally very different languages, Russian and Hebrew. Participants were primary school children grouped into three categories and experimental groups: 39 were Russian-Hebrew bilinguals who were able to read, write, and speak both Russian and

Hebrew; 41 mono-literate bilinguals who could speak Russian, but were unable to read or write it; and a control group of 41 Hebrew monolinguals. Although all of the participants lived in Israel, Russian was the primary language spoken at home and Hebrew was the language of formal instruction and communication. Participants took a series of tests over the course of one school year in 1st grade that measured their phonemic awareness and word identification skill in both languages. These tests were scored according to a rubric developed by the researchers and averaged in order to compare group scores. The group of bi-literate bilinguals displayed higher results than the other groups, indicating, according to the researchers, that early exposure to bilingual education will benefit children's language development in both or all languages.

One strength of this study is the use of a control group which builds validity; however, there is an issue with the sample size for each experimental and control group. With so few participants in each group, the results' generalizability, which is also threatened by the vast cultural and structural differences between the languages in the study and the English of the United States, comes into question. Although the results of this study seem valid, the issue is transferring the results to an American classroom because of the vast differences in the languages.

Graham et al. (1993) studied the effects of learning disabilities on the writing process by examining whether or not a learning disability would negatively affect students' perceptions of their own writing abilities as well as their attitudes toward writing. Participants consisted of 39 4th-8th grade students with learning disabilities and 29 randomly selected 4th-8th grade "normally achieving" students from a rural school in the US. The "normally achieving

students" all fit the criteria that they were not served by special education services and were noted as "capable writers" by their teachers (p. 239). Participants submitted to an interview assessing their knowledge of writing, the composing process, attitudes toward writing, and self-efficacy as a writer. The questions in the interview were open-ended in order to glean adequate information on students' perceptions of their writing process. Results of the qualitative interview were analyzed using an attitude scale that consisted of 6 items: I like to write; I would rather read than write; I do writing on my own outside of school; I avoid writing whenever I can; I would rather write than do math problems; and writing is a waste of time. Students with learning disabilities were found to have less mature conceptualizations of writing than the normally achieving students as indicated by the depth of their answers to the open-ended questions, and less positive attitudes about writing.

This study, although not related to language acquisition, is important to consider because students' perceptions of what makes good writing has implications for the strategies teachers use in writing instruction. However, the validity of the study may be limited by the small sample sizes and narrow interpretation of a "normally achieving" student. While the criteria used to determine these students may indeed be a part of what makes a "normal" student, the word "normal" in and of itself is problematic because it is indefinable. Were this definition more widely focused, perhaps the results may have been differently interpreted.

Relationship Between L1 and L2

Although the assumption that L1 proficiency benefits L2 acquisition is acknowledged, studies were collected in an effort to provide multiple perspectives on

the issue of L1-L2 relationship. The following studies investigate the specific relationship between high proficiency in L1 and how it may or may not benefit L2 or additional languages.

Examining the question of whether or not concurrent language instruction in L1 and L2 negatively affects L1 writing, van der Leij, Bekebrede and Kotterink (2010) administered tests in both Dutch (L1) and English (L2) to two groups of students from two different schools: 23 students from a school with bilingual education, 23 from a monolingual school that taught in Dutch only. All students spoke Dutch as a native language and were between 7 and 8 years of age. The tests covered reading and writing in both languages and were administered twice over the course of one year, once at the beginning of the school year and again at the end. The researcher found that bilingual students scored higher in English (L2) and on some Dutch tests (L1). Furthermore, they concluded that development in L1 is not slowed down by concurrent instruction in L2, but it is rather benefited by the concurrent instruction of L2.

A potential limitation for this study is the size of the sample being unrepresentative of the variables being studied. Also, 6 participants dropped out over the course of the study, bringing the results into further question. However, this study provides significant implications for the teaching of foreign and world languages as an aid to gaining proficiency in the native language.

Baba (2009) examined the relationship between L2 lexical proficiency and L1 writing and lexical proficiencies. 68 Japanese university student participants who were learning English as a foreign language were asked to write summaries and compositions and were then tested on their vocabularies and reading comprehension. All participants had similar educational and cultural backgrounds and had at least six

years experience studying English. The summaries and compositions were holistically scored according to TOEFL guidelines, and the tests were scored analytically and holistically. The treatments were then examined and compared to one another to determine the results. The researchers found that subjects were more effectively able to use the L2 if they had a higher level of writing expertise in their L1. Specifically, participants were able to write and think in a metalinguistic manner if they were highly proficient in L1 writing, whereas participants with a lower proficiency in L1 focused more on finding the right word or grammatical structure.

A potential threat to the validity of this study is the lack of a control group; although the results demonstrate that L1 proficiency benefits L2 writing, they are not compared to any fixed control data. Also, according to Baba (2009), the reading texts were quite difficult and may have skewed the results, and the sample size was inadequate to accurately measure each of the variables of lexical proficiency and metalinguistic skill.

Dweik and Al Hommos (2007) focused on the relationship between L1 proficiency and L2 writing by measuring how 850 secondary students transferred cognitive information from L1 to their writing in L2, in this case Arabic and English, respectively. The participants were given a composition prompt test in which they were asked to compose an essay based on two prompts, one in Arabic and one in English. These pieces of writing were then analyzed and scored based on TOEFL guidelines and the results of the Arabic compared to the results of the English tests. Researchers found that development of writing skills in English and Arabic enhanced each other, showing a positive two-way relationship between L1 and L2. Participants who were less proficient in their native language had poorer composition

skills in the additional language, and participants who were more proficient had better skills in composition of the additional language.

The major strength of this study is that it addressed the major differences between two unrelated languages rather than studying two Germanic or Romantic languages. This offers a perspective on the L1-L2 relationship between unrelated languages that do not share an alphabet, indicating that L1 and L2 need not be similar or related for this positive correlation to exist.

Hedgecock & Atkinson (1993) addressed the question of the extent to which L1 proficiency affects L2 development. The first part of the study featured 157 university student participants who were native speakers of English taking a required composition course, whereas the second part looked at 115 students enrolled in intermediate- and advanced-level ESL writing courses. Both convenience sample groups of students filled out a questionnaire about their reading and writing habits during their free-time. They also completed expository writing samples that were scored and measured to determine compositional proficiency. The scores on the compositions were then compared to the qualitative data from the questionnaire to determine whether or not reading in L1 and L2 positively correlated with L2 development. The results of the study demonstrate that L1 mastery improves student development of L2, indicating that extensive reading habits can greatly benefit both L1 and L2 composition and writing.

The major strength of this study was the use of a control group against which the researchers can measure their experimental group results. The sample sizes were also a strength, but the participants in the second group represented only a small part of the ESL students in US secondary schools, which could potentially skew the data.

Ito (2009) tested the hypothesis that L2 writing may be obstructed by limited L1 proficiency. 317 Japanese ESL university students served as participants for this study, which consisted of three tests, including a standardized English proficiency test and two persuasive writing tasks, one in English and one in Japanese. Essays were evaluated on a 6-point scale and were compared with each other and the proficiency test to determine the relationship between L1 and L2. Results indicated a confirmation of the researcher's hypothesis, showing that low L1 proficiency has a detrimental effect on L2 writing skills. Conversely, high proficiency in L1 benefits L2 writing skills in L2 (Ito, 2009).

Although the sample size for this study appears adequate, the generalizability of the study to US secondary schools is questionable because the setting of the study was in a Japanese university. The results may be the same or similar for secondary students learning English as an additional language or English L1 students learning an additional language, but the cultural and developmental differences may have skewed the results.

Language Acquisition Strategies

Although the primary focus of the research in this paper is on the relationship between L1 proficiency and L2 acquisition, it is also useful to consider pedagogical strategies that can develop L1 and L2 writing skills. The following studies and theories identify potential strategies to be used in the classroom and discuss the advantages and disadvantages of applying them.

In the context of the predominance of English as the world's academic language and extensive debates about English literacy, Canagaraja and Jerskey (2009) conducted a literature review to analyze strategies used to teach L2 – direct and indirect – and the

progression direction in learning L2, i.e., grammar and vocabulary before genre and style or vice versa. The researchers asserted that writing is a situated and social activity, so learning how to write should also be social and situated. Therefore, especially in an L2 classroom, writing activities ought to be framed in relevant context for students. Some suggested writing activities from Canagaraja and Jerskey (2009) are multi-authored texts and style/voice activities. They concluded that, as writing is a social process, having group writing prompts encourages student engagement. Also, they found that L2 learners began attempting to put voice and style in their writing before they had a strong grasp of conventions and grammar. This indicated that giving them practice and support on style and voice may also increase engagement with writing.

Zhao and Llosa's (2008) literature review focused on the role of voice in L1 and L2 writing assessment, looking specifically at the implications on L2 instruction. They concluded that voice is an important part of writing assessment and found a close association between strong voice and quality of writing in L1. Therefore, including writing and learning activities that utilize voice, and teaching students how to create voice, may produce higher quality writing skills.

In summary, this review of literature indicates that there is a positive correlation between L1 grammatical and lexical proficiency and L2 writing. Although the ideal situation for bilingualism is parallel development of multiple languages, especially starting at a young age, there is a plethora of research that supports the hypothesis of that positive correlation in older participants as well. As additional languages are generally not taught in the US until the secondary level of education, this is an especially important finding because it suggests that English language arts courses

can have a major impact on world language instruction and learning.

Discussion

The purpose of writing this paper was to explore whether or not, and to what degree, first language proficiency benefits additional language learning. The research was divided into three categories: bilingualism, L1-L2 relationship, and instructional strategies.

Bilingualism

Studies indicated four major conclusions pertaining to the development of multiple languages. The first is that, in learning an additional language, academic voice is difficult to acquire and takes many years of practice and immersion into the target culture.

Results from several studies demonstrated that languages are best learned simultaneously, especially when the additional language is acquired at a very young age. This trend is especially noticeable with young people who are immersed into the target culture, as they are learning the additional language in much the same way they learned their first language.

Related to simultaneous language learning is the existence of inter-language that occurs in bilingual individuals. Less proficient bilinguals often combine their languages to create an inter-language that used pieces of each language. Another form of this is code-switching, when bilinguals are able to switch from one language to another, often within the same sentence, at will. Inter-language develops into code-switching, which is an indication of high proficiency in each spoken language.

An issue with simultaneous language learning that was discovered by Hassan (2008) was that immersion in the L2 culture results in loss of the first language, in all or part. Researchers found that in 75% of

participants, L2 had dominated L1 after 15 years of simultaneous instruction and immersion. Although this one study refutes pieces of several other studies about the simultaneous development of languages, the point that additional languages develop best at a young age and in an immersion setting rings true.

L1-L2 Relationship

Bearing some of the information above in mind, the relationship between L1 and L2 is obvious; the question is what the nature of this relationship is. More studies turned up about the concurrent instruction of L1 and L2, as well as L1 proficiency and its effect on L2 acquisition. Van der Leij et al. (2010) were examining whether or not concurrent language instruction inhibits the first language, and, in situations of non-immersion, found that it does not, but it rather benefits the native language. Although the results of this one study seem to contradict Hassan's (2008) study that found that L2 dominates L1 over time, but there is a simple explanation for this. The participants in Hassan's study were immersed in the target culture and not receiving concurrent instruction in their native language, whereas participants in van der Leij et al.'s (2010) study were not immersed in the target culture and were receiving concurrent instruction. This would seem to suggest that simultaneous acquisition is only a problem for the native language in an immersion context where instruction in the native language is nonexistent.

In addition to concurrent instruction benefiting L1, studies also found that high proficiency in L1 significantly benefits acquisition of L2. This correlation indicates that students who are less proficient in their native language will struggle more with additional language acquisition. The implication is that, in order to learn an

additional language well, students will need to demonstrate a high level of ability in reading and writing their native language.

Another factor in language learning, for both the first and additional languages, is reading. Studies show that extensive reading habits have a positive correlation with writing ability. This is true whether acquiring an additional language, or the native tongue. So, a correlation can be made that extensive reading, in addition to high native language proficiency, benefits additional language acquisition.

Language Acquisition Strategies

The major conclusions drawn from the studies are twofold: (1) language learning is social and situated, and (2) student voice is essential in language learning. When learning an additional language, student best learn in the context of living rather than learning through vocabulary and grammar drills. Learning is situated, meaning that it is a cooperative endeavor. Students learn from each other and their own mistakes. They receive comprehensible input from the instructor and authentic materials and produce language together in a community of learning. This social aspect of learning, which supports indirect grammar instruction over direct instruction, is very important to language learning and is left out of traditional foreign language classrooms which focus on drills and form rather than function.

Student voice is also vital to student learning; in this context, voice represents oral and written production of the language. Students must be given opportunities to practice using the language that they are learning, and practicing with each other, in a social environment, is most effective. When students are able to practice producing language with peers, they are less likely to be afraid or nervous about production; this is known as the affective filter which acts as a

mental block that restricts language production. When students do not produce language, their learning is stunted. Therefore, the most effective language strategies include social and contextual environments with low risk for student language production.

Recommendations

Based on the conclusions discussed above, recommendations for language instruction, in both the native language and additional languages, include social and contextual practices. Cooperative language learning is an instructional practice that incorporates the social aspect of language learning by using socially structured groupwork in the classroom. In this collaborative setting, students are able to learn from each other as they navigate the texts and activities. Some examples of activities that are useful in cooperative language learning are Think-Pair-Share and roundtable seminar discussions. In these activities, students are given opportunities for individual thought and planning, small group check-ins, and larger group discussion and language production.

Also useful is task-based instruction which incorporates realia and authentic content into the curriculum. This strategy is based on the fact that students learn in context, so designing relevant tasks is an effective way to teach and practice the rules of language in an authentic setting, simulating an immersion setting. This instructional method is a combination of direct and indirect grammatical instruction, although it also focuses on contextualized learning, vocabulary, grammar, and syntax are included in the curriculum on an as-needed basis. Instructors must, therefore, analyze the needs of students in order to best support their learning. Activities in task-based instruction include situated group and individual tasks such as working with

clocks, calendars, train and bus time-tables, travel itineraries, etc. These activities require students to, on both an individual or group basis, practice problem-solving and language production.

Content-based instruction also relies on relevant, contextualized learning, but in this case, the focus is on the content rather than the social aspects of learning. Like task-based instruction, content-based instruction incorporates texts and images that are authentic to the target language and are interesting for students, thus raising motivation levels. Students learn language through a thematic course of study; for example, in a unit on immigration, students learn content and vocabulary that are specific to that theme. As this is another example of indirect instruction, the focus here is on function of language rather than form, meaning that grammar and syntax are secondary to actually learning the content. This strategy is useful in first language classrooms and advanced additional language classrooms, but its limitation is that it falls short of fully supporting a true novice language learner.

The last recommendation is that additional languages be taught beginning in early elementary school. The studies within this paper indicate that bilingualism is best acquired when both the first and the additional language are taught and learned concurrently, starting at an early age. The best form of concurrent instruction is in bilingual schools, a model that is practiced in several areas of the US. Young children learn an additional language through content area studies in an immersion setting, imitating the acquisition of their primary language.

Conclusion

Although the connection that L1 proficiency benefits L2 acquisition is easily made, it is now important that further

research be done of the effects of L2 instruction on L1 writing and composition. Especially in regards to high stakes testing in the US, this further research can have significant implications for foreign languages in American schools. If it is found that learning additional languages increases writing scores in the native language on standardized tests, then perhaps foreign language instruction would be more highly valued in the American education system.

Further research would also be useful in the effectiveness of specific strategies for both L1 and L2 in an effort to streamline language instruction between languages. In order to increase writing ability in both the first and additional languages, research on the strategies used during concurrent instruction is needed. If students are learning through social interactions and context in their native language and through direct instruction of grammar and syntax in their foreign language classroom, they will lack context for both languages because they are being learned so differently.

Additional languages are benefited by high proficiency in the native language. This implies that, in order for students to be better prepared for additional languages, instruction in the native language must be effective and intrinsically motivating, and reading is necessary for both first and additional language acquisition.

References

- Baba, K. (2009). Aspects of lexical proficiency in writing summaries in a foreign language. *Journal of Second Language Writing*, 18(1), 191-208.
- Bauer, E.D. (2004). Parallel development of writing in English and German. In F.B. Boyd, & C.H. Brock (Eds.), *Multicultural and multilingual literacy and language: Contexts and*

- practices* (pp. 207-217). New York: Guilford Press.
- Bloome, D. (2003). Language and education. In J.W. Guthrie (Ed.), *Encyclopedia of education* (pp. 1388-1392). New York: Thomson-Gale.
- Canagarajah, S. (2002). Multilingual writers and the academic community: Towards a critical relationship. *Journal of English for Academic Purposes*, 1(1), 29-44.
- Canagarajah, S. & Jerskey, M. (2009). Meeting the needs of advanced multilingual writers. In R. Beard, D. Myhill, J. Riley, & M. Nystrand (Eds.), *The sage handbook of writing development* (pp. 472-488). London: Sage Publications.
- Dahlberg, C. (2003). Foreign language education. In J.W. Guthrie (Ed.), *Encyclopedia of education* (pp. 893-899). New York: Thomson-Gale.
- Dweik, B. & Al Hommos, M. (2007). The effect of Arabic proficiency on the English writing of bilingual-Jordanian students. Unpublished manuscript. ERIC Document #497505.
- Fielding, L.G. (1992). Language arts, elementary. In M.C. Alkin (Ed.), *Encyclopedia of educational research* (pp. 707-711). New York: Macmillan Publishing Company.
- Graham, S., Schwartz, S.S. & MacArthur, C.A. (1993). Knowledge of writing and the composing process, attitude toward writing, and self-efficacy for students with and without learning disabilities. *Journal of Learning Disabilities*, 26(4), 237-249.
- Hassan, D.J. (2008). Self-perceptions of native language abilities in bilingual Hispanic young adults. *Language, Culture, and Curriculum*, 21(2), 138-153.

- Hedgcock, J. & Atkinson, D. (1993). Reading-writing relationships in L1 and L2 literacy development? *TESOL Quarterly*, 27(2), 329-333.
- Ito, F. (2009). *Threshold to transfer writing skills from L1 to L2*. Online Submission, Revised version of paper presented at the Symposium on Second Language Writing, Nagoya, Japan, 2007. ERIC Document #506378.
- Lange, D.L. (1992). Foreign language instruction. In M.C. Alkin (Ed.), *Encyclopedia of educational research* (pp. 521-528). New York: Macmillan Publishing Company.
- Leikin, M., Schwartz, M. & Share, D.L. (2010). General and specific benefits of bi-literate bilingualism: A Russian-Hebrew study of beginning literacy. *Reading and Writing*, 23(3-4), 269-292.
- Richards, J.C. & Rodgers, T.S. (2001). *Approaches and methods in language teaching*. New York: Cambridge University Press.
- Roca de Larios, J., Manchon, R.M, & Murphey, L. (2006). Generating text in native and foreign language writing: A temporal analysis of problem-solving formulation processes. *The Modern Language Journal*, 90(1), 100-114.
- Van der Leij, A., Bekebrede, J. & Kotterink, M. (2010). Acquiring reading and vocabulary in Dutch and English: The effect of concurrent instruction. *Reading and Writing*, 23(3-4), 415-434.
- Zhao, C.G. & Llosa, L. (2008). Voice in high-stakes L1 academic writing assessment: Implications for L2 writing instruction. *Assessing Writing*, 13(1), 153-170.

Interdisciplinary Science Education

This literature review of ten studies examined interdisciplinary approaches to science instruction. The peer reviewed empirical qualitative and quantitative studies were analyzed for their approaches to integration and methods used. Three major categories emerged out of the analysis of these studies: (i) integrating science and literacy; (ii) integrating different sciences together; and (iii) different approaches to interdisciplinary science integration. The findings suggest there are several ways to teach science in an interdisciplinary manner including but not limited to: thematic units based around student interest; interdisciplinary team teaching; the teacher as co-learner approach; and project-based learning. Further questions were raised about how teaching from an interdisciplinary perspective may add to and detract from student learning. Implications of how this will affect my practice as a teacher are discussed and possible areas of future research are outlined.

Integrating different disciplines allows the student to access concepts from a variety of different avenues, increasing their chances of learning. Many science educators believe that this will help students meet most of the science standards and benchmarks, and achieve higher levels of scientific literacy, while also enabling them to have a more meaningful learning experience (Horton, 1981; Hurd, 1997; McComas & Wang, 1998). Interdisciplinary approaches to teaching have the potential to increase student engagement, raise achievement, and reinvigorate stale teaching, they also reflect “real world” problems in which many disciplines and perspectives may be brought to bear (Beane, 1997).

As a future science teacher I am very interested in learning how secondary level science can be taught in an interdisciplinary manner and what the best approaches are. Many students today seem to learn science in isolation, and may not understand how science can be applied in other disciplines. Most students do not choose a science based profession; however they will all use science

in their lives, and by learning it in an interdisciplinary manner they will be better prepared to apply their knowledge in their lives. During my student teaching placement I realized I had a great opportunity to integrate what my students were learning in their other subjects since most of them shared the same schedule, and all the teachers had the same planning period. I also realized that there was scope for overlap in what I was teaching, between the health, mathematics, and English class. However, I didn't know how to approach integrating these other subjects into my class. My goal is to be more prepared to attempt interdisciplinary science instruction in my spring student teaching placement, and in my future career as a science teacher.

Interdisciplinary teaching is a very topical issue in the educational community right now. I believe this is a trend that will become more popular as schools implement programs such as multi-disciplinary block periods, and cross-curriculum faculty teams. I believe that a successful teacher must be well rounded and be able to show students how what they are

learning relates to other subject areas and to their life outside of school.

As with any new ideas about the direction of education, there are a number of points of disagreement in the field of interdisciplinary education. What exactly interdisciplinary science education should look like is a point of dispute. One popular approach is focusing on problems facing society through an interdisciplinary science perspective. Since many problems facing society involve other social factors, there is a school of thought that they can be solved through the application of scientific knowledge, technical expertise, social understanding, and human compassion (Kranzberg, 1991). Another question revolves around the extent to which subjects should be integrated. A transformative approach involves teaching an issue with a holistic approach that focuses on the issue and integrates science and other disciplines equally. A different approach would be to focus on the science concept and work-in information from other disciplines. Some have noted that interdisciplinary curricula require time and resources that are not usually available, and as a result are often superficial, and easily degenerate, with one of the integrated subjects dominating the curriculum at the expense of others (Alder & Flihan, 1997).

If we continue to teach all skills in isolation will only reinforce the ideas that we acquire different skills for use in different subject areas. Recent years have seen a variety of calls for the development of interdisciplinary curricula linked with broader reforms of curriculum and instruction (Sizer, 1996). Research has shown that experts' abilities to understand and solve problems arises as a result being able to connect and transfer disciplinary knowledge (Bransford, 2005). Educational reforms of the Perkins Act encourage academic and vocational teacher

collaboration for pedagogy revision, multidisciplinary integration and creating real-life learning experiences (Lankard, 1992). By integrating these themes into new school science curricula it becomes relevant to the life of every student (Hund, 1998). Interdisciplinary project based learning is another approach that focuses collaborative projects that require the learning and application of this contextual knowledge.

A major point of disagreement with collaborative projects is the issue of with what other disciplines science should be integrated with. The majority of the literature on interdisciplinary science education examines ways to integrate science and literacy (Bintz, 2010; Broemmel, 2006; Guzzeti, 2009). Being able to read and understand text is just as important with science as with any other subject. There was also good amount of literature that focused on how best to teach the different disciplines of science together, since there are obvious overlaps within these subjects (Lambert 2006; Stevenson, 2008; Zhe, 2010). However there was very little literature that I could find that examined how science and the arts could be integrated. What subjects should be integrated with each other is certainly an issue that is worthy of a lot of discussion

There is also the issue of integrating interdisciplinary science education should be approached. There are various ways that have been described, from team teaching with teachers from different disciplines, to students researching projects that combine different subject areas (Applebee, 2007). This is something that I want to research and understand better so that I have different avenues to explore when I try to implement this in my classroom.

Interdisciplinary education is a hot topic right now, there are many new research studies published each year, and there is a wealth of literature on the subject.

What I am interested in researching further is ways science has been integrated with other disciplines and analyzing those different approaches. There are a variety of methods to teach interdisciplinary curricula that have been described in the literature, ranging from simple correlation to major reconstrual of the subjects. In the next section I will discuss in more detail the different interdisciplinary approaches that have been researched relating to science and the different ways this has been done. There are several directions in which interdisciplinary teaching can be taken. For the purpose of this paper I have chosen to narrow my scope to solely looking at studies that focus on teaching science in an interdisciplinary manner, within secondary level education, students ages 12-18.

Literature Review

There are a number of peer reviewed studies that investigate teaching science in an interdisciplinary manner. They focus on different aspects of interdisciplinarity. Of the peer reviewed research studies I examined, I have categorized them as having one of three different focuses. The first focus was examining ways in which science can be integrated with literacy in an interdisciplinary manner. The second focus was examining how the different sciences can be integrated and taught in an interdisciplinary manner. And lastly, the third focus revolved around the different approaches that have been used to teach interdisciplinary science.

I researched these studies in November and December of 2010 using the ERIC and PsychINFO journal databases accessed from The Evergreen State College using the keywords 'interdisciplinary' 'collaborative' and 'integrated'. I focused on studies that related to science, and limited my search to only peer-reviewed qualitative and quantitative studies, sorting by date.

Literacy and Science

Developing and implementing relevant, interesting and challenging curricula is important in science education as it is with any subject area. Literature can be used as an effective way to engage students in science. By teaching science and literacy in an interdisciplinary manner it is possible to improve students' literary comprehension, vocabulary and interest in science simultaneously (Broemmel, 2006). Using literature in science can increase student motivation by allowing students more opportunities to connect science concepts with their own literary experiences. There are a number of studies that examine what it looks like to integrate science and literature in the classroom.

One study looked at how capitalizing on students' out of school interests helped students learn science (Guzetti, 2009). This particular case study examined how one high school chemistry teacher, implemented a literacy-based unit that appealed to her students by capitalizing on their out of school interests in forensic science and looked at how her students responded to that unit. The goal of this study was to increase students' ability to analyze, evaluate and communicate scientifically. The inquiry-based unit incorporated a variety of literacy activities including reading and solving crime scenes, writing murder mysteries by using forensic evidence, and reading and discussing forensic-related web pages and print texts. The results of the study showed that students related the knowledge and skills that they learned from their interactions with everyday texts in informal settings to the science concepts that they learned in class.

The study proved to be successful in this particular class, however the success of this case study was mainly due to the students prior interest in forensic science. Students were tested before and after the

unit with a 20 item multiple choice assessment that measured their understanding of physical science and forensic concepts. Pretest and posttest data demonstrated significant gains in achievement. In other classrooms students may be interested in other facets of science where a vast amount of age appropriate literature is available, such as astronomy, paleontology or other areas. The results of the study were described from the perspective of the class as a whole. It would have been useful to see an individual breakdown by student to see if this technique worked for all students regardless of their prior interest in forensic science. This leads to the question what role does prior interest play? It seems that the key to this type of success may be to get to know the students and understand what their interests are. It is also important to understand that one particular facet of science may engage some students but not all.

A similar case study by Bintz (2010) examined teaching middle school earth science using the literary technique of using copy change with trade books. Copy change is an instructional strategy in which students use an author's text pattern for their own writing. By using trade books which are works in which texts and illustrations combine to form a single work of art, it allowed students to access the material through different media. The research question addressed in this study was how to develop and implement an interdisciplinary curricular engagement that would help students become better inquirers, allow them to take ownership of their learning, learn important concepts in earth science, and invite them to demonstrate their learning in creative and meaningful ways? Once again the students' interest in the science concept was the primary indicator of success. The project was "designed to actively engage

students in learning earth science by sparking interest, arousing curiosity, supporting self-selection, and taking ownership" (p. 117). The intent was to help students value and use reading, writing and art to learn science.

A wide variety of texts were chosen in this study including fictional, nonfictional, and informational texts. The textbook was not ignored or abandoned but was included and used as part of the text set on earth science. Bintz noted a concern for many science teachers when veering away from the science textbook was the accuracy and scientific merit of other material used. This was a limitation of this study, in that they pre-selected texts to avoid presenting students with inaccuracies. They filtered out "samples that described inaccurate science, illustrated inaccurate science, or reflected a disconnect between illustration and text" (p. 112). This presented a problem with the findings of the study, since they filtered out inaccurate work they did not show what happens when students are faced with this material. A follow up study that would be very interesting would be to see how presenting students with inaccurate science material could reinforce misconceptions or help students challenge misconceptions.

Using full length fiction texts can help a student's understanding of science concepts also. It is often challenging to select books that are appropriate for both language arts and science. One case study examined classrooms that used "teacher choice" texts to integrate science concepts into literature (Broemmel, 2006). Teacher choice texts are a list of books compiled by the International Reading Association and the Children's Book Council that "reflect high literary quality in style, content structure, beauty of language, and presentation; might not have been discovered or fully appreciated by children without introduction by a knowledgeable

educator; and have the potential for use across the curriculum” (p. 254). This study found that this integrative teaching approach empowered students to take a more active part in their learning, and students' interest in reading and science achievement increased. The study found that “Approximately 80% of those who used the integrated science and literacy program claimed that they liked science, as opposed to 40% in the other two groups” (p. 254). One limitation of this study was that when choosing a book from the teachers' choice booklist, teachers selected books based on their own personal preferences, not by any predetermined criteria. This could affect the outcome of the study since student interest in a text is very personal and a teacher's personal preference may not also interest their students. It is also a concern in science since appropriate and accurate content is critical. A major flaw of the study was that the authors did not review all the books selected. “If neither of the main libraries or the 17 branch libraries owned the book we considered the book ‘unavailable for review’. Of the 99 books targeted, 12 were unavailable for review” (p. 255). This seems like a very large portion of books to not review. These were not 12 random books either, they were the books that were the hardest to find, and therefore perhaps they shared other features such as being too scientific for a mainstream library to carry. An interesting point that the study highlighted was that many books contained fantasy components as well as science content. These books could lead to misconceptions, so should be used in a manner that explicitly presents to students what is allegorical and what is factual. It was also interesting to see what areas of science had the most literature. The study's findings were that the majority, 56, of the books contained material that could be used to support instruction in life science, but

only 11 books dealt with earth and space science and only two books contained content related to physical science (p. 256). In the classroom these books can be implemented not only as sources of reading material, but also for interdisciplinary instruction, but the limited number of texts available in physical science would severely limit their emphasis.

These studies that focus on integrating literature and science share a few common themes. The literature used in these studies varied from short trade books to full length novels, but they were all successful in engaging the students to one extent or another. A common concern was that when integrating literature and science, the scientific appropriateness of literature often came into doubt. In science, pairing appropriate and accurate content is critical to ensure misconceptions are not reinforced. This is an area in which many teachers report feeling intimidated (Gallas, 1995).

Another theme common to these literacy and science studies is the need to capitalize on student interests with literature in order for the students to become engaged in the material. Although this wasn't the focus of the studies, it is an issue that was raised in each of the studies. To do this, first it is essential to get to know what the interests of your students are and tailor the material appropriately with the understanding that student interests will vary. This can be done in a classroom by differentiating the material based on individual student interests.

Integrating Different Sciences Together

There were several studies that focused on teaching different science classes together in an interdisciplinary manner (Lambert 2006; Stevenson, 2008; Zhe, 2010). In these cases integrated science courses, in which earth and space science, biology, chemistry and physics concepts are

taught within a common context, have been proposed as one possible solution. Many science educators propose that integrating the science curriculum will help students learn most of the standards and benchmarks, and reach higher levels of scientific literacy, while also enabling them to have a more meaningful learning experience (Lambert, 2006).

One study examined collaboration between agriculture-science teachers and science teachers (Stevenson, 2008). The focus of this descriptive study was to determine the type and frequency of collaborative activities occurring between agriculture teachers and science teachers who taught in schools with agricultural educational programs. It also analyzed the extent to which science and agriculture teachers valued collaborative practices and identified factors that helped collaboration and barriers inhibiting collaboration. It found that science and agriculture science departments often share equipment and supplies, whereas instructional materials and ideas were shared much less (p. 107). It found that most science and agriculture teachers held positive attitudes concerning the potential for collaboration. But it also reported that collaborative activities between the groups were limited, with science teachers indicating less collaboration occurring than agriculture teachers. The large majority of science teachers indicated that they have not attended workshops demonstrating agri-science integration, and both groups identified lack of preparation time as the most significant barrier inhibiting collaboration. On the positive side both groups indicated that close proximity of facilities, teacher commitment, teacher attitude toward science and agriculture, frequent professional interaction, and administrator support facilitate collaboration. Collaborative efforts have the potential to foster decision making skills

cognitive skills and critical thinking skills as well as to enhance student comprehension of scientific principles by linking science with real-world applications. Results found that 72% of science teachers in the study and 78% of agri-science teachers concurred that collaboration enhances student comprehension of scientific concepts. The teachers identified offering equipment, supplies, facilities, and sharing instructional techniques as collaborative activities that occurred.

This study was very useful in that it illustrated a lot of barriers to collaboration. It seemed that a lack of communication between the teachers of the different disciplines was the major barrier to collaboration. This would be an issue in any subject area, especially if the teachers did not see possible areas of overlap in the curriculum as was the case in this study. "The findings indicated that both groups were unaware of similarities in curriculum" (p.115). Territorial contention and competition between departments was also a major barrier. One thing the study did not focus on is what it would look like to teach agriculture and science in one classroom under the same teacher. It would be interesting to see how that would change the focus of the instruction.

Another study did look at teaching integrated science in a single classroom (Lambert, 2006). This descriptive study compared classes that taught high school marine science in an integrated manner combining biological, geological, and physical characteristics of the oceans with those that did not. The study conducted a pre and post assessment of the students' level of scientific literacy, science concepts and science-technology-society (STS), as defined by the national science standards and benchmarks. The results found that students of teachers who integrated biological, chemical, geological, and

physical characteristics of the oceans performed significantly higher on the content assessment than other students, from 39.5% on the pre science assessment, to 42.9% on the post science assessment. Students' understandings of STS related issues did not significantly change, although post-instruction qualitative responses were reflective of the national science standards and benchmarks. Results indicate that marine science can be used as a model for teaching integrated science if curricula and instructional practices are aligned to national standard. A limitation that the study identified was the lengthy assessment used in the study "marine science is integrated, encompassing multiple science disciplines, thus requiring a length assessment of students' knowledge of general science" (p. 649). It would be interesting to see the results of the study if a less lengthy assessment was used, that didn't rely on testing their prior knowledge as much. The study also didn't assess the student's prior interest in marine science, as this might greatly affect their success in learning integrated science in this way.

A different study that did take into account the student's prior interest in science was also successful (Zhe, 2010). This study selected high school students who had expressed a prior interest in science to take an extra summer course focusing on integrated science using a STEM (Science, Technology, Engineering and Math) curriculum that was designed to encourage them to consider choosing an engineering major in college and to explore STEM as a future career. The program took place over a 10-week period during the summer and involved multidisciplinary research activities. The participants in the program included 33 high school students. The method of science instruction was integrative, however the success of this study cannot be solely attributed to that

since there was no control group. The article shows that student's comments generally viewed the program positively, and that it did impact their career plans. A limitation of this study was its selection of students. All the participants had expressed a previous interest in science, which led them to apply for the program. 33 applications were received before the deadline, and all of the applicants were accepted. The results claim that "of the 21 participants who were in position to make a college decision all 21 had decided to attend and had been admitted to college...thus, the program was very successful in terms of encouraging students to attend college." (p. 65) This however is not necessarily a reflection on the success of the study, I would think that all of those students had already decided to apply for college, since they were proactive enough to apply for this study. The study also looked at whether the students had chosen a STEM major, they found that of the 21 students, 18 (86%) had chosen a STEM major and 3 (14%) had chosen a non-STEM major. Thus they concluded that the program was successful in achieving awareness of college STEM majors and encouraging students to maintain their commitment to STEM. However in order to really tell if the students were affected by this program, the students should have been surveyed before and after the program to see if their choice of major had changed. As the study point out itself, a major limitation was the lack of quantifiable data.

What these studies have in common was their integrative approach to teaching multiple science disciplines. They all claim to be successful to one degree or another, although it seems that it is in their interest to claim so since they are proposing their integrative approach as a model for teaching. What these studies touch upon is the need for students to be scientifically literate across a variety of different sciences.

Emphasis on scientific literacy has become key to students understanding of scientific concepts. Scientific literacy is defined as the “knowledge and understanding of scientific concepts and processes required for personal decision-making, participation in civic and cultural affairs, and economic productivity” (Lambert, 2006, p. 633). These studies claim that by achieving scientific literacy through interdisciplinary means, student gain a better understanding of how the sciences relate to each other and how to apply them in different concepts. The studies differed in their approaches to how they chose to teach interdisciplinary science. There are a number of different methods that have been explored when teaching science in an interdisciplinary manner, the next section of this literature review will explore some different approaches.

Approaches to interdisciplinary science instruction

A number of different approaches to teaching science in an interdisciplinary manner have been explored. In this section I address a few common approaches. One researcher, Wallace, (2007) looked at different configurations of teachers to measure student success. They compared a team of four teachers, each specializing in a core subject area and teaching this subject to all 100 students on the team. The other configuration featured a team of two teachers, both delivering multiple core curricula to 50 students. The study compared middle schools featuring a different interdisciplinary teaching team configuration. Different schools were compared, these schools were attempted to be matched on location, size, ethnicity, and percentage of students on free or reduced lunch. However, I feel that even despite this matching is it still not possible to accurately say that they were comparing like with like, because so much depended on the teachers

selected. Nevertheless the results of the study are still informative. The results found that students in schools featuring the interdisciplinary team scored higher on bonding to peers, bonding to schools and bonding to teachers. It was clear that interdisciplinary team teaching produced a significant effect on student social bonding. However it is possible that this effect might be a result of other variables beyond the scope of this study. The characteristics of the students, the characteristics of the school environment, and the characteristics of the teachers were among the variables that were not measured in this study (p. 10).

A different approach to teaching a subject in an interdisciplinary manner is to focus around one unifying project. This project based learning (PBL) model was researched in a high school setting by Chang (2010) in a two year study that integrated computer science and other subjects to study the feasibility of the proposed model. The results showed that the model used was feasible and successful in the given educational setting, and that the students enjoyed the project based learning activities. The interdisciplinary teaching approach that was tested was a win-win situation for all teachers. “The computer teachers earned a newfound respect from her colleagues, and the subject teachers had more effective interactions with their students” (p.968). A limitation of this study is obviously that the competencies of the teachers in project based learning affects the results hugely, as the study states “If the computer teacher was a novice to PBL, then an experienced PBL practitioner should also be involved” (p. 968). A school with no teachers experienced in project based learning would most likely struggle to achieve the same success.

Another research study conducted by Applebee (2007) studied 11 different interdisciplinary teams that involved 30 teachers and 542 students in New York and

California. The teams tried a variety of different approaches to interdisciplinary curricula, ranging from simple correlation to major reconstrual of the subjects. The results found that the teams that engaged in the most reconstrual of traditional content also used instructional approaches that emphasized cognitively engaging instruction, including an emphasis on envisionment-building activities and extended discussion of significant ideas, but individual members of teaching teams still varied considerably in teaching style. The study concluded that interdisciplinary coursework is neither a problem nor a solution in efforts to increase student achievement. Rather, it involves a number of tradeoffs that need to be considered at the school site. It raised the question of what topics and concepts should be used to focus the larger curriculum conversations? It asked "Should physics and biological sciences be taught in separate years, as they are in most American schools, or be revisited each year, as in many European educational systems?" (p. 1036).

The final study I researched presented an interdisciplinary cognitive science curriculum that is based on constructive epistemology. In this study by Zimmerman (2010) examined the dynamic in the classroom when the teacher acted in the role of the co-learner rather than a transmitter of knowledge, thereby also changing the responsibility of students. The preliminary results of this study have shown this approach to be successful. The experience has shown that truly interdisciplinary approach to science demands a different attitude towards knowledge as well as to both teaching and learning. It raises the important point that "the structure of the curriculum as such allows for individual construction of learning paths" (p. 153). So that it allows students to have a say in their own individual curriculum, which will be

important in any interdisciplinary approach, as each student will have their own slightly different interests. It was refreshing to see this different approach applied successfully.

One question that these studies bring up is how do teachers practice and assess themselves on their ability to successfully apply these different strategies of interdisciplinary teaching. One study by Green (2003) examined teacher's effectiveness in teaching integrated science. Integrated science teaching is a way of teaching scientific ideas as a whole, incorporating material from other disciplines. In this study the science teachers were observed by five science teacher educators and assessed based on 15 competencies. The results of the study found that the teachers were assessed as generally fair in their demonstrated integrated science competencies, they were relatively strongest in the environmental category of competencies and weakest in the pedagogical category. It recommends more in-service training opportunities for these teachers to improve their pedagogical competencies. It would have been interesting to see how teachers self-assessed themselves in these competencies as well, to see if there was much of a discrepancy. A glaring limitation of this study was that it tested science teachers from Nigeria, so the results may not necessarily transfer to American science teachers, but it is an interesting study nonetheless.

These different approaches to interdisciplinary teaching all have certain advantages, and have been shown to be successful in these studies. This leads me to wonder how transferrable these strategies are to the average teacher who does not have any specific training in interdisciplinary teaching. Some studies have mentioned more teacher in-service days would be necessary to give the proper training, but what about the background of the teachers.

As Stevenson (2008) showed, many teachers are reluctant to venture outside of their comfort zone, which is usually their disciplinary limits. Personally I would be eager to practice these strategies for the reasons stated at the beginning of this paper. But before I can do so I need to analyze which approaches would be best suited in my school environment.

Implications

The research question exploring integrative approaches to interdisciplinary science instruction has exposed me to some new ideas that I look forward to experimenting with in my classroom. The studies investigated were all directly related to this research question. The three major categories that emerged out of the analysis of these studies were integrating science and literacy, integrating different sciences together, and the different approaches to interdisciplinary science integration. Now that I have done some research into these studies I have discovered some pedagogical practices I can apply in my own science classroom.

I look forward to integrating literature with my science instruction in a way that can help student understanding of science concepts. The studies repeatedly demonstrated that approaching science from this perspective is particularly useful to most students. As explained integrating literacy can be done in a number of ways depending on the type of literature used. It is important to understand where the students are in terms of literacy, so that age appropriate material is chosen (Hurd, 1998). Teachers unfamiliar with how to assess age appropriate literacy should use other resources available to them at their school such as language arts teachers to select appropriate literature. An important consideration is that in order to make the activity interdisciplinary, attention must also

be paid to the literature chosen and value must be placed on that.

In terms of integrating different sciences together in one classroom, I now have a clearer idea of what that could look like in my classroom. The studies have shown that it can be an effective way of highlighting a science issue and examining it in different lights (Kranzberg, 1991). I think especially in middle school level science this could be done more seamlessly because there is typically more overlap between the sciences, since at this age the goal is to give students a strong background and broad overview, rather than examining science in such detail. Teaching science topics thematically is another way to study systems as a whole and analyze them in terms of the different sciences.

The different approaches that have been researched here could be all be used to help students better connect with the material. I have a much better idea of different practices I could implement based on these approaches. Project based learning seems to be an approach that doesn't require much extra training since it is similar to what many traditional teachers already practice. This is an approach that I look forward to experimenting with further. The teacher as co-learner approach would be useful to implement with students who do not need as much guidance, to integrate different aspects of science. This is probably most appropriate for advanced high school level science classes. The team teaching approach seems to have the most obstacles because of the structure needed. But it could be useful in situations where teachers have differing areas of expertise, it also requires a flexible schedule, with block periods or when two teachers can combine at the same time. These strategies inform my pedagogical practices in that I am now armed with more tools at my disposal for

how I could integrate science better in the context of my students' schooling.

I still have a number of questions about how I should implement these strategies and practices. One concept that I am still unsure about is when I try to teach to my students' interests, how do I gauge these interests? It seems that some sort of pre-assessment could be used. But that raises the further questions of who's interests should be taken into account. Should it be the most general areas of interest commonly shared in the class, or should I tailor my instruction so that each student can build upon their interests on an individual basis? Another consideration that I have mentioned previously is that when using literature in my science classroom, I need to be aware of how the science concepts are presented within the literature, so that I don't reinforce any misconceptions. This is something that I am very aware of, and I look forward to this challenge. A big question I still have is how to know what approach to use and when. I think this is something that I will have to experiment with over time, but at least now I feel that I have somewhere to begin. And lastly it will be vital for me as a teacher to constantly be reflecting on my practice and constantly assessing my own success in integrating interdisciplinary science instruction. I feel that I still have a lot of questions regarding interdisciplinary science instruction, but I am very eager to continue my research and practice throughout my teaching career.

References

- Adler, M., & Flihan, S. (1997). *The interdisciplinary continuum: Reconciling theory, research, and practice*. (Report Series No. 2.36). Albany, NY: Center on English Learning and Achievement.
- Applebee, A. N., Adler, M., & Flihan, S. (2007). Interdisciplinary curricula in middle and high school classrooms: Case studies of approaches to curriculum and instruction. *American Educational Research Journal*, 44(4), 1002-1039.
- Beane, J. (1997). *Curriculum integration: Designing the core of democratic education*. New York: Teachers College Press.
- Bintz, W. P., Wright, P., & Sheffer, J. (2010). Using copy change with trade books to teach earth science. *Reading Teacher*, 64(2) 106-119.
- Brassell, D. (2006). Inspiring young scientists with great books. *Reading Teacher*, 60(4),336-342.
- Bransford, J.D., & Donovan, M.S. (2005). *How Students Learn*. Washington D.C.: The National Academies Press.
- Broemmel, A. D., & Rearden, K. T. (2006). Should teachers use the teachers' choices books in science classes? *Reading Teacher*, 60(3) 254-265.
- Chang, L. C., & Lee, G. C. (2010). A team-teaching model for practicing project-based learning in high school: Collaboration between computer and subject teachers. *Computers & Education*, 55(3) 961-969.
- Green, R. D., & Osah-Ogulu, D. J. (2003). Integrated science teachers' instructional competencies: An empirical survey in rivers state of nigeria. *Journal of Education for Teaching: International Research and Pedagogy*, 29(2) 149-158.
- Guzzetti, B. (2009). Thinking like a forensic scientist: Learning with academic and everyday texts. *Journal of Adolescent & Adult Literacy*, 53(3) 192-203.
- Hurd, P. D. (1998). Scientific literacy: New minds for a changing world. *Science Education*, 82, 407-416.

- Kranzberg. (1991). Science-Technology-Society: It's as simple as xyz! Theory into Practice. *Science, Technology, Society: Challenges*, 4, 288-293.
- Lambert, J. (2006). High school marine science and scientific literacy: The promise of an integrated science course. *International Journal of Science Education*, 28(6) 633-654.
- McComas, W. F., & Wang, H. A. (1998). Blended Science: The rewards and challenges of integrating the science disciplines for instruction. *School Science and Mathematics*, 98, 340-348.
- Stephenson, L. G., Warnick, B. K., & Tarpley, R. S. (2008). Collaboration between science and agriculture teachers. *Journal of Agriculture Education*. 49(4) 106-119.
- Sizer, T. R. (1996). *Horace's hope: What works for the American high school*. Boston: Houghton Mifflin.
- Wallace, J. J. (2007). Effects of interdisciplinary teaching team configuration upon the social bonding of middle school students. *Research in Middle Level Education*, 30(5) 1-18.
- Zhe, J., Doverspike, D., Zhao, J. Lam, P., & Menzemer, C. (2010). High school bridge program: A multidisciplinary STEM research program. *Journal of STEM Education: Innovations & Research*, 11(1) 61-68.
- Zimmermann, E., Peschl, M. F., & Römmer-Nosseck, B. (2010). Constructivist Curriculum Design for the Interdisciplinary Study Programme MEi:CogSci - A Case Study. *Constructivist Foundations*, 5(3) 144-157.

Teaching in an Inclusive Environment: Effective Classroom Strategies for Students with Learning Disabilities in Mathematics

Many general education teachers do not feel like they have the tools or strategies to teach students with learning disabilities in their classrooms. This literature review paper is seeking to determine whether there are strategies that can benefit students with math learning disabilities in a general education classroom. This paper focuses on studies that were related to mathematics strategies. The selected studies had to have some relation to students with learning disabilities. The students varied from elementary to high school aged students. The studies concluded that group work can benefit students with learning disabilities as it gives them alternative ways of thinking about a topic and additional learning strategies. Self-monitoring is a positive strategy to have students use because the technique gives students a tool to track their learning and understanding. Group-work theories coincided with the empirical studies reviewed. A recommended practice is group work because it has both social and academic benefits for all students. This practice increases students' status, providing students with alternate ways of accessing information, and providing students with additional resources.

Today, more than 40 percent of students in special education will not graduate. It is imperative to have effective classroom strategies to provide students with the confidence and tools necessary to graduate. According to the Nation Association of State Board of Education, "43% of students in special education do not graduate, less than half of all youth with disabilities are employed after having been out of school one to two years, and 12% of youth with disabilities have significantly higher likelihood of being arrested than their non-disabled peers, and finally the overall dropout rate is estimated to be between 18-21%" (as cited in Thompkins & Deloney, 1995a, para.1). These statistics are staggering and provide evidence that something needs to change in the school setting. Too many students with learning disabilities are being forgotten in a general education classroom and left with menial work tasks. As a teacher intern, I saw many students who were left unchallenged and

bored due to teaching strategies that just were not reaching these students. At my teaching site I observed that no two students are alike.

No student will learn, convey, or have similar life experiences exactly as another student. All students are individuals, which can make the learning environment rich and diverse. There may be learners in the classroom that might have an individualized education plan (IEP). These students have the right to be part of an inclusive learning community and be challenged with effective learning strategies. However, not everyone feels that students with learning disabilities should be a part of the general education classroom. For example the "president of the Florida Education Association United, is concerned that inclusion, as it all too frequently is being implemented, leaves classroom teachers without the resources, training, and other supports necessary to teach students with disabilities in their classroom" (Thompkins & Deloney, 1995a,

para. 1). He presumes that an inclusive education is not the best way in which to teach children with and without learning disabilities and goes on to state that “the disabled students are not getting appropriate, specialized attention and care, and the regular students’ education is disrupted constantly” (as cited in Thompkins & Deloney, 1995a, para1). This quote suggests that teachers are not adequately being prepared with effective teaching strategies for students with learning disabilities. On the contrary, many scholars believe that inclusive teaching is beneficial to all students. For example, “students with disabilities in inclusive environments improve in social interaction, language development, appropriate behavior, and self-esteem” (as cited in Thompson & Delmey, 1995b, para. 5). Other scholars state that the “real world” is not divided into “regular” and “special” (as cited in Thompson & Delmey, 1995b, para. 4). This brings me back to the point that all students have the right to be educated in a general education classroom with the best teaching strategies to be utilized.

This literature review will seek to answer the question- what are the best teaching strategies to use when teaching in an inclusive classroom. Hopefully, with discussing recent studies and powerful teaching tools that should be used with students with disabilities, teachers will feel prepared and not feel as if they are pausing class and taking away time from students without disabilities.

Education is a very powerful tool to be used in order to produce future leaders and workers of the world. For instance, “The emphasis in education is to ensure that all students learn. Therefore, it is important to create optimal learning opportunities for everyone” (Sileo & Garderden, 2010, p. 14). Every student wants to feel part of a learning community,

competent, and needed. Yet, not every student learns in the same manner and some students have a specific learning disability. This means that optimal learning environments need to be created, so that all students can learn. Not every strategy will work for every student, and as a result, I will discuss studies that try to reduce the problem of students feeling excluded from their learning environment using specific classroom strategies.

It is important to have effective classroom strategies for all students. During my fall 2010 student teaching experience, I saw that many teaching strategies that did not benefit students with specific learning disabilities. Such strategies would be isolating the student with a math learning disability from peers and requiring the student to work alone. It is vital to have effective strategies that work for students with learning disabilities because they are part of the learning community and without effective strategies they may feel left out of the community and possibly at times incompetent. For example, according to Brennfleck “one in ten youth with disabilities do not consider themselves to be useful or important ‘at all,’ and 12 percent say they ‘rarely’ or ‘never,’ feel hopeful about the future” (as cited in Shannon, 2009, p. 34). This suggests that learning disabled students can suffer from feeling inept and have a lack of confidence. Because I want to create a change in such attitudes, I have decided to explore classroom strategies, as stated above. However, the classroom strategies mentioned in the literature review paper may be useful for all students.

As a teacher intern, I observed students with learning disabilities singled out of group work and not accepted socially. At this point in my intern experience, I asked myself, what are ways in which I can prevent students with disabilities being singled out and how can I make their

education meaningful to them? This topic is important to me because all students should be made and feel a part of the learning community. Without every student's interaction and involvement an educational community is not being created. The topic is also important to me because I want every student to learn to the best of their ability and I know that not every strategy works for all students. Therefore, I want to educate myself and others regarding effective tools that are being used by other teachers and programs. Parents will also be interested in this information because they want their students to be learning and getting everything they can out of their education. For example, "some parents of students with more severe disabilities are concerned about the opportunities their children will have to develop basic life skills in a regular classroom setting. They are also cautious about inclusion because of fears that their children will be ridiculed by other students" (as cited in Thompson & Deloney, 1995a, para.7). This suggests that parents are very concerned about the education and perception of other students towards their child with disabilities. For the purpose of my paper, a learning disability is defined, according to Individuals with Disabilities Education Act (IDEA) 2004 as "a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations" (Shannon, 2009, pp. 55-56).

The limitations of this paper is that I do not focus on students who have behavior disorders, instead this paper is focused on effective strategies for students with specific learning disabilities in math class. I do not discuss students who experience difficulty with hearing, seeing, or following classroom rules, and many of the research studies are

conducted with a small population in a suburban or rural area. Therefore, in order to focus my paper, I have chosen to limit my paper to just teaching strategies that can be used in the area of special education mathematics.

Literature Review

I gathered my information from various sites including Education Research Information Center (ERIC) and Journal Storage (JSTOR). While searching these sites the key words I used were "heterogeneous classrooms," "teaching students with learning disabilities (LD)," "teaching strategies for students with LD", "studies for group work", "self-monitoring check lists." In addition, much of my theory-based information came from Cohen (1994) and her ideas around group-work.

This literature reviewed paper is organized in three main sections. In the first section is a discussion about the benefits of group work and collaborative learning, the second section is about self monitoring and progress monitoring by the teacher, and the final section discusses alternative ways to teaching mathematics.

Collaborative Learning

Slusser and Erickson(2006) discuss the importance of collaborative learning. Slusser and Erickson studied students from two introductory sociology classrooms. The purpose of their study was to examine how cooperative learning groups affect behavior, learning, and outcomes on collaborative learning tests. This study was performed on an experimental group and a control group. There were a total of 78 students of which 42 students were in the control class and 36 students were in the experimental class. The experimental group had time after the test to discuss questions and concerns and the control

group simply took the test and turned it in. The methodology Slusser and Erickson used was a quasi-experimental design and survey data collected from the students in two introductory to sociology class. The researchers handed out quizzes to the students. After completing their quizzes, the students were able to discuss their answers with a group for two minutes. For the two minutes they shared answers with their group, filled in blanks, and debated inconsistencies. In addition, Slusser and Erickson handed out a survey that gathered information about students' perceptions about quizzes to both classes. They handed out a survey related to the collaborative testing process to only the experimental class.

Slusser and Erickson predicted that participation in collaborative learning would improve student learning. Students who were involved with the group learning would state on the survey that the quizzes helped to motivate them in the class and to keep up in reading. Finally, they predicted that students who were in the experimental group (which was the group who discussed for two minutes with others about the test) would have positive attitudes about learning.

The results that Slusser and Erickson obtained were as follows: "the positive effects did not extend to either the exam grades or the final grades" (Slusser & Erickson, 2006, p. 256). In addition, they found that the students who were in the experimental group reported that they were encouraged to complete the assigned reading as opposed to the control group. Finally, their last hypothesis was supported by students in the experimental group who stated they had positive attitudes when it came to learning.

This study is beneficial to my research because the results of the study show that participation in collaborative

groups has a positive impact on students, both in terms of motivating students to complete their work and by improving students' attitudes toward learning. Cohen (1994) also suggests that group work benefits all students when done properly. For example, "when students were taken out of class and given a group task, those who came from classes using cooperative learning showed far more helpful and cooperative behavior—and much reduced negative or competitive behavior—than those coming from classrooms where only whole class instruction was" (p. 17). Group work has many positive impacts on all students, both socially and academically.

A possible limitation of this study is that it was done through survey data. It could be possible that many students were not truthful on their answers. In addition, the students were in sociology classes who were selected for this study and not a math class. Additionally, the study does not explicitly state if there were students with learning disabilities involved and how the group work affected them.

Butler, Beckingham and Lauscher (2005) investigated ways to support students with learning disabilities to learn math strategically. Butler et al. followed 3 eighth grade students who struggled in math. The students in the case study were from an urban school district. The students had to answer three questions about themselves as mathematicians. The questions addressed conceptions of what learning in mathematics is about, knowledge about their strengths and weaknesses, and knowledge about strategies for learning math. The researchers used the answers to these questions to inform themselves about similarities and differences of the case study students. Through the metacognitive responses the researchers also gathered the student's strengths, weaknesses, and their

strategies. This helped support the researcher's interventions and interactions. Butler et al. found that "the struggling learners, who admittedly hated math, were positively engaged in active learning and collaborative problem solving through strategic learning" (p. 171). Deliberate teaching can alter ones perceptions of math and in turn help increase the students' success in math. Teachers who made students check, recheck, and test their work while working collaboratively with the teacher or student showed positive outcomes such as the students who gained strategies for solving multiplication and division problems.

This research benefits my research question because it finds that students with learning disabilities had a positive reaction to the experiment. For example, through group work they learned to enjoy and become more engaged with math. In addition, the students found new strategies that worked for them when completing math assignments. Not only were the attitudes of students changed towards the subject area, but they were also given useful tools when completing math assignments on their own. This study in conjunction with Slusser et. al (2006) supports the positive effects of collaborative learning.

The possible limitations of this study are that only one of the students had a diagnosed math disability. The other two students were students who had difficulties in a math setting. This does not address students who might suffer from dyscalculia.

Monitoring Progress Through Self and Teacher

Brookhart, Andolina, Zuza, and Furman (2004) investigated the affects of self-assessment. The subjects in the research were three student teachers, two

university professors, and three cooperating teachers. The students who were involved were from two classrooms of 20 and 21 students. The study took place a suburban elementary school in eastern United States. During each class period a 5 minute timed multiplication test was conducted once per week for ten weeks. To make the task more enjoyable individual times tables were used and they provided strategies to help students learn and students were expected to self reflect. The self reflection sheet was laid out as goal, location, plan, action, results, did you see improvement (GPAR). Additionally, students were expected to make predictions on how they would perform on their next test. Data from the classes were first analyzed separately because each class was very different from one another. The results obtained by self assessment in minute math for both classrooms were that students predictions of their class work was generally correct, that is to say 70% of students had constructed a strategy and stuck to it. Overall, the findings were "genuine reflection was more supported in class 2, getting the task accomplished-filling in the form easily and correctly- was more of the emphasis in class 1" (Brookhart et al, 2004, p.225). Overall, metacognition worked well in student assessment of their work and they were able to develop useful strategies and goals.

This study is beneficial to the research paper because it indicates that metacognition is beneficial when the goal is to have students develop strategies to use in mathematics. Also, having students think about their thinking helps them to develop strategies in math. A possible limitation to this study is that the sample sizes were fairly small. The overall sample consisted of only 41 students.

Uberti, Mastropieri, and Scruggs (2004) investigated how a check list might

help students succeed in mathematics. This study had 20 students involved, a special education, and general education teacher working together. The students were selected at random. The students were chosen because they were in three different general education classrooms. The procedure was that each student used an individualized self-monitoring checklist that was developed based on his or her errors in math class. For example, Uberti et al. (2004) state that, "the special education teacher developed individualized self-monitoring checklists based off an error analysis of each student's difficulties" (p. 269). The checklists were very much individualized. The checklists helped students to recognize the errors that they may make on a new assignment and the checklists gave students a step-by-step process of the task. The results of this study indicate that checklists can be very beneficial to students learning. For example, Uberti et al. (2004) state that "the data indicate that each student who completed the intervention program greatly improved his or her score from the original posttest to the final posttest. Specifically, the mean total score for the students rose from 31% correct to 90% correct" (p. 273). Uberti et al. also found "the students who participated in the intervention were also very motivated to do their best" (p. 273). Uberti et al. found that using checklists is a way to motivate students and also have students engaged in their learning community.

This study is beneficial to my research question because it supports attitudes in math changed over time and students began to have a positive and motivational outlook in math. In addition, the check it off strategy helped to improve students test scores. Students were able to metacognitively think about the steps they were making in math because of the help

of the individualized check sheet. Possible limitations in this study are the population of the tested students was not very large.

Bell and Pape (2003) investigate how students can take control of their own learning in math. This was a two year study performed by Bell a 7th grade teacher with assistance from Pape. Together they investigated Bell's 7th grade classroom, which was chosen at random because Bell did not know the students who would be in the class. The middle school was in a downtown Midwestern town. 58% of the students were African American, 41% white, and 1% Hispanic with 29 student's total. The methodology the researchers did to inform their conclusion were written reflections from students and teacher. Students were asked to make daily observations as to how they learned math. The results that were found were when the teacher was able to create useful learning communities the students engaged in solving high demand questions and they were motivated. Bell et al. found that "the students provided evidence that their knowledge and awareness of strategies had increased" (186). Through self-monitoring, asking questions, and learning to understand concepts rather than memorize them, Bell et al. found that student monitoring can be very powerful and provide students with a rich learning opportunity to check, recheck work, and ponder with other students over their confusions.

This study is beneficial to my research questions because it provides an additional strategy that will help to support student learning. This experiment supports when students self monitor themselves, write down questions, and think about their learning in math, they were helped to strengthen their confidence and mathematical conceptions and abilities. This study can provide teachers with

another strategy to help support learners with disabilities in the classroom without making them feel overwhelmed. Possible limitations to this study is the small sample size as the classroom only consisted of 29 students, and of those 29 students it does not specifically specify how many students had a learning disability.

Rock and Thead (2007) investigated five students with and without disabilities using the ACT-REACT self-monitoring to increase their academic engagement and accuracy.

ACT-REACT is a mnemonic device that represents a six-step process that includes: Articulate your academic and behavioral goals, Create a self-monitoring work-plan to record your academic and behavioral performance, Take picture(s) of your behavioral goals using self-modeling, Reflect on your academic and behavioral goal attainment after each class, Evaluate your academic and behavioral progress over time, and ACT again, continuously (Rock & Thead, 2007, p. 391).

The ACT-REACT is a continuous process for the student to monitor their goals, academic achievement, and behavior. The students who were investigated were not randomly selected. The 4th/ 5th grade teacher selected students who had a lack of engagement in the accelerated math program. Of these five students, 3 had different learning disabilities, one had ADHD, and one student was non-disabled. The research took place in an elementary school in southeastern United States in a general education room. The research lasted for five months, four times a week. Rock et al. collected data from observing the students involved in the study. The students who were involved worked independently and the curriculum was individualized based on the students needs. Finally, all of the students involved

completed exit interviews which asked if the students like the ACT-REACT approach to learning. Rock et al. found that the ACT-REACT results show a positive growth in student's academics and behavior. "Overall, the results of this study support the advantages of strategic self-monitoring and also point to the mixed benefits of fading these procedures in inclusive environments" (p. 405).

This study is beneficial to my research question because it supports the use of self-monitoring and is an easy strategy for teachers to incorporate into their classrooms to make learning meaningful to students with learning disabilities. For example, Rock et al.(2007) have found through research that many general education teachers find self-monitoring appealing because they do not have to do excessive work and it is very engaging for students. For instance, "there is no question, self-monitoring is an effective intervention to improve students' self-control and academic awareness" (p. 390). The possible limitations to this study are that the sample was not random. The teacher specifically selected the five students based on engagement level. In addition, the study sample was very small.

Foegen (2008) investigated the effects of progress monitoring. The bulk of the progress monitoring study was done in general education classrooms, which included students with learning disabilities over three years. There were two studies conducted in the research, for the purposes of this paper one study will be referred to as district A and the other as district B. District A was performed in a small Midwestern town. 97% of the students were white and 9 of the 11 students with disabilities were enrolled in the general education algebra class. District B was another high school from a Midwestern community. 82% of the students were

white. All 15 students with disabilities were enrolled in general education math classes. Progress monitoring material was collected from September to April. The methodology that was used was progress monitoring in conceptual understanding, the type of task, number of items and duration of task, and the score the students received. Foegen (2008) found that “progress monitoring may have sufficient technical adequacy to be used as indicators of student development in algebra” (p.72). In addition, Foegen (2008) found that progress monitoring is useful when determining if students are making progress. With the implementation of a progress monitoring system in algebra comes the professional obligation to take action when the data suggests that a student is not making sufficient progress” (Foegen, 2008, p. 72). The final results of the study were that the criterion validity support students with IEPs and students in the general education.

This study is beneficial to my research question because it is another way to provide support to students with learning disabilities while making them feel part of the classroom. Foegen (2008) found that this study is useful to determine if students are making progress and it is a simple tool that can be integrated into the teacher’s day. Possible limitation to this study is whether teachers who used the progress monitoring made changes to their curriculum if students with learning disabilities were not understanding a concept.

Alternative Ways to Teaching Math curriculum

Burris, Huebert, and Levin (2006) investigated the question of whether schools should provide a rigorous middle school mathematics curriculum to all students, not only initial high achievers.

145 middle school students were investigated. This study was conducted in a suburban community of 28,000 in Nassau County, Long Island. Burris et al. had two research questions that provoked them. The questions asked whether more students take and pass more math courses at the level of trigonometry and above. The method used to determine the effects of accelerated mathematics was examination of the achievement data in six cohorts. Three groups were exposed to the accelerated math while the other three groups were not. Burris et al. found, “more students at initial lower achievement levels studied advanced mathematics as well. Increases were 38% to 53% for sequential mathematics and 19-35% for precalculus” (p. 129). In addition they found that “after universal acceleration, more students continued to study those rigorous mathematics courses associated in the literature with later success in terms of both college completion and future earnings” (129).

This research is beneficial to my research question because it supports that accelerated mathematics can be helpful to all students, not just the students who already excel in math. In addition, accelerated math had positive implications for life after high school.

The possible limitations of this study is there were not many students with learning disabilities involved with this study; however the few who were involved showed growth and the ability to be and want to be in math algebra and pre-calculus. It is also important to note that this study was done in a suburban area. The results of this study may have changed had it been performed in an urban impoverished area where they may or may not be as much support.

Simon and Hanrahan (2004) discuss the importance of teaching students with

learning disabilities useful ways to add. Three students with math disabilities were selected for Simon and Harahan's study. The 3 students were in the same classroom. The school was in the greater Montreal area. Additionally, the school where the students were tested in was a school exclusively for students with learning disabilities. Two of the three students were at least 2-3 grade levels below in mathematics. The method that was used for this research was probe sessions. The study took place in a quiet area three times during the week. Students were taught dot positions and addition problems. The students were all independent from one another during the sessions. During this intervention students were not able to learn from the other before all have had an opportunity to receive the instructional program. Therefore, the three students were not allowed to interact with each other during the periods. Students were taught the dot position numbers 1-9, the student first copied the teacher, and then they drew their own dots above each number. Once the task was completed the three students were expected to touch and count each dot above the numbers. The students were to memorize the numbers and after successfully memorizing the numbers they went onto larger numbers. The results of the study were "all three students were able to master the pattern of dots after one session (p. 206)." The researchers also found that "once they had mastered the dot-notation system, the subjects consistently chose this system over other available methods such as finger or tally counting" (p. 202). All students' scores significantly rose after they had mastered the dot method.

The benefit of this study is that it provides alternative ways to teaching addition to students with learning disabilities. This study provides students

with additional tools to be successful in math class. They have another means of adding numbers other than counting on their fingers. This method is a method that can be concealed and students may be more prone to use this method to avoid embarrassment of using their fingers. Understanding how children with learning disabilities in math learn to add is a very useful strategy to have.

A possible limitation to this study is dot notation method is not something that has been commonly researched. In addition, this method Flexer and Rosenberger, as stated in Simon et al. suggest it may hamper students' ability to learn and use other methods because they have experienced great success with the dot method.

Scheuermann, Deshler, and Schumaker (2009) studied the effects of explicit inquiry routine (EIR) on the performance of math. The participants of this study were 20 students who were diagnosed with a learning disability, between the ages of 11-14 and in the grades 6-8, have an IQ standard-score above 85, and who demonstrated a struggle in mathematics. The students had a signed parental consent forms approving them to participate in the study. The study used only 14 of the 20 because of unstable scores. The study was performed in a charter school that was specialized for students with disabilities. The study was conducted in a Midwestern state. Sixty-five percent of students were males and 10% were minorities. The study was conducted through EIR which consisted of three components: explicit content sequencing, scaffolded inquiry, and systematic use of various modes of illustration. They measured the success of EIR through a word problem test, manipulation test, and KeyMath R test. The results of this study were "all but one

student surpassed the mastery criterion (80% accuracy) by the final instructional probe, and the one student who didn't attain mastery gained 50% of points" (Scurmann et al, 2009, p. 115).

This study benefits my research paper because it provides multiple strategies that teachers can use in their classrooms to increase student learning in mathematics. For example, this study shows the benefits of ERI instruction. If the instruction is explicit and dialogue is being used rather than drill and memorize, then positive results should be reflected. A possible limitation to this study is that the group was small.

Section one reviewed studies on classroom strategies that might help students with a learning disability in math succeed. The strategies were cooperative learning groups, using a check list, teaching with purpose, heterogeneous grouping, touch math method and setting high expectations and limiting anxieties. The next section discusses how putting all of these strategies together in math class can help promote confident learners, bring a sense of relief to teachers, and encourage students to want to continue to strengthen their own learning.

Discussion

The question that I addressed in my literature review paper is: what are the best teaching strategies to use when teaching in an inclusive classroom, i.e. a classroom that incorporates learning disabled students with the general classroom population. As I stated in my introduction, no two students learn, think, and have the same life and educational experiences. Every student deserves to be challenged through curriculum and not felt like they are incompetent. The problem presented is that many scholars believe that learning disabled students should not be included in general

population classrooms. They believe that when learning disabled students are included in general education classrooms, the students who do not have learning disabilities do not have an enriched learning experience. In addition, these scholars believe that teachers do not have the time or proper strategies to teach students with learning disabilities in the general education classroom. This paper analyzed empirical studies that supported teaching students in a general education classroom, while providing teachers with strategies and tools to make them feel confident about teaching in an inclusive classroom.

Collaborative learning can have a positive impact on all students and it is an easy strategy to incorporate into the classroom. Many students who are diagnosed with a learning disability feel inept and worthless and as a result drop out of school. However, when learning disabled students participate in a collaborative method approach students attitudes towards the subject matter changed from negative to positive, students began to develop a positive self image of themselves as learners and students began to put forth an effort on assignments. For example, Slusser and Erickson's (2006) found that collaborative learning in sociology class motivated the students to try their hardest on tests, complete assignments, and their attitudes towards class work changed. Collaborative learning groups seem to limit student anxieties. Butler et al.(2005) also focused on the benefits of collaborative learning. This study also supported the finding that attitudes were converted from negative to positive in the area of math. Butler et al. found, "struggling learners, who admittedly hated math, were positively engaged in active learning and collaborative problem solving through strategic learning" (p.171). The two studies display the benefits of collaborative group learning students with

learning disabilities. Scholars such as Cohen (1994) believe that group work is beneficial to all students. Group work can limit status, it brings out talents, and it makes all students feel as if they are successful in some area, thus benefiting all students. Overall, collaborative learning strategy to teaching can have a huge impact on the attitudes of students and it is an easy method to incorporate into the classroom.

Progress monitoring can help students track their work progress by monitoring what they understand and what they are still struggling with. When students were able to track and keep progress of their own learning, they were metacognitively aware of areas of success and areas in which additional support was needed. Creating a self-monitoring check list for students was helpful because the checklists helped to inform their learning. Students' scores improved drastically on post tests. The step-by-step support helped students to remember the steps of a problem. Additionally, self monitoring programs such as set a goal, plan, action, and results (GPAR) showed drastic improvements of scores in mathematics class work. Bell and Pape (2007) student's metacognition and self-monitoring helped to build successful strategies that students could use in math class. They found that through asking questions, self-monitoring learning and learning to understand concepts through question asking helped to improve students' attitudes in math and improved their understandings of math concepts. The study upheld that math does not always have to be about memorization. Instead, math can be explored through questions, self-monitoring, and journaling.

The studies used in this paper support that math is not always about independent work that focuses on memorization of facts. Math can be enjoyable for all students including those who have a learning

disability. With the immersion of the strategies presented in this paper, students' attitudes became positive towards math, their desire to learn increased, and in many cases the studies supported an incline in math scores. This suggests that students with disabilities who are immersed in a general education classroom can be successful, their feelings about themselves being incompetent change and they can develop lifelong strategies.

Recommendations

The recommendations for teachers and staff are to attend professional development trainings on alternate ways to teaching students with learning disabilities. In addition, it is recommended that staff and teachers collaborate with the special education teachers. By working with the special education teachers, the general education teacher can find out a lot about the students with learning disabilities immersed in the general education classroom.

Conclusion

In order to continue to develop an understanding of strategies that support students with learning disabilities in the classroom further research is necessary. Foegen (2008) suggests that additional research on progress monitoring strategies is necessary. In addition, further research in math strategies is needed at the elementary and secondary level.

References

- Bell, C. & Pape, S. (2003). Developing mathematical thinking and self-regulated learning: a teaching experiment in a 7th grade mathematics classroom. *Educational Studies in Mathematics*, 53(3), 179-202
- Bookhart, S., Andolina, M., Zuza, M., Furman, R., (2004). Minute math: an action research study of student self-

- assessment. *Educational Studies in Mathematics*, 57(2), 213-227.
- Burris, C. Heubert, J., & Levin, H. (2006). Accelerating mathematics achievement using heterogeneous grouping. *American Educational Research*, 43(1), 105-136.
- Butler, D., Beckingham, B., & Lauscher, H. (2005). Promoting strategic learning by eighth-grade students struggling in mathematics: a report of three case studies. *Learning Disabilities Research and Practice*, 20(3), 156-174
- Cohen, E. (1994). *Designing groupwork strategies for the heterogeneous classroom. (2nd ed.)* New York: Teachers College Press.
- Foegen, A. (2008). Algebra progress monitoring and interventions for students with learning disabilities. *Learning Disabilities Quarterly*, 31, 65-78.
- Rock, M., & Thead, B. (2007). The effects of fading a strategic self-monitoring intervention on students' academic engagement, accuracy, and productivity. *Journal of Behavior Education*, 16(4), 389-41. doi:10.1007/s10864-007-9049-7
- Scheuermann, A., Deshler, D., & Schumaker, J., (2009). The effects of the explicit inquiry routine on the performance of students with learning disabilities on one-variable equations. *Learning Disabilities Quarterly*, 32, 103-120.
- Shannon, J. B. (Ed.). (2009). *Health reference series: Learning disabilities sourcebook*. Detroit, MI: Omingraphics, Inc.
- Sileo, J., & Garderen, D. (2010). Creating optimal opportunities to learn mathematics. *Teaching Exceptional Children*, 42(3), 14-21.
- Simon, R. & Hanrahan, J. (2004). An evaluation of the touch math method for teaching addition to students with learning disabilities in mathematics. *European Journal of Special Needs*, 19(2), 191-209
- Slusser, S. & Erickson, R. (2006). Group quizzes: an extension of the collaborative learning process. *Teaching Sociology*, 34(3), 249-262. doi: 10.1177/0092055x0603400304
- Thompkins, R & Deloney, P. (1995a). *Inclusion: the pros and cons. Concerns about and arguments against inclusion and/or full inclusion.* SEDL Advancing Research, Improving Education. Retrieved from <http://www.sedl.org/change/issues/issues43/concerns.html>
- Thompkins, R & Deloney, P. (1995b). *Inclusion: the pros and cons. Educational support for inclusion.* SEDL Advancing Research, Improving Education. Retrieved from http://www.sedl.org/change/issues/issues34/support_for_inclusion.html
- Uberti, H., Mastropieri, M., Scruggs, T. (2004) Check it off: Individualizing a math algorithm for students with disabilities via self-monitoring checklists. *Intervention in School and Clinic*, 36(5), 269-275.

Ryan T. Leacy

Effects of the Practices Within Advancement Via Individual Determination (AVID) on The General Secondary Classroom

This literature review explores the practices of Advancement Via Individual Determination (AVID) and their effectiveness in the general classroom at the secondary (grades 6-12) level. Peer reviewed research studies and journal articles were used to analyze the effectiveness and transferability of the specific practices of Socratic Seminars, Cornell notes, and rigorous curriculum. This paper found that AVID's practices positively affected the academic growth of most students. However, the combination of the practices has weak points and don't work for all students. This paper recommends that AVID's practices be used to structure a general classroom, but need to be used consistently and include material that relates to the needs of all students. Also, it is concluded that a teacher could successfully implement the practices of AVID in his or her general classroom without the structure and funding of the full AVID program.

Over the past three years I have spent significant time in three different public schools. Each of the schools were structured slightly differently, but one school in particular had a unique program that specifically targeted a select group of students to promote performance in the general classroom and attendance at a four-year college. This program was called Advancement Via Individual Determination (AVID) and I was fascinated by the programs concepts, curriculum, and goals. The following purpose statement is proudly displayed on its website "AVID is a fourth-through twelfth-grade system to prepare students in the academic middle for four-year college eligibility. It has a proven track record in bringing out the best in students, and in closing the achievement gap" (AVID, 2011). The operation of the program cost the school district a significant amount of money, approximately \$15,000 per class per year (American Youth Policy Forum, 2002). However, the program was hailed as the savior of students who might slip through the cracks of the educational system and

drop out by the district. That stance is reiterated by professional educators such as Watt et al. (2007). Lozano et al. (2009) noticed that the program affected the entire attitude of the school and for the most part encouraged all students to succeed in their general education classrooms and eventually attend college. However, Black et al. (2008) found that some students were alienated by the program and there was an attitude that only students in AVID were going to attend college. In my experience I saw some students that were inclined to do minimal work in their general classes as a result of that negative attitude.

The other two schools I spent time in didn't have AVID and the attitudes of students were significantly different. The school I student taught in held the attitude that all students had the ability to succeed in school and had systems in place to support all students. There was a still a small group of students who weren't motivated to succeed, but they seemed to be doing so because they were acting out socially or emotionally and not from the alienation of select school programs. The students who

did succeed in school did so without any real goals. Most of the students were unsure about what they wanted to do with their lives and many of them weren't getting an external push to attend college.

The purpose of this literature review is to examine the effects of the practices within the AVID program on students' academic performance in the general classroom during their secondary (grades 6 to 12) education. This review will help teachers make educated decisions when it comes to deciding whether or not work for a school with AVID or if they should utilize AVID's practices in their classroom in a school that doesn't have the full AVID program.

AVID is a program that prides itself on helping students succeed in their secondary education by boosting their school wide learning and performance (AVID, 2011). AVID claims that 99.6% of the high school seniors in the program graduate and that 91.2% of its seniors meet college entrance requirements. These statistics and ambitions are impressive, but what are the stories behind these numbers and how does AVID structure its program to reach these goals? It is interesting to note that the AVID website only proudly displays the statistics of their graduating seniors and not of their overall student population. Based on my experience the senior level AVID classes were much smaller than the other secondary grades. It is information like this that sparks my interest in finding out if AVID's rigorous curriculum is an effective way to promote growth for all students in general classrooms.

According to AVID's director Jim Nelson, students must master four skills during their secondary education before entering the next stage of their life. These four skills are organization and study skills, effective questioning, class participation and ability to synthesize information. These four skills seem reasonable and almost mandatory for any student to fully grasp a

concept (Nelson, 2007, p.72). However these skills are not regularly incorporated in the general classroom. Many educators, including those who formed and run AVID, believe that students are slipping through the cracks as a result (p. 73). To meet AVID's four essential skills they structure a curriculum that is based on rigorous standards, WICR (writing, inquiry, collaboration, and reading), Cornell note-taking, and Socratic Seminars (AVID, 2011). At the secondary level AVID students are enrolled in an elective class. In this class they are taught to utilize the four practices to meet their needs as learners. They are expected to utilize the practices in their elective and general classes. General classroom teachers are encouraged, but not required to aid the students in the utilization of the practices. These four practices and their effectiveness on the general classroom environment will be the focus of this study.

The majority of available studies on the effectiveness of AVID focus on the program's ability or inability to boost college attendance and the morale of the students in the program. These types of studies are very helpful when looking at the overall effectiveness of AVID's full program, but they don't go in to great detail on the specific practices that make up the program. There are studies available that don't specifically mention AVID, but take a look at the effects of leveled questions and tutorial dialogues, which are some of the key elements of the AVID program, on the general classroom environment (Gholson et al., 2009; VanLehn et al., 2007). There are some researchers that have taken the time to look at AVID's ability to boost the academic performance of struggling students (Watt et al., 2006; Watt et al. 2004). Control group schools that give an alternative look to how non-AVID schools motivate their students are also factored in to those studies.

This literature review utilizes peer reviewed academic studies and some supplemental journal articles to explore the practices within the AVID program. These studies were located through the ERIC database on the Evergreen State College's Library website. The data within these resources and my past experiences in public schools helped form the discussion for this literature review.

The Effects of Specific AVID Practices WICR (Writing, Inquiry, Collaboration, and Reading)

WICR Is a technique developed by AVID to promote comprehension skills in the classroom and is touted as being the foundation of the program. Through WICR, AVID wants its students to be able write, inquire, collaborate and read in order to better understand the concepts that are being discussed in the general classroom (AVID, 2011). At this time there are no available peer-reviewed research studies on the WICR method. There is a Clearinghouse review by the U.S. Department of Education that states that the AVID program and its WICR method doesn't meet their standards to promote growth in reading and writing skills (U.S. Department of Education, 2010, p.4). There seems to be a conflict between AVID and the Department of Education on standards and what practices are most effective concerning the development of children. Since both organizations have political agendas, it is important to look past this conflict and look at what peer reviewed researchers have to say about the specific practices centered in WIRC that make up AVID's practices.

Cornel Notes

According to the WICR method, writing is an essential tool that must be utilized in order to fully understand a concept (AVID, 2011). AVID promotes

writing every day in the general and AVID elective classrooms through the practice of Cornell or matrix note taking. Students are expected to take these notes during all class lectures, discussions, readings, and activities. For Cornell note taking, a piece of notebook paper is to be split into three sections. The left margin of the paper is the area where a student is to summarize the topic or the concept that is being discussed. In the body section of the paper the student is expected to write the key ideas or any deep-level questions they have about the topic. When a new topic or concept is discussed the student is expected to draw a horizontal line and repeat the process until the front and back of the page is full. Once the page is nearly full the student is expected to summarize all the information on the page in to one or two paragraphs. AVID believes that this method of note taking helps its students fully understand the concept they are learning and best prepares them for tests and quizzes (AVID, 2011). Similar to the WICR method, it is difficult to find peer-reviewed research on the Cornell note-taking method, but there are limited studies available that compare the Cornell style to traditional styles (bulleted or outlined notes) and non-note taking strategies.

Kiewra, et al. (1988) sought out to find the most effective note-taking styles for students to perform well on recall activities. The study compared four different strategies that college students may use to prepare for tests and just over ten of the forty-four participants were randomly assigned to each group. Kiewra et al. looked at how the methods of Cornell notes, traditional notes (bulleted and outlined), and no notes prepared students to highly perform on tests. The test subjects viewed a nineteen-minute video lecture and were not allowed to take notes. A week later students were given the same video lecture, but three groups were allowed to take notes and the other group

had to work from memory. Students were then given three tests to see what knowledge and content they gained from the video. The results of the study found that the note takers significantly outperformed the non-note takers (p.596). Furthermore, the Cornell note takers outperformed the both sets of the traditional note takers (p.597). Their reasoning behind the results was that the Cornell note takers were able to make more internal connections to the concepts because their note-taking style made them think about three different ways to explain a concept (p.597).

The results of Kiewra et al. (1988) back up AVID's choice to utilize Cornell note taking to promote students' understandings of concepts. Although the study proves that Cornell note taking does strengthen students' understandings of concepts, it doesn't go in to detail on the specific benefits students can gain from Cornell notes besides improved performance on tests. Therefore, it is crucial to examine another study that looked at Cornell notes' specific benefits towards student learning.

Makany et al. (2009) explored what type of note-taking strategies best enhanced cognitive performance by testing college students' abilities to process information through linear and non-linear note taking strategies. Cornell notes fell into the non-linear category. Twenty-six students were randomly split in to the two note-taking groups and were tested on five different cognitive abilities (comprehension, complexity, accuracy, metacognition, and memory). The subjects were allowed to take notes during a large lecture and a group panel and were then tested on the knowledge to recall key points from the presentation. Makany et al. found that the non-linear note takers significantly out performed the linear note takers in the areas of comprehension and metacognition when notes were allowed (p.628). Both groups performed similarly

and not as well compared to the other areas when notes weren't allowed to answer questions (p.629).

Based on those results it can be seen that a non-linear note-taking strategy like Cornell notes help students better understand and become more self aware of the concepts they are learning. The way that Cornell notes are structured help students connect what they are learning through summarizing what they have learned through their own words (Makany et al. p.628). Therefore, Cornell notes can be used as a great tool for students to develop an understanding of concepts that makes the most sense to them. However, this study also pointed out that any type of note taking strategy isn't a beneficial tool for memorization of knowledge and instructors should use other tolls to promote memorization if that is a part of the course goals (p.630). Although this study was conducted with college students in England, it stands as a useful model to show exactly what type of skills students gain from note-taking strategies and how their academic growth benefits from the access to such strategies.

Tutorial Dialogues and Socratic Seminars

The foundation of the AVID elective class curriculum is a bi-weekly small group discussion. The AVID curriculum calls these discussions Socratic Seminars (AVID, 2011). The general expectation is that students are to spend two class periods a week in their elective classes discussing concepts from their general classes in groups of five to ten students with a tutor facilitating. The tutor is generally a community member not officially affiliated with the school (college student or adult volunteer), but sometimes can include the elective class teacher or other school staff members if volunteers aren't available. The main goal of these discussions is to get the students to generate

and discuss deep-level questions with their peers and tutor. There is research available to discuss the effectiveness and limitations of the Socratic Seminar process.

First, it is crucial to examine the role that an outside tutor can have on the general classroom. VanLehn et al. (2007) was interested in the effect an outside tutor had on the understanding of students' content knowledge. The study found that dialogue with a tutor boosted students' content knowledge of a subject, but only with student initiative. The study involved seven experiments that tested first year college students on their ability to gain new content knowledge with the help of a tutor. The interactions with tutors were split into three random groups; spoken interaction, online interaction, and a control with no tutor (p 50). The study found that results depended on the level of student's preparation. If they were a novice and were prepared to study at an intermediate level, then the interaction with the tutor was beneficial. If the student was a novice and just prepared for the discussion with knowledge they already knew, the session wasn't beneficial (p. 48). Therefore dialogues with a tutor are more effective if a student is pushed to learn content that may be slightly above their ability level.

That idea parallels AVID's purpose for enacting Socratic Seminars in its elective classes. The program wants students to push themselves to gain new content knowledge and believes that a discussion with peers and a tutor is a good way to accomplish that (AVID, 2011). Although this study utilized students slightly older than AVID students and doesn't specifically mention small group instruction, it is useful to see that the interaction with another individual does have a positive effect on the growth of content knowledge if the student utilizes proper preparation.

As a part of the preparation for a Socratic Seminar, AVID students are required to bring at least two deep-level questions. Deep-level questioning has a slightly different meaning for different people, but based on my experience, students were pushed to ask questions that promoted abstract thought. This meant that they couldn't ask "what" or "how" questions, but were encouraged to ask "why" or "how come". Gholson et al. (2009) investigated how asking questions that involved deep-reasoning affected student performance in the classroom. The study was trying to test popular research that stated how; college level students show greater pre-test to post-test learning if they are exposed to concepts in the form of higher-level questions. They decided to focus on eighth through tenth graders in the subjects of computer literacy and on ninth through eleventh graders in the subject of physics. The study was conducted within these students' classrooms. Gholson et al. found that the popular theory was true and the theory was transferable throughout grade-levels and content areas (p.491). This study makes broad generalizations based on specific subjects and age groups, but it does show how a student can benefit from a form of deep-level questioning. It can be seen from this research that the inclusion of deep-level questioning in class curriculum benefits students content knowledge more than classes that don't of deep-level questioning.

The two studies above verify AVID's use of the Socratic Seminar as a tool to boost student performance. With this method students are opened up to new perspectives and are pushed to reach those perspectives. If students don't put in the work to prepare for the discussion then they won't get the value out of the discussion that the students who did prepare got (VanLehn, 2007, p. 48). This process mirrors more of college and real life than just the secondary

school environment and students gain an important sense of independence through this process. Students also learn how to express their new knowledge through different modes in Socratic seminar discussions. If a student can generate and then discuss a deep-level question they have a better chance of understanding a concept than a student who did not go through that process (Gholson et al., 2009, p. 490) General education teachers should take note that discussion type activities could significantly impact the amount of higher learning that goes on in their classroom. Socratic Seminars provide the opportunity to give students another mode to express concepts that may be difficult for them.

Rigorous Course Work (Advanced Placement Classes)

AVID doesn't just expect its students to use the methods discussed above in the general classroom, it expects students to apply these techniques in Advanced Placement (AP) or college level classes as well. As a part of AVID's rigorous curriculum, they require that each student be enrolled in at least one college level class each semester (AVID, 2011). Previous studies on the full AVID program have praised AVID's inclusion of AP classes as beneficial to students even if they struggle in the class because they are given a chance to push themselves and take advantage of an opportunity they wouldn't experience otherwise (Black et al, 2008, p. 112; Watt et al., 2004, p.243). What makes this request somewhat controversial is that most AVID students aren't tracked under traditional systems to be in these types of classes. This process also requires AP teachers and general education teachers to include students that traditionally wouldn't be in its classes or normally aren't familiar with AP level curriculum. This method raises two questions; is placing traditionally lower

achieving students in higher achieving classes a good idea and should all classes be taught it the rigorous AP style to efficiently promote growth for all students? Fortunately, there is quite a bit of research spread throughout the past three decades that answers these questions.

Newfield & McElyea (1983) surveyed 58,000 high school seniors and sophomores to determine the effect of grouping based on ability level. The survey probed students to describe their experience and attitudes about the programs they were in. These results were paired with success in the class to determine if the grouping system affected their academic progress (p.49). The study found that students grouped based on ability level achieved higher grades and positive attitudes towards subject matter. It also found that students who were in the lower level classes didn't have negative views of themselves or school (p.55).

According to Newfield & McElyea (1983) AVID's un-tracking and rigorous curriculum for all wouldn't be considered a wise attempt at promoting students' growth (p.56). This study does a good job of showing how students perform well when they are comfortable in their learning environment. However, it is important to note that this study is nearly thirty years old and more modern studies argue with Newfield & McElyea's findings.

Shiu et al. (2009) investigated how perceived low-level Hispanic students performed when they were enrolled in an AP class. The study utilized survey results that tracked the social confidence and academic achievement of Hispanic students who were enrolled in a 8th grade AP Spanish class and students who weren't enrolled in the program. The results of the investigation found that the students who were enrolled in the AP Spanish class had higher levels of academic achievement and social confidence

than the students who were in the general classes (p.69).

Shiu et al. (2009) shows how some advanced classes can promote growth in students that are normally left behind, but included by AVID. The study also proves that although some students benefit from a special program, there are still just as many students, if not more that are left behind. Shiu et al. admits that their study was limited because the students they tracked were already enrolled in the AP program and could have had higher aspirations than the students who didn't enroll (p.78). Thus, the higher social confidence could have been rooted in other factors before they entered the program. This is an important limitation to be aware of because all of the students that enroll in the AVID elective class have a choice of whether or not they want to be in the class. Further research should be done on the external and internal factors that help students decide they want to join AVID. Would there be a difference if the students didn't have a choice?

Raudenbush et al. (1993) answers that question through a study that looked at how the levels of teacher's curriculum affected student performance. The study tracked 1,025 classrooms in 16 different schools and asked the teachers in those classes to provide their learning goals. Raudenbush et al. sorted out the learning goals into higher order and lower order thinking. The study found that teachers who include higher-level skills in their lessons boosted their student's comprehension of the classes' key concepts and goals (p.544). This study showed that if a teacher takes the time to plan a lesson that involves higher-level thinking with differentiated options to achieve the goal it gives all of their students the chance to gain concepts they may have otherwise not understood. However, this study is limited because it doesn't focus on the students who

may not have gotten a concept even though the majority of their peers did.

Based on the three studies above, two major patterns regarding rigorous curriculum and advanced classes can be seen. First, students that are enrolled in higher-level classes tend to be more academically prepared and socially confident than their peers that aren't in advanced classes. Secondly, there is always some group being left behind. These advanced programs help a lot of students, but there are still groups of students that don't get the chance to be in a program or don't succeed (Shiu et al, 2009, p.78). Even if a school implemented a rigorous curriculum for all, it is hard to believe based on the research above that all students would succeed (Raudenbush et al., 1993, p. 543). It shouldn't be understated that these advanced programs make a difference and push students that normally wouldn't have the opportunity, but there is the issue of giving all students the opportunity to be pushed. Would a school-wide improvement program that combines all of AVID's practices help give all students a chance to succeed? The following investigation will help answer that question.

Effects of the Combination of AVID's Practices

Now that the individual practices have been discussed, it is important to see how the combination of AVID's practices affects the performance of a student to see if it is worth a general teachers time to combine AVID's practices into their curriculum or advocate for a school wide implementation of the practices. It is important to look at three studies that gauged the usefulness of AVID's practices based on school wide performance to get an idea of what exactly the AVID practices can do for the academic success of students. Watt et al. (2004) focused just on high schools with AVID and Watt et al. (2006) included control high

schools without AVID. Black et al. (2008) focused on middle schools with AVID and factored in a group of non-AVID control students as well.

Watt et al. (2004) tracked ten different high schools in Texas to address how the practices of AVID worked as a comprehensive school reform model. The schools were measured by attendance rates, AP enrollment patterns, graduation plans, and school accountability ratings. However it is important to note that the AVID schools in this study paid for the program with grant money, so the financial stress of the program not working wasn't a factor for this study.

Watt et al. found that within AVID schools students who were in the program out performed those who weren't (p.50). The study also found that the students who were introduced to AVID's practices had higher attendance levels and positive attitudes towards school (p.51). These results should be viewed with caution because in my experience students with poor attendance rates were either not allowed or kicked out of the program if they missed school on a regular basis. However this study does show that AVID's practices have the potential to help students feel comfortable at school and provides them the support to succeed in a rigorous classroom setting.

Two years later Watt et al. (2006) updated her previous study and added a few more factors which included control schools. Overall, the study found that the school accountability rates of the ten AVID schools were much higher than other schools that used another program or had no improvement program at all (p 68). Specifically, Watt et al. also found that schools that utilized AVID's practices had more students take and pass AP tests at a higher rate than schools without AVID (p.69). AVID students that typically wouldn't be allowed to take AP classes were

passing the tests near to the rate of their non-AVID peers. Although the passing of AP tests doesn't concern the general classroom, these results show how AVID's practices can prepare students for success on tasks that may be perceived to be above their academic level.

Black et al. (2008) reviewed how the practices within the AVID program affected the academic performance and attitudes towards school of middle school students. Seventy-three students spread throughout three different urban schools were tracked to see if the combination of AVID's practices boosted their academic performance (measured by school attendance and meeting grade level standards) and their drive to succeed in school (measured through attitudes expressed in surveys and the number of students who signed up for eighth grade algebra). The results of Black et al. were inconclusive (p. 118). No clear patterns were found between students' successes and the practices of AVID. Students did improve in their Language Arts skills and 90% of the students signed up for algebra, but the study was unsure if outside factors contributed to these results (p. 119). Also, Black et al. found that there were more obvious connections between AVID's practices and success seen in the older students who had been familiar with the practices for two years (p.121). Based on those findings Black et al. called for further studies on AVID that span at least three years to get a better idea if success is occurring thanks to AVID or other sources (p.122).

One important thing to note about the Watt et al. (2006), Watt et al. (2004), and Black et al. (2008) studies is that they only tracked students who completed the program. The data of students who left the program were not included in the results of the study. This factor makes the data look more favorable because it didn't include students

who struggled with the program. Therefore the results from these studies show that AVID's practices are beneficial to most students, but there are still unidentified groups of students that struggle with the practices for reasons that are yet to be identified.

Literature Review

The following conclusions can be drawn from the studies regarding the practices within AVID. Grid style note taking strategies like Cornell notes have the opportunity to increase the retention of concepts at a higher rate than traditional note taking strategies (Kiewra, et al., 1988; Makany et al., 2009). Students are more likely to understand a concept if they have the opportunity to work with a tutor and discuss the topic through deep reasoning questions in a class dialogue (Gholson et al., 2009; VanLehn et al., 2007). Rigorous coursework creates opportunity to boost academic performance for most students and raises the confidence level of some students (Shiu et al, 2009; Raudenbush et al., 1993). The combination of AVID's practices generally results in a rise of student achievement in the classroom (Black et al., 2008; Watt et al., 2006). However, it was also found that the combination of AVID's practices don't work for all students and there are still students that get left behind in a system that sets out to prevent such an occurrence (Black, et al.). Now that the impact of AVID's practices in the general classroom have been reviewed it is crucial to review what these results mean for teachers and what avenues of this issue need to be further explored.

Discussion

Based on the information discussed in this Literature review, AVID's practices are effective tools to boost students' academic performance in the general classroom.

Although these studies took place in various settings with different age groups it is hard to dispute that the AVID's practices have a positive effect on the performance of most students. AVID's practices in the general classroom should be used as an opportunity for growth, but shouldn't be seen as the savior for all students and the answer to all the difficulties that lie within the U.S. public school system today as Watt et al. (2004) implies (p.258). AVID's practices can, however, be envisioned as a great supporting tool in any general education classroom AVID's practices will help students make meaningful connections to the concepts they are learning and they will gain social skills through the class dialogue that may not be gained in a traditional "lecture then activity" type of classroom (Black et al. 2008, p. 118; VanLehn Et al. 2007 p. 57). Teachers could use AVID's practices to challenge their students to reach goals that they may feel are unobtainable and help their students recognize that college level thinking skills are possible at the high school level if the proper support practices are put in place.

Some teachers might ask if AVID's practices can be used just for difficult lessons or whether these practices should be implemented year round? Although a teacher may see short term success by using the practices for difficult lessons, the research above has shown that that the long term success of students is more likely if the practices are consistently used year round as opposed to select applications (Kiewra et al., 1988, p. 596; VanLehn et al., 2007, p. 58). In my experience working with Secondary level students that the more they got to interact with a practice the better they understood it. If the practices are used inconsistently students have a harder time connecting to the practices each time they are introduced and that there is more of a

chance of resistance if the practices are used off and on.

Similarly, teachers may be curious if AVID's practices can only be used if the program is implemented school wide. Based on the research, school-wide implementation of AVID's practices would be nice for consistencies sake, but is not necessary, especially when the cost of the AVID program is factored in (Black et al., 2008, p. 121). Although it would be an ideal situation if an entire school used AVID's practices and all students were familiar with how to interact in classrooms that asked them to push themselves every day, a teacher could successfully implement the practices in their individual classroom as long as they are consistent in their implementation of the practices. Also teachers must remember that AVID's practices are a support system and not a lesson plan. The practices help students better understand concepts, but they shouldn't be used to present new concepts. AVID's practices should act as the setting for where the learning takes place, but it is still up to the teacher and students to find relevant activities that introduce the concepts before they are further explored with the practices of AVID. Therefore, if those two steps are followed, a teacher could successfully incorporate the practices in their classroom without the support of the full AVID program.

A dream scenario to utilize AVID's practices would be a school that had a team based structure in which each child had the same four or five core teachers and there are two to four teams for each grade level. When they register for classes students would have the opportunity to decide if they want to learn in an environment with AVID's practices or not. However, this scenario is problematic because the students who need the extra push may not sign up for a rigorous program.

The exploration of the effectiveness of AVID's practices has been engaging and has promoted many questions that require further research. First, what happens to kids that drop out or are kicked out of the AVID program? The presence of students who struggled with AVID's practices were absent in the studies included in this literature review. What happens to these students after AVID, do they go to college and is there a pattern of the type of students that struggle with AVID's practices. Secondly, specific research should be conducted on what the effects of AVID's practices are on students with learning disabilities. How would these students interact in a classroom with AVID's practices and would the structure help them succeed as well? Finally, what happens after high school for students who utilized AVID's practices to graduate? It would be interesting to see if these students graduate college, what kind of jobs they enter, and what impact they eventually bring to their communities. These are just some of the questions that this exploration of AVID's practices has sparked and new research will be factored in to this literature review as it becomes available.

In summary, this paper found that AVID's practices do have a positive effect on students' performances in the general classroom. These practices are useful as a support structure when presenting content that is rigorous, but accessible for all students in the classroom (Watt et al. 2006, p.71). Teachers need to be aware that AVID's practices work for most students, but the practices are difficult for some students and those difficulties need to be addressed rather than ignored (Black et al., 2008, p.122). Implementation of AVID's practices is recommended as a tool to structure engaging curriculum in the general classroom. A teacher can successfully implement the practices in his or her

classroom without the support of the full AVID program, but the full program is worth considering if outside grants are available.

References

- Advancement Via Individual Determination. (2011). *What is AVID?* Retrieved from http://www.avid.org/dl/about/brochure_whatisavid.pdf
- American Youth Policy Forum. (2002). *Advancement Via Individual Determination*. Retrieved From <http://www.aypf.org/publications/rmaa/pdfs/AVID.pdf>
- Black, A., Little, C., McCoath, B., Purcell, J., & Siegle, D. (2008). Advancement Via individual Determination: Method selection in conclusions about program effectiveness. *Journal of Educational Research, 102*(2), 111-124.
- Gholson, B., Witherspoon, A., Morgan, B., Brittingham, J., Coles, R., Graesser, A., Sullins, J., & Craig, S. (2009). Exploring the deep-level reasoning questions effect during vicarious learning among eighth to eleventh graders in the domains of computer literacy and Newtonian physics. *Instructional Science, 37*, 487-493.
- Kiewra, K., DuBois, N., Christian, D., & McShane, A. (1988). Providing study notes: Comparison of three types of notes for review *Journal of Educational Psychology, 80*(4), 595-597.
- Lozano, A., Watt, K., & Huerta, J. (2009). A comparison study of 12th grade Hispanic students' college anticipations, aspirations, and college preparatory measures. *American Secondary Education, 38*(1), 92-110.
- Makany, T., Kemp, J., and Dror, I. (2009) Optimising the use of note-taking as an external cognitive aid for increasing learning. *British Journal of Educational Technology 40*(4), 619-635.
- Nelson, J. (2007). Avidly seeking successes. *Education Leadership, 64*(7), 72-74.
- Newfield, J., & McElyea, V. (1983). Achievement and attitudinal differences among students in regular, remedial, and advanced classes. *Journal of Experimental Education, 52*(1), 47-56.
- Raudenbush, S., Rowan, B., & Cheong, Y. (1993). Higher order instructional goals in Secondary schools: Class, teacher, and school influences. *American Educational Research Journal, 30*(3), 523-553.
- Shiu, A., Kettler, T., & Johnsen, S. (2009). Social effects of Hispanic students enrolled in an AP class in middle school. *Journal of Advanced Academics, 21*(1), 58-82.
- U.S. Department of Education, Institute of Educational Sciences. (2010). *What works clearing house: Advancement Via Individual Determination*. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/wc_avid_091410.pdf
- VanLehn, K., Graesser, A., Jackson, T., Jordan, P., Olney, A., & Rose, C. (2007). When are tutorial dialogues more effective than reading? *Cognitive Science, 31*, 3-62.
- Watt, K., Huerta, J., & Lozano, A. (2007). A comparison Study of AVID and Gear Up 10th grade students in two high schools in the Rio Grand Valley of Texas. *Journal of Education for Students Placed at Risk, 12*(2), 185-212.
- Watt, K., Powell, C., Mendiola, I., & Cossio, G. (2006). School wide impact and AVID: How have selected Texas schools addressed the new accountability measures. *Journal of*

Education for Students Placed at Risk,
11(1), 57-73.

Watt, K., Powell, C., & Mendiola, I. (2004).
Implications of one comprehensive
school reform model for secondary

school students underrepresented in
higher education over a three year
period. *Journal of Education for
Students Placed at Risk*, 9(3), 241-259.

Sustaining the Highly Mobile: Military Parents with Elementary Students

The following review of empirical studies investigates the stressors and academic implications of deployment transitions on elementary children during school and the available resources. The purpose for this review is to examine what teachers can do to academically prepare students during transitions, increase academic continuity between transitions, and consider the factors for sustaining elementary students who have a military home-life. Schools are an important resource for military families during transitions. There are many qualities of schools as a resource and the teacher's role will be one of them as a focus for this review. From the literature three components were identified: reducing stress for students by improving transitions between schools, define transition policy for military students, and investigate community resources for military families to be aware of the signs of stress in students. Some key practices that teachers can establish are to seek to know the students with military parents and deployment concerns. There are parallels between a military lifestyle and students who experience high-levels of stress due to other factors; however, while the effects are similar, the preventative actions are different. Additional research as well revealed the need to examine the impact of deployment on dependents with male deployed military versus female deployed military and their male or female children.

In a study that investigated how teachers felt about the academic failure of highly-mobile students during the primary and intermediate grades: 87% of the participating teachers believed that the transfer rates of the students contributed to their failure (Lash & Kirkpatrick, 2010, p.822). This high percentage reveals an implication about the concerns for highly mobile students and the purpose of this literature review to inform the following question: What can teachers do to academically prepare students for transitions, increase academic continuity between transitions and achieve sustainable success for elementary students who have a military home-life?

During my student teaching experience in the fall of 2010, I taught fifth grade. Of the 22 students in my class, six guardians served in the military at a nearby air force base. As I spent time with these students

learning about them and their families, I found out that all of them have experienced a parent who has been deployed into active war duties, some had just transferred to the school and others were about to be transferred, half of them were currently living with a single parent due to the military. As their teacher, I worried about their educational achievement, but I also considered what it would be like to live as they do, moving constantly. There are concerns of stress related to moving and the effects of a military lifestyle distracting students from accomplishing their homework or the time spent in school would be stressing about home-life. These concerns as well as the following are reasons for examining how to support these students. Since the time of my student teaching, the class of students I knew does not exist because of the amount of transfers.

The military community in the Puget Sound area has rapidly increased in the past eight years. The population has increased since 2003 to the present, the total military and civilian personnel stationed at Fort Lewis grew from 32,700 to 50,587, additionally, the number of family members grew from 36,399 to 53,444, a 77 percent increase from 2003 to 2010 (Grady, E.2010). The Fort Lewis/McChord Military base in Washington is now the largest base west of the Mississippi river (<http://www.cloverpark.k12.wa.us/Admin/MilitaryFamilies>). The Clover Park school district has the only major school website with military resources for students, families, and schools in the northwest. The growth of military families in the northwest region and the research literature on military student academics provides further evidence for research on the necessity to educationally sustain these students.

The consequences of transitional stress on relationships and academics

In order to inform how to sustain a student in a military lifestyle it is advantageous to take a look at the lifestyle. Transitions or deployments are characteristic of the military and are consequential to the whole family. Deployment and transfers are substantially a common requirement occurring every 2-3 years. Military men/women have occupationally, service oriented responsibilities that demand their time and physicality. They lead a regimented lifestyle with the knowledge that combat is their focus with immediate deployments and a small amount of time to transfer their families. This is considered a “reactive move” because the service member has no choice in the relocation of their family (Xu, 2009, p.3). As opposed to a strategic move, one of choice, the family is forced to make a domestic change which can also cause emotional distress for the whole

family. The whole family can experience higher than average stress symptoms from the demands of the deployment and alternative parenting options during deployments. In a research study conducted by Bradshaw, Sudhinaraset, Mmari, and Blum (2008) on stress and coping of military families, the results revealed that military service members experienced transfers 2-3 times more than civilians and are at a higher risk of experiencing problems such as academic failure, emotional issues, and anti-social behaviors. This coincides with other research on academic achievement during the elementary years for military students having life-long, individual and societal implications disrupting the student’s social continuity and academic progress (p. 101-102). As well the effects of military transfers on the relationships between students, guardians, and teachers to provide evidence for why and how teachers can sustain students and families.

Xu, Hannaway, and D’Souza (2009) contributed research on the longitudinal outcomes of student transience in North Carolina from 1997-2005. Their inquiry examined the effects of school mobility on student performance and found that the reactive moves, ones where the student had less time to prepare for the home transition, hurt the student’s academic performance and caused stress to the point where the students were compensating by acting out with negative behaviors (p.24-25). They defined acting out as behaving socially negative in the student’s relationships with peers, teachers, and family members. This may suggest that preparing a student for transitions may reduce negative behaviors during the transition and possibly increase their ability to recover from the move with less academic and social side-effects. This was strengthened by the results of the participating students’ math scores reflecting lower than their peers who did not

experience multiple transitions during the study (p. 27.)

In 1997, the U.S. Army performed an informal research study to know more about the educational impact on students with military families (Berg, K. 2008) For two years the Military Child Education Coalition, a group created by the army specifically for education research, studied the impact of transitions experienced by students with military families and provided recommendations to improve the impact of transitions and deployments, known as the U.S. Army Secondary Education Transition Study (SETS) (pg.43). The inquiry they attended to were: to find meaningful ways to lessen the transition challenges, discover processes, policies, and solutions which would make the mobile lifestyle better for the family and student; and to improve the capacities of schools to respond confidentially to any issues of transition for the families (p.43). The data was collected from 423 military students, 239 educators, and 217 military parents on nine army bases and schools. The results produced the groundwork of educational recommendations and policy changes for transfer students. A memorandum referred to as the Memorandum of Agreement (MOA), adopted by the nine schools in the study and by many others in the area was created for the purpose," to facilitate the mutual development of reciprocal practices, conduits for information between systems about requirements, and accelerate the exchange of emerging opportunities" (p.44) In other words, the new policy recommended transferring student records on time, ease student transitions during the first 2 weeks of enrollment, foster access of the extracurricular programs, familiarize students and families of school procedures, protocol, school calendars, schedules, and to develop professional systems to help

teachers and staff better serve military dependent students (p.44).

The coalition research was conducted in the mid-1990s when the Persian Gulf War was recognized as a high-status situation and many troops were being deployed into Iraq and the middle-east (Berg, K. 2008) The research may be applicable to many families and guardians who would relocate their families, transition into another community, and entirely move to a new location because of these conditions. The significant result of the research provided the Department of Education an awareness of military personnel needs during transitions and specifically those with school-age children. Having the research performed in the latter part of the Gulf War, after many had served in the war or had already gone through home and school transitions, was important to evaluate because military families were concurrently experiencing all of the stress and effects of a military lifestyle. The data provided insight into how these families had managed the moves either with or without resources.

The research provided positive results but ignored some vital perspectives. The study implied that home transitions for military families could be improved with the access of student records, communication of school extracurricular activities, and community resources. Improving the transitions for families was extremely important as well as preparing an academic report for the family and the impending school within weeks of the transition. This may have reduced transfer stresses and promoted a positive school experience. The simple act of developing a protocol plan for transfer students diminished many stressors for the families and improved their school experience. However, the research did not attend to the teacher's perspective on transfer protocol or the school policies that might already had been in place. The

research concentrated on the family perspective without comparing what is already in place among schools and did not address students and families “off-base” public school districts at all. As well, the research did not determine whether or not communications were already established between parents and teachers, or how often teachers were sending information with families as they moved. The miscommunications during transitions may or may not have been an error due to the relationship between the school, teacher, military family or available resources.

The study examined the methods of transitions and communication from a deficit position, limiting the scope of the research questions and reducing the full perspective of military lifestyles (Berg, K. 2008, p.43). It did not provide those participants who do use community resources and did not inquire about those military families who may have had a positive experience within school transitions. The results would have been more beneficial if the research had looked to the consequences of transitions as the same or different for military students on and off base.

Knowing how military deployments impact the family and ultimately affect children may be beneficial. Barker and Berry (2009) examined this question and others in their research on the developmental issues on young children during deployments. They wanted to know if behavior problems would increase how family relationship dynamics would change, what factors are connected to these changes besides deployment, and how the “reunion” after deployment affected all of the variables (p.1033-1034).

They used surveys of 57 families of active duty soldiers in a mid-western post to voluntarily share their experiences for the data. All of the families had young children

less than 10 years of age. The surveys showed that on average the child’s parent(s) were gone half their lifetime due to deployments and this caused social behavior problems which increased during deployment (p. 1037). Even after parents returned from deployment there was an adjustment period. It is reasonable that from the results to conclude that there was an increase in behavior issues for the single-parents due to the deployment for a few reasons: families having only one parent to rely on for all responsibilities, deployment stressors, and economic/financial stressors (p.1037-1038).

Barker and Berry (2009) provided further information for families to consider the conditions of deployment and transitions from a “young” family perspective to be aware of the factors which deployment can produce. This information could be insightful for educators because it reveals that behavior issues in the classroom can stem from separation anxiety or relationship disorders due to deployment. This information can be useful for knowing how to prepare for incoming military families to a new school and easing a transition.

Many of the emotional and physical layers of deployment on families and students can occur within the school year and may be necessary for teachers and administrators to be intentional in their actions when supporting families and students who are in the military. The Military Family Research Institute of Purdue University reported on the adjustments made by youth within a military home with at least one parent in deployment (Huebner and Mancini, 2005). They collected data from interview sessions of 107 adolescents from ages 12-18 years, 61% were White, 17% African-American, 7% Hispanic/Latino, 3% Pacific Islander, 1% Native American, and 10% biracial (p.12). All of the families were in active duty at the time of the interviews

and the information was voluntary during camps sponsored by the National Military Family Association.

The students were asked about how they felt when their parent left on deployment, how they felt during the deployment, the stresses of being a youth with a deployed parent, methods of stress reduction, did they notice any changes in themselves after the deployment, do they recognize changes in their parent that lives at home during the deployment, where do you turn for reducing your stress, what is like when your parent returns from deployment, what would make life easier during the deployment (Huebner & Mancini, 2005, p.14-44). All of these questions gave the student's an opportunity to discuss their feelings about deployment transitions which allowed time for the student to discuss their feelings of the change in their home and provided a significant step to reducing the stress they may have felt. From this study and the survey questions, a valuable method was presented for helping students talk about their families being in the military. Students were able to talk about their life and spent time with other military students which may have improved their feelings about school.

Catherine Bradshaw, Sudhinaraset, Mmari, and Blum (2010) conducted a study on eight military bases from the Air-Force, Army, Marines, Navy, the Reserves, and the National Guard through the Department of Defense in a qualitative study on the stressors and coping methods of military students during secondary school transitions. The study had three objectives: (i) to describe the transition-related stressors experienced by the students; (ii) to describe the efforts of teachers and parents used to help the students cope with their stress; (iii) and to identify strategies that schools can use to ease the transition process for these students (p. 86-87). The research project

had 11 focus groups of military families and school staff on military bases purposefully seeking to represent multiple perspectives with a range of strategies and opinions on stress levels. All of the participating families and students had at least one parent in one of the before mentioned branches of the military, and a student who went to the public school on a military base (p. 87). The groups were chosen by the Department of Defense to participate in the research and particular demographics of the groups were considered. The family participants were from all ranks in the military with a diversity of gender and cultures; the school staff participants were from "on-base" public schools. The researchers used discussion-based interviews to collect information on the nature of the students stress during transitions and any efforts or strategies the school faculty used to ease stress (p.87).

From exploring the interviews, it appeared that communication was the best solution as well as a downfall. The participants showed a consistent pattern of stress related to multiple tensions: home environment, peer relationships, adapting to new school environment, academic challenges, student/teacher relationships, and becoming involved with extracurricular activities during times of transition (Bradshaw, et al., p.90). Most of the students and families used communication as their core strategy to cope with the stress of school transitions and home moves, such as talking directly to their teacher about the move and contacting the new teacher about the transitions to foster better communication (p.91). Although from the teachers perspective they felt that the personal information about a student's military background was not always explicit and if they did not know this about the student than they were less apt to help them with the transition process because they were unaware; while some of the parents

interviewed shared that they had already initiated conversation with teachers to inform them of an academic or emotional need for the student, less was done in their support (p.97). This could be an inference for improving communication between caregivers and teachers.

Even though this study examined multiple stressors with correlating coping strategies, it was determined that communication is overall one of the best stress strategies for transitions that a teacher can promote between students and caregivers (Bradshaw, et al., 2010, p.102). Even if the stressors remained and were prevalent with each additional move, the best possible outcomes came when parents and students used strategies of communicating a transition or an academic plan with their teacher to increase a normalcy of life during the move (p. 101-102). Likewise, teachers who participated and were aware of a military student's specific situation were more likely to positively influence the student's academic progression and reduce the stress of homework or during academic testing (Bradshaw, et al. 2010).

The inadequacy of this study remains to be the limited scope of the participants, specifically "on-base". The participants represent those who have more access to resources. "Off-base" housing, military personnel and their student(s) may not receive the same access to resources at an off-base, public school where teachers and staff are not aware of military-community resources for transitions. Some resources that would be helpful to a teacher are a school liaison for families, training on military deployments and school children, transition document protocol, tutors, and academic testing specialists.

In a similar research, Lash and Kirkpatrick (1994) looked into over 200 schools in the United States to determine the

types of transitions school children experience. Four determined types of transitions and eight schools later, they had the specific criteria of ethnic distribution, population size, and mobility characteristics. Again researchers chose schools "on-base" to determine specific data about resource allocations, the instructional environment of the school, and classroom instruction affected by student transitions. Lash & Kirkpatrick gathered interviews and survey questionnaires from teachers and administrators about military student transfer effects on the classroom including solutions and strategies (p. 818).

The results showed that the average stay for the military families "on-base" was 3 years with 53% of the students starting the school year on time and then withdrawing before the end of the year (Lash & Kirkpatrick, 1994, p.819). The amount of time in transition and out of school influenced the academic gap or "gaps in knowledge" as disclosed by 55% of the teachers on the current students (p.821). The teachers' openness to reveal the influence of the military transitions on the academic success of the students increased the rationale for why students fall behind academically and struggle to achieve (p.822). This information was similar to other research found between families, school, and teachers, however, Lash & Kirkpatrick say that differentiation was a solution for schools to discontinue scripted curriculum which fits the student to the "yearly plan" rather than identifying the student's academic needs. According to the interviewed opinions from teachers, they want to be trained in diagnosing learning needs, become knowledgeable of alternative instructional strategies, and have access to a variety of instructional resources to influence differentiated lesson plans (p. 839-840).

Phelps, Dunham, and Lyons (2010) also investigated the impact of military deployment on the academic achievement of elementary students. Despite the multiple military actions of the United States by 1994, only three studies had specifically investigated the academic achievement of deployed personnel with school-age children (p.38). In response to the necessity of research in this genre, they chose to examine student test score results of a nationalized test for two years and revealed what many military families are familiar to: the academic characteristics of students with a military lifestyle or deployed parents were significantly lower than those who did not have deployed parents.

Two schools were studied in the southern United States with 137 participants on a military-base public school; 59.9% were male and 40.1% were female (Phelps, et al., 2010, p.40). Students were tested by the TerraNova system a national standardized test; used by many school districts as part of the No Child Left Behind (NCLB) act. The standards for scoring students were in the following subtests: reading, vocabulary, language mechanics, mathematics, science, social studies, and spelling.

The results presented information about the academic performance of 4th and 5th grade students with deployed parents in comparison to parents who were not deployed in the 4th and 5th grade in 2006 and 2007. In general, the deployed-parent students' scores on the TerraNova exam did fall, however, the test scores did not fall outside of the national average percentiles when compared with other public schools that took the same test. The evidence was not conclusive of the effects of deployment on families, however, a slightly deficit effect on the female test scores in comparison to the male scores revealed further research questions for the study. The girls who had a

deployed parent had scores significantly lower than the girls without a non-deployed parent; their test scores were 30-50 points lower. The boys scores were only 5-10 points lower of those with deployed parents. The statistical evidence did not provide insight that a student with the military lifestyle can have a negative academic affect, since their scores were not below the national average scores, however, this information does present an avenue for further research on the effects of deployment on female students. There is sufficient evidence to show a deficit of some variable upon the female students to present information regarding a relationship between parents of female student academics and deployment on achievement (p.41-48).

Since test scores make visual the academic achievement of a student, David Lyle's (2006) research from Texas looked at the causal effects of parental absences and relocations on children's academic test scores. He reviewed the past records of army military personnel deployments and the test scores within a Texas school district to examine how the percentages of parental absences related to the student test score patterns in a pooled data from 1997 and 1998.

Reviewing the human resource army units of soldiers that were deployed and relocated based on assignments given, Lyle found that the soldiers were relocated every 2-4 years based on the "needs of the army" (p.321). Soldiers in the army are assigned to a division with sections within that unit: brigades to battalions, and then to a company. As a soldier is assigned to a specific company this characterizes their rank and economic status. What is important to know about a soldiers rank is that this directly correlates with their income and statistics have shown that families with lower incomes tend to relocate more and to

have less access to educational opportunities (p.344-345). Soldiers qualify within this category because they have lower incomes and move according to the needs of the government. If they have children, the effect of the deployment and transfers on the child, as indicated by Lyle's information, makes the student a high probability for low test scores (p.334-335). The research showed that in comparison of an officer's child scores to a soldier child's score, the officer's child scored 5-6 points higher; officers move significantly less often and receive a higher income (p.338).

Deployment does not respect rank. The months of deployment statistically affect both the soldier's child and the officer's child in similar patterns on test scores. Scores showed a deficit as much as 10 points on average for both officer's children and soldier's children when parents were absent for longer than three months, even though the scores were different in range (Lyle, 2006, p.338). A 5-10 point deficit student test score was also contributed to the number of moves the family experienced either as an officer or soldier. But the soldier's child on average had lower test scores in all the tested categories; the officer's child had reduced scores as well during deployment but not as much as the soldier's child (p.338).

An interesting statistic from Lyle's research that parallels the research of Phelps, Dunham, and Lyon is the effect of the absence of mothers on student test scores. A female soldier's child test scores were even lower than if a child's father was the absent parent insinuating that more research and resources might need to be looked at to support female soldiers and their families.

Lyle's research provides more information about the statistical nature of test scores and a child's ability to perform under stressful conditions but does not share

the long-term effects of academic achievement. The literature reveals the statistical report of some student conditions and represents a general outcome of deployment on families. However, this information still infers that parents who are absent may have an academic and emotional effect on children, possibly implicating that students need to have a non-transitional home-life in order to do well on national tests.

The limitations of the research are the validity of this implication to reveal the correlation. The test scores of the participants, in comparison to the national average, are within range of the average scores. This does not imply a "need" or a "deficit" due to absent parents only the transitional effects on students. The scope of the research does not question whether the stress of deployment on the overall academic achievement of the participants is due to absent parents, teachers, absent coping strategies, test preparation or academic needs. The research was informational but not definitive on the perspective of the whole student's academic progress (Lyle, 2006).

Malaspina and Rimm-Kaufman (2008) investigated research on the "whole" student in a longitudinal study following 265 students: 112 males and 153 females (60% white and 40% non-white) from kindergarten to seventh grade to look at the social and academic predictors of school performance during transitions dependent on sociodemographic factors and transition factors (p.5). The data was gathered by demographic data reports and a Stanford-Binet scale. The variables addressed were days absent, discipline infractions, grades in math and language, and standardized test scores in the course of the eight years and with at least one transition occurring if not more for the students during the 4-5th grades and then in the 6-7th grades. Of most interest

was the angle of the research to explore the student's parent demographics, specifically those students with single-parent homes living either with their mother or father and the education level of that parent. This detail influenced the results of the data to reveal important paralleled relationships to the military family research (p.11-12).

The data exposed that within the categories of variables, gender relationships between parents and child played an enormous part in how well students do in school (Malaspina & Rimm-Kaufman, 2008, p.7-9). Emotionally and developmentally, the parent can affect a student's academic progress (p.10-11). Discipline problems occurred more often for boys if their mother's had low education even more than girls with mothers with low education. Non-white students and those with mothers who had low education had low language arts and math score (p.7).

The parent's education level was a determinant to the student's academic performance. This compared to the findings of Phelps, Dunham, and Lyon in the differences between academic performances of officers children to soldiers children who had lower test scores plausibly from the amount of transitions and economic status. From Malaspina and Rimm-Kaufman, their findings reported that students had more discipline issues due to transitions. And students with parents who have less education tend to have students with less academic success (p.8-11). As well, students who live in impoverished conditions tend to move more and experience more transition which lends to more social and academic issues during school. These students and families may need more stability, resources, and communication support from schools. They might have less access to informational sources and have more stresses than those who are educated and have less economic resources (p.13).

Malaspina & Rimm-Kaufman (2008) provided their thoughts on the limitations of the research and presented the correlations between the behavior issues and the scores of elementary and secondary grades due to the different discipline systems. Comparing the infractions and the grading criteria, they found no evidence that school transitions contributed to school performance issues. These limitations could suggest that the nature and qualities of a transition have more influence on students rather than their lifestyle also leading to consider the characteristics of stress, the perceptions of stress, and the coping methods of students.

Many groups and organizations are available for students to contact in order to know the resources available to them and their families. Huebner, Mancini, Bowen, and Orthner (2009) comprised a family study on the communities involved with sustaining military families (p.222-223). Most of the groups were found through the Department of Defense website. The research focused on the impacts of a military lifestyle on children and marriage. They found that deployment had the biggest overall impact to the social conditions of the family but also the physical health of family members; high blood pressure, stress disorders, post-traumatic stress disorder, and depression (p.218).

There are community groups and programs that support military families with the stresses of military circumstances. One of the groups that Huebner, et al. suggests is the 4-H Army Youth Development Project. This group is a collaboration of the 4-H and military youth services to provide a service group for youth to participate in and provide service in their community (Huebner, et al. 2009, p.222). The group is dedicated to supporting students with a military home with an organized and serviceable place for students to meet other students with the same lifestyle while performing acts of

service in their community. In this way they feel connected to another youth experiencing the same things and putting their time and energy into a positive action (p.222).

The limitation to the 4-H group is that it is not provided to all military students all over the United States. It is through the army branch and only available in certain areas. The army launched another partnership in 2005 called Operation: military kids (Huebner, et al. 2009, p.223). This was a support group for youth with military families wherever they live. It focused on community by providing services to the families through the National Guard recreationally, socially, and educational programs. They network families together who experience the same conditions. The group is organized by the local National Guard and the information for activities networked by other organizations share their resources with the group or donates items towards the activities (p.221-223).

Many community military resources are similar to the previous examples and support students and families with a military lifestyle. Most groups want to support the families through networking and connecting people together for the purpose of building a positive situation during deployment (Huebner, et al. 2009, p.216-217). The intentions are to focus on service and giving back to the community as a way to mirror the conditions of the service member, thus a continuity of purpose within the families. This continuity hopefully will reduce the stress and anxiety experienced during deployments and transitions.

Implications for teachers and education

The characteristics of military students and the transitions they experience are valuable information for teachers. In most of the United States and for most children,

civilian or not, they spend their time in two places: home and school. It is probable that the adults who spend their time with these children will be the most influential people in a child's life from birth to adolescents. And even though, the military family is characteristically different than the "normal" family unit, the consequences of the relationships are similar. The characteristics of the family unit on a child's development are information for a teacher to consider for instruction as much as for assessment. The research can provide supplemental insight on the effects of military transitions and deployments on students influencing the decisions caregivers and teachers make for the academic success of students.

The solutions attributed from the literature are: (i) recognizing that active dialogue between the student, the family and the school tends to reduce transition stress (Berg, K. 2008, p.44-46); (ii) teachers should know about the resources for military families and their situation in order to be a positive influence (Huebner, et al., 2009, p.225-226); (iii) and a clearly defined transition plan for students may increase academic achievement (Malaspina & Rimm-Kaufman, 2008, p.11-12). The access to information and resources for students and teachers is a pivotal juncture in the review of the literature because it mostly considers solutions specifically for teachers of "on-base" families. While this is effective and valuable research, there are many military families which live "off-base" and attend public schools with minimal district resources as cited in the first section of this literature review. In consequence of resources and indirect access to resources, students may have less academic and social support (Huebner et al., 2009, p.219-220).

Ironically, a common characteristic found in many military students is their ability to adapt to new environments; they have more experience with meeting new

teachers and class mates and are more likely to engage in new social situations (Bradshaw, et al. 2010, p.95). All of the adult participants in the focus groups from the Bradshaw research, perceived military students to be more mature and responsible than civilian students (p.95) This maturity was perceived to lessen stress and anxiety (p.95). Stress may come in many paths to a student but the manifestation of stress on academic achievement are consistently similar, thus a child with a military transfer can have the same stress as a child whose parent is deployed, their experiences with stress may be similar and the strategies to academically support them can also be similarly useful.

Communication skills were one of the solutions to reducing stress during deployment (Bradshaw, et al., 2010, p.91). This was not exclusive to eliminating stress or ensuring academic success. Other factors may contribute to the academic achievement or failure of a student, such as, differences in school curricula, gaps of time in school attendance during transitions, adaptation time during transitions to the school and environment, and emotional side effects of anxiety or depression. Preventative communication from teachers may be helpful with deployment transitions. Talking with students and families about the details of transfers and contacting the new school to transfer records or academic information can be a supportive measure. Teachers can be influential to students' testing/assessment success as a support but not as a replacement for the student's caregiver. It is necessary that both guardians and teachers do their part for the student's academic and emotional welfare. Research suggests that communication between parents and teachers is a skill that should be practiced and modeled for students to have the benefits of stress reduction (p.92-93).

It would be worth investigating the kinds of factors that make communication between families and teachers complex. For example, an advantage that teachers and administrators have of using military resources and research could be for examining the effects of the academic gap. Reflecting on the academic test scores of military students and when their scores become low, patterns show that when deployments occur students tend to perform poorly in school (Phelps, et al.2010, p.41-48). Knowing this evidence would be beneficial to teachers because than they could make visual the patterns of military students' academic needs during transition or deployment.

There are a few implications for military families, teachers, and administrators who support students along in their education gained in this review. First, the elementary years are vital to the long-term academic success of the student. These years are the developmental time when students create their social and academic relationships. But a malleable time as well; children are adaptable and have the ability to work well with change, provided they are given tools and resources to accomplish their tasks. Second, teachers can provide many opportunities of time with parents and students such as conferences, classroom time, and school activities. The review of this literature has provided an additional perspective of how much there is to learn about sustaining military students and how much further research is also needed to understand an educator's role in this situation. A few other questions revealed themselves as consequence of investigating these issues, two specifically to further consider are: What can teachers do for students to help reduce physiological symptoms of stress and depression? How does the military transfers and deployments effect girls' academic scores differently than

boys? Since it does, why? What does this say about girls and home, relationships, role of school, role of parents, etc.?

References

- Barker, L.H., Berry, K.D. (2009). Developmental issues impacting military families with young children during single and multiple deployments. *Military Medicine*. 174 (10) 1-9.
- Berg, K. F. (2008). Easing transitions of military dependents into Hawaii public schools: an invitational education link. *Journal of Invitational theory and Practice*, 14. 41-56.
- Bradshaw, C., Sudhinaraset, M., Mmari, K., Blum, R. (2010). School transitions among military adolescents: A qualitative study of stress and coping. *School Psychology Review* 39(1), 84-105.
- Clover Park School District. (2011). <http://www.cloverpark.k12.wa.us/Adm in/MilitaryFamilies> Retrieved February, 2011.
- Huebner, A., Mancini J. (2005). Adjustments among adolescents in military families when a parent is deployed. *Military Family Research Institute*. Purdue University. 3-50.
- Huebner, A. , Mancini, J. , Bowen, G. , Orthner, D. (2009) Shadowed by War: Building Community Capacity to Support Military Families. *The National Council on Family Relations*, 58, 216-228.
- Lash, A. A., Kirkpatrick, S. L. (1994). Interrupted lessons: Teachers views of transfer student education. *American Educational Research Journal* . 31 (4), 813-843.
- Lyle, D.S. (2006). Using military deployments and job assignments to estimate the effect of parental absences and household relocations on children's academic achievement. *Journal of Labor Economics*. 26 (2) 1-33.
- Malaspina, D. , Rimm-Kaufman (2008). Early predictors of school performance declines at school transition points. *Research in Middle Level Education Online, National Middle School Association*, 31(9), 1-15.
- Phelps, T., Dunham, M., Lyons, R., (2010). Military deployment and elementary student achievement. *Educational Research Quarterly*. 37 (33) 1-17.
- Xu Z., Hannaway, J., D'Souza, S. (2009). Student transience in North Carolina, the effect of school mobility on student outcomes using longitudinal data. *National Center for Analysis of Longitudinal data in Education Research*, working paper 22. 1-48.

Linda Mewhirter

Teacher Authority, Questioning Practices and Student Beliefs: Increasing Involvement in Group Discussions

This paper explores the definition of high quality discussion and then examines the dynamics that effect student engagement in discussion in a public school setting. This paper examines a body of research that explores the effects of teacher authority, questioning practices, and student belief on student engagement in discussion. All studies were in public school settings (5-12th grade). Some studies examined multiple teachers and compared teacher methods and results, while some examined one classroom over time to see how a culture of discussion had developed or not developed. In all studies, it was found that reducing teacher authority, often by use of questioning techniques, increased student engagement. However, it was also found that student belief plays a powerful role and that questioning techniques alone are not enough. In the conclusion, I draw some implications for setting up a practice of discussion based on a synthesis of the research. I also draw attention to some important additional questions to be considered when creating a classroom culture for discussion.

As a teacher researcher who believes that student learning is intimately connected to their active participation in class, I first wanted to know what kinds of practices I could do to involve students in discussion, and in *high quality discussion*. In a review of the research, I came upon many definitions of what a “good” discussion looked like, which have keen intersections with how people learn. One definition of good discussion was dialogue: “continuous and developmental sequence” (Mouza, 2009, p. 1167), which was similar to Sprague's (1971) phenomena of “spontaneous grounding” (p. 35), in which students tended automatically to extend and question the thinking of their peers. Sprague also calls this *reflective thinking* in which a student recognizes a problem, presents and then tests hypothesis (p.1-2). Kuhn has termed “evaluative stage”, which has similar characteristics to the reflective thinker. Kuhn suggested that we go from being an absolutist to a multivist, and then finally to the evaluative stage, in which we “embrace the uncertain and

personal qualities of knowledge construction, yet situate these qualities within a community that shares understandings and practices of inquiry, such as examining and adjudicating among conflicting claims and forms of evidence” (as cited by Damico and Rosaen, 2009, p. 1169). At the height of a good discussion, students engage in a higher form of knowledge creation than just taking in knowledge didactically, they become evaluators of the environment, of many experiences and sources, and for a larger purpose. This is a theory of what high quality discussion could look like.

Links of High Quality Discussion with How People Learn

The work of Kolb's and his learning cycle, as discussed by Zull (2002), shed light on why these ideals of good discussion have parallel elements to learning cycle, which uses all the four cortex of the brain. The learning cycle consists of: concrete experience, reflective observation, abstract hypothesis,

active testing (p. 17). A key part of the learning cycle is “active testing” in which students go across a “transformation line”. Zull explains: “Data enters learners through concrete experience where it is organized and rearranged through reflection. But it is still just data unless learners begin to work with it.” (p. 40). Zull describes a situation in which this ideal was played out successfully, where students were using both didactic information and their own experience/experimentation to problem solve about making devices better. This seems to follow the same pattern of the “evaluativist” stage (Kuhn as cited by Damico and Rosaen 2009) or “reflective dialogue” described by Sprague (1971), in which students recognize a problem and then use and test hypothesis to find solutions. Knowledge, in these instances, is not fixed or pre-ordained, but knowledge is open, is “treated as fluid and complex” (Damico and Rosaen, 2009, p. 1171), in which students may use the contemplation of multiple sources to discover knowledge. I interpret this to mean that they can have a sense of their own intellectual authority, using their own experience and reasoning to solve problems and revise their thinking. Discussion in a public school setting has the potential to fulfill the learner's need for active testing of hypothesis on relevant problems of the disciplines. Discussion also has the potential to get students actively revealing and revising their thinking, and developing their own intellectual authority.

These ideals of high quality discussion are rarely realized within the context of public school classrooms. There are a number of theories about why that is that I've found in the research. Some researchers suggest that there is a cultural mis-match between schools and discussion, in that teacher's tend to always stay in the drivers seat and students remain followers (Smith and Connolly, 2005, pg. 272.) In Nystrand et all (2001), they found that found that what most teachers thought was discussion

was a typical question-answer discussion, where the teacher was the evaluator. Alverman, O'Brien and Dillon (1990) also found that teachers typically, even if they had high ideals of what discussion could be, tended to be the authority and evaluator of thinking in any discussion, thus student dialogue or questions that are authentic dialogic bids, are hardly welcomed in that space. These two studies are discussed further in the review of the literature. The fact remains, space for student to student discussion is *not* found in many American public schools.

In my research, I found three important aspects that influenced student participation in a discussion: teacher authority, questioning strategies, and student beliefs about behavior during a discussion. All three interact to inform students as to what roles they can play and what the expectations are for thinking in the discipline. In this paper I synthesize a body of research that explores how these three factors influence the circumstances of high quality discussion. In my conclusion I identify the practices one may use to create an informed and intentional practice/culture of discussion, taking into consideration questioning techniques, teacher authority, and student beliefs.

Literature Review

The question of teacher authority in the classroom seems intimately linked with the beliefs about knowledge and how it is created. In all of the studies I found, if the teacher was perceived as the authority and source of knowledge, then, the pattern of discussion tended to be recitation, in which the teacher asks a question, and the student answers, and the teacher evaluates the answer. This situation in which the teacher is the authority, then knowledge is seen as a “preordained outcome”, in which the path towards it is narrow and limited to the right answer; on the other hand, if

knowledge is something that depends on the interpreter of the input, the student, then knowledge is “treated as fluid and complex rather than straightforward” (Damico & Rosaen 2009, p. 1170-1172). All across the board, students do not tend to engage in discussion if they perceive that the teacher is the person who is responsible for answering the question. Teachers who have successfully created conditions in which they are not the authority tend to use questioning strategies as well as an intervention approach which essentially does not solve student problems or evaluate student thinking. These questioning and intervention strategies alone may not be enough, for some studies I have found also examine the difficulties and challenges that student beliefs pose on the effectiveness of questioning strategies alone.

Why Discussion is Limited in Schools and the Importance of Student Generated Questions

Research has shown that discussion, even though it seems like a good idea in theory, is actually rarely done in practice. A study done by Nystrand et al (2001) examined the frequency of dialogic discourse and examined many variables that influence the unfolding of classroom discourse. The researchers define dialogic discourse as “a dynamic transformation of understanding through interaction” (p. 10) and literally they mean that students engaged in a meaningful exchange of information in response to a question or inquiry and the quality of the exchange was clearly dialogic, and not monologic, that is, coming from the teacher and to the student and back again. They observed over 200 eighth and ninth grade English and social studies classes and taped and coded over 872 sessions, all in schools in the mid-west. They found that dialogic spells, only took place 6.69% of the time (p. 41). They found that what most

teachers thought was discussion was a typical question-answer discussion, where the teacher was the evaluator. They found that students with a higher SES, smaller class sizes, and social studies over English, all had more dialogic spells, and, low-track classes had almost none. This discrepancy between SES and frequency of discussion was in part because the students asked very few of their own questions. The researchers found that when students ask authentic questions, and they are considered valid dialogic bids, that it tended to be the highest positive factor on creating the circumstances for dialogue in the classroom. They also found that uptake of student generated ideas, and high-cognitive demand questions also increased student discussion, however, it is key to note that difficult teacher questions did shut down student questions, possibly because the teacher has taken an authoritarian role again and the student may not feel as comfortable asking their own questions. The key finding here is that when the teacher is the authority and evaluator of thinking, then the students are less likely to be engaged. Take this fact that the researchers present: “student questions are also less likely to occur in classes with more experienced teachers” with student decrease in questions down for every year experience (Nystrand et al, 2001, p. 47). Now, this is, on one hand, just a statistic, but, on the other hand, I would contend that it indicates that a teacher must consider their authority, and realize that it may get in the way of student intellectual authority. This study was good at showing an eagle eye view of the trends of discussion, that it is not happening because teachers are mostly in the drivers seat, but, it leaves me questioning how to understand the dynamics of what's going on from a student's point of view, or why teachers feel that they must be in the driver's seat.

Another study found similar result about the mismatch between what teachers think is

good discussion and what is really happening. Alverman, O'Brien and Dillon (1990) did a study in which they observed 24 middle school teachers over the course of two semesters while teachers conducted discussions of content reading assignments. The teachers were also asked to define a good discussion. Afterward, five teachers were interviewed while they watched video tapes of their conversations. It was found that their actual discussion rarely resembled their definitions. Many teachers even thought that they were having a discussion even while watching the tape, not recognizing a contradiction between their ideal and the actual, which was a typical teacher led interaction. The researchers found that even though teachers said that they valued student questions and interaction, at the same time, admitted that they use discussion primarily so that they can evaluate the thinking of the students and see if they recall information; thus students are expected to raise hands and speak to the teacher. The researchers suggest that materials such as text books, or the teacher desire to cover certain materials, tends to make less room for student discussion and lends more to a recitation structure, while videos or notes tend to allow room for open discussion (p. 319). Not only does teacher authority and need to control the classroom tend to get in the way of authentic discussion, but so do the materials that teachers often use. This study suggests that even if teachers value discussion, don't enact it in the classroom, and this may be because of the materials they tend to use or their desire to keep control of the classroom.

Both studies show evidence that there is a mismatch between traditional teacher led discussions and textbook based coverage approaches. In order to spark discussion, students need to generate their own questions and have some control over what materials inform them.

Teacher Authority: Questioning Strategies and Non-Invasive Intervention Techniques

A number of studies have shown that teacher's convey their authority through their questioning techniques and the expectations they set for their students. Teacher's interpretive authority also can influence student willingness to discuss. Smith and Connolly (2005) did a study in which they sought to understand the effects of interpretive authority on the content and conduct of discussions in poetry. The teacher tried out three different authority situations, one in which he taught a poem he has written (high authority), one in which he taught a poem he knew very well (medium authority), and one in which he and the students read and discussed the poem for the very first time (low authority). The teacher replicated the three sessions in two 9th grade honors classes which met in 80 minutes blocks. He both audio taped the discussion as well as collected student reflections. The teacher launched the discussion in very much the same way for all three ways, by letting students decided where to begin. When analyzing the discussion, the researches coded for purpose, kind of reasoning, source of knowledge (self v text), and relationship between turns. Overall, they found that reduced teacher authority fosters increased student dialogue. When the teacher is the authority, then there are more frequent and longer teacher contributions. Students take a more passive role and forward progress is difficult to maintain. Students, in their reflections, agreed that teacher authority undermined their discussion and willingness to contribute. When the teacher was encountering the poem for the first time as well, then students were more eager and took consecutive turns, had longer responses, and tended to move the discussion forward by themselves. The teacher, in that instance, participated as an equal, offering his own questions about his uncertainly as well as his own personal

experience. Students, in their reflections, also said that the teacher felt like one of them, so they didn't look to the teacher for an evaluation of their statement, but instead looked to each other. This is evidenced in the fact that in one conversation there were 28 communicative sequences that extended thought on the same line of inquiry. As a result of the study, the researchers have concluded "We've begun to see teacher expertise as something better displayed in a willingness to share our strategies and struggles as we encounter unfamiliar texts with our students than in a rehearsed set of questions or in a compellingly argued interpretation" (p. 287). One important principle in setting up discussion spaces is the authenticity of the discussion. An honest inquiry gets people talking. However, there are many complicated factors, as Smith and Connolly have acknowledged the limits of their interpretation. They point out that discussion serves many purposes for students. In one case, they show how a student used personal experience as a means to disengage from the text and instead engage in social positioning with others. I interpret this as meaning that teens have many purposes for their social space, and these researchers acknowledge that future research might ponder how these other purposes influences student participation in discussions.

Another study done in Italy by Lucia Mason (1998) investigated the role of talking and writing in learning and showed links between student beliefs about the use of discussion as well as the effects of teacher interventions during discussions. The researcher wanted to know if student thinking really expanded as a result of sharing a socio-cognitive interaction. The study was a descriptive one, in with she analyzed the transcripts of 18 discussions in a 5th grade classroom, as well as student writing done before and after the discussions. She also

interviewed students about their beliefs on the role of talking and writing in science class. In this classroom, the teacher tended to normalize thinking via discussion and writing, so it was usual to propose and revise thinking at these times. The teacher believed that "learning means revision of prior knowledge" (p. 384). The researcher describes the quality of the teacher's interaction in these discussion as scaffolding in that "she introduced cognitive demanding questions, asked for clarifications, called attention to already constructed concepts to understand new knowledge, without cutting or 'solving' possible conflicts" (p. 365). The teacher also modeled using writing and discussing as ways to reflect and expand thinking throughout the unit. The results were that a conceptual change did occur per the use of discussion and writing, as was evidenced in the use of writing to demonstrate revisions of their previous thinking as well as the quality of their discussions. Students typically spoke with one another to negotiate and renegotiate ideas. The researcher reports "While reasoning and arguing, they activated crucial cognitive operations to understand science topics by appealing to everyday experience, shared observations, data, facts, casual relationships, analogies, hypothetical counter-evidence to defend and support own conceptions against other ideas" (p. 383). The implications of this study, according to the researcher, are that sharing cognition through collective reasoning helps students to revise their understandings of the world. In this situation the teacher is not the authority, and the students actively construct their own understanding, and actively engage in a community of learners. This teacher has fostered this practice among a group of 5th graders in a tight-knit community, but, a typical secondary teacher would have to take into account, once again, the power of beliefs and previous educational experience and would have to account for the varying degree of

readiness that students bring to class which may keep them from engaging. When student belief and teacher practice line up, students have an active stage to revise their thinking, but, indeed, it takes *both* to make this happen.

Sprague (1971) did a study in which she examined how teacher questioning and behavior influenced student reflective dialogue and she found that these influenced the culture of discussion in the classroom. She defines reflective thinking as recognizing a problem, presenting a hypothesis, probing hypothesis by testing their defensibility (p. 1). She found that when teachers did inquiry-probing practices such as asking for hypothesis, defining of terms, and clarification of ideas, then students tended to have discussions more on their own and experienced “high spontaneous grounding” (p. 35) and tended to have more talk about concepts rather than procedures. The researcher suggests that teachers set the norms for higher quality discussion when they teach students how to question by asking questions that use student ideas, rather than lecture, concentrate on questions which encourage students to present and support their ideas, and be very aware of what happens after student presents a position; if he does not spontaneously defend his ideas or if other students do not challenge him to do so, then the teacher should ask further clarification, evidence, or grounding (p. 36-37). The teacher moves in this scenario are non-invasive, in that they do not solve the problems of the student, but, encourage her to keep thinking about the problem. This study is limited in that it focused on what was observed, not what students experienced, or what effect this probing kind of discussion had on their performance or learning transfer. However, this study confirms the necessity of using probing and positioning techniques in a class discussion.

Another study done by McNeill and Pimentel (2009) analyzed the role of the teacher

in scientific discourse in three urban science classrooms and found that open ended questions significantly increased number of student utterances, student use of reasoning, evidence, and claim in class discussion about global climate issues. The researchers were part of a team that created a series of modules for a standards based high school urban ecology curriculum on the topic of sustainable cities. The study was done with three teachers who taught in the same urban district. In the lesson that was used for the study, the students watched several short video clips about climate change, none of which had entirely sound scientific reasoning. The lesson included strategies for teachers to get students to think about the claims used in the videos. Students were then asked to write a claim about whether global climate change is happening, and then prompted them to provide reasoning and evidence for their claim. The teachers were instructed to lead a discussion in which students shared their arguments. The researchers coded the discussions according to teacher versus student utterances, whether an utterance was a claim, evidence, reasoning, question, or other (unrelated or managerial). The kinds of questions asked were also coded to see if they were open, closed, rhetorical, or managerial. The researchers found that one teacher, in particular, tended to ask primarily open questions based on students' prior ideas and encouraged students to elaborate on their ideas. In this classroom, students had a higher percentage of arguments and evidence in their discussions, which tended to be more connected to previous contributions. In the other two classrooms, the classroom discourse was dominated by the teacher and students played a less active role, rarely responding to their peers but usually having an independent contribution. Even though these two teachers encouraged students to use the argument structure (claim, evidence, and reasoning), they used

significantly lower numbers of open questions, and this showed in decreased involvement on the part of students. The researchers explain that the teacher who used open ended questions resembles what van Zee and Minstree (1997) refer to as 'reflexive discourse,' which exists when students 1) make their meaning clear, 2) consider multiple views, and 3) reflect on their thinking and those of their classmates. These previous researchers claim that open ended questions are key to this dynamic because the teacher is negotiating multiple meanings instead of looking for a correct answer (p. 225). Indeed, when analyzing the goals that the three teachers had for the discussion, it is apparent to the researchers that success was linked to the goals. The teachers that wanted either for student just to share their work, or for for them to simply supply the claims in the video, were unsuccessful at fostering student discussion. Additionally, it is important to consider, according to the researchers, the importance of letting students use their everyday experience in their discussion of science. In their discussion they argue that this is important for students to engage in *boarder crossing*, for them to go from the framework of their everyday experience to the tools of scientific discourse, and open ended questions tend to invite in both student experience and scientific evidence. This study is another demonstration of students being put into the "evaluativist" stage (Kuhn, cited by Damico and Rosaen, 2009, p. 1169, in which they are navigating their own experience as well as discipline knowledge to answer an authentic question that requires them to synthesize and rethink their notion in order to answer the question. The power and intent of questions is important to fostering student discussion.

Another study (Damico and Rosaen 2009) done in a 5th grade classroom showed the power of an essential question in creating epistemological pathways. The study examined

one fifth-grade discussion of freedom, which was done during a unit in which they were reading *Freedom Train: The Story of Harriet Tubman*, and thus students had some context discussing what freedom meant. This particular discussion took place only 2 weeks into a five month unit, but was the "breakthrough" lesson in which a new precedent was set. The discussion was began by the teacher asking students to think about their current notions of freedom (thus eliciting prior knowledge), and then after several students had shared, one student asked the following question: "Do you even know the real definition of what freedom is? Do we even know that the definition {of freedom} inside that {dictionary} is real? And later he says "Does anybody really know what freedom means?" (p. 1175). After that, the discussion quickly moved to a place in which students were comparing different experiences and then considering many aspects, such as freedom from, or freedom to. In my own interpretation, they young ones seemed to cover a lot of ground that philosophers have about the idea of freedom in just one 55 minute discussion. The conversation also went to a discussion of epistemological concerns, such as when the boy who asked the question later says he "just wants to know what the real definition of freedom is" (p 1176). He questions how we really know something abstract. Real knowledge has become fluid and complex, not easily gained by an authority. In this discussion, the teacher is not the authority, and she only plays the role of keeping the discussion going by paraphrasing, orchestrating by writing down questions, and redirecting students to continue to share their justifications and thoughts. The question itself provides what researchers call an *epistemological pathway*, a path forward that allows for both a grounded inquiry with many opportunities to synthesize experience and explore how we know what we know. The strength of this study is that it shows how

powerful a student discussion can be when students embrace and actively explore a good essential question. In this case, the essential question came from a student. The challenge however, is in transferability, because there are a lot of power relationships and different challenges that come when trying to conduct such a discussion in a secondary classroom. A teacher has more intimate control of student belief in an elementary school, which is perhaps why they have success in creating discussion spaces, but, such conditions don't necessarily exist in a secondary classroom, nor is it easy to change from a traditional model to one in which the students have more control of the space and can have authentic discussions, as our next study tells.

Christoph and Nystrand (2001) did a study entitled "Taking risks, negotiating relationships: one teacher's transition toward a dialogic classroom". This study built upon previous work that Nystrand had done in 1997 which showed the importance of discussion for teaching literature. For this current study, researchers wanted to know how dialogic organized instruction emerged within a traditional classroom, for the teacher described herself as a teacher in transition. The researchers did 51 observations a ninth grade English classroom for 18 weeks, which was located in an inner-city setting in the Midwest, and most of the students were Hispanic. They analyzed discussions to figure out what conditions contributed to the emergence of dialogic discussion, as well a conducted exit interviews of teacher and target students. Three main factors contributed to making discussion possible, even though it was still quite rare, included: an ethos of involvement and respect, scaffolding that helped students be prepared to discuss, as well as making space for students interpersonal relationships. The researchers analyzed one particular instance in which the students had a discussion that had

some fire behind it, in which at least half the class participated, and some students reported that they continued to think about the question later on after class. The discussion was first posed by the teacher: Who was the most important character in *A Mid Summer Night's Dream*? The question was an authentic one, because the teacher didn't agree with the answer in her workbook, so she wanted to know honestly what the students thought. The students dived in and all had different ideas. This was the best discussion all year and it was sparked by a situation in which the teacher had little authority to evaluate meanwhile having the student's position and defend their ideas. This study shows how hard it is for a traditional teacher to "let go" sometimes and allow room for students to talk, but it also shows how authentic questions with no quick answer are the real fuel for a discussion. Researchers noticed that when the teacher is looking for a quick answer, she got one, but when she opened up the conversation in the way she phrased questions, then she got some bites now and then. This indicates to me that students know if a question is authentic, they can pick up on if the teacher really expects everyone to answer and if there is a clear answer. These questioning techniques are a beginning point anyway to understanding how questioning techniques and intervention strategies effect student engagement in discussion. .

The Role of Student Beliefs: When Questioning Strategies are Not Enough

As important as questioning strategies are, it is also important to consider the effects of student belief and prior experience in discussion, as Jansen (2008) demonstrated. She found similar result on the effect teacher evaluative authority on student discussion, but the study primarily investigated how students beliefs effect participation in whole class discussion of mathematics. She examined the

role of student beliefs about discussion and appropriate classroom behavior and its effect on participation in whole class discussions. Jansen examined 15 target students in two 7th grade classrooms. She first gathered their beliefs about discussion in math classrooms. She recorded interactions in the two classrooms in ten lessons and then analyzed the participation of the target students, comparing their beliefs with their participation, as well as comparing how often they engaged in conceptual talk versus procedural talk.

Jansen (2008) found that the nature of opportunity to participate differed in the two classrooms, based on the typical interaction pattern. In one classroom the teacher tended to use more seat work, use a typical IRE structure so that the teacher was the primary evaluator of the students. The students in turn tended to engage in more procedural talk. In this classroom participation was not voluntary and discussion rarely shifted topics or carried from student to student. In the other classroom, more time was spent on whole-class discussions, there was deviation from the IRE structure, students more often evaluated each other, participation was voluntary, and there was a higher frequency of conceptual talk over procedural talk. The teacher also used humor everyday to invite students to feel comfortable.

Jansen (2008) found that student belief had a big impact on how willing students were to participate in either classroom. She found that among the target students who believed that participating was a part of the process of learning mathematics, and who wanted feedback on their thinking, tended to participate in both classrooms. Students who felt that participation was threatening tended not to participate in either classroom, and talked more about procedures than concepts. The researcher suggests that student's beliefs about appropriate behavior in class may influence their willingness to be involved in positioning and

critiquing their classmates in whole class discussions. Students who believed that the appropriate way to behave is to raise one's hand and be called on, typically don't want to raise their hand to interrupt another student, and because the teacher is usually the evaluator in that scenario, then those already reluctant students will not automatically position themselves against a peer. Even in the classroom in which the teacher often asked students to position themselves against their peers, these students who had concepts of good behavior tended not to participate very often, meanwhile those who are eager for feedback and want to talk about their thinking tend to get what they want in a discussion. The researcher points out that students in middle school tend to find conceptual talk more difficult than procedural talk, and that is why, perhaps, that some students will first be willing to take a risk in that kind of talk. However, the researchers wonder if beliefs about what mathematics is influence their participation, meaning, math could be just calculations and procedures, or it could be ways to represent the world. A pondering in light of this study is that teachers may be able to steer their students into discussing if they help them understand conceptually what the discipline is all about. This study seems to imply that, even as a teacher, if I provide ample opportunity for students to position and critique the ideas of their peers, they may not engage if their core beliefs are a mismatch.

Another study took this very idea that students beliefs about mathematics influence their willingness to discuss conceptual ideas with peers and intentionally tried to change those beliefs through a program designed to get students thinking like mathematicians.. Lampert (1990) did a descriptive action research study which she entitled "When the problem is not the question and the solution is not the answer: mathematical knowing and

teaching.” She taught in a fifth grade classroom and designed a year long program that attempted to change the relationship between student and teacher and get students to operate more like mathematical scholars than students who are just doing the procedures of math. The researcher wanted to change what it meant to do mathematics, and what mathematical knowing entailed. In order to do this, the teacher created problems which required students to figure out and defend their strategies for solving the problem. The teacher wrote student answers on the board with their name and never evaluated them, but instead continued to have students discuss their strategies and reasoning. The teacher moves included removing herself as the authority, and instead, continually normalizing the public defensibility of ideas and modeling that mathematical knowing did not mean that they had the answer. “This routine was a way of modeling talk about thinking. This also make thinking into public and collaborative activity, wherein students would rehearse the sort of intellectual courage, intellectual honesty, and wise restraint that Polya considered essential in doing mathematics”(p. 41). Indeed, the instructors work was successful in the examined lesson, in that she reports 14 of the 18 students present in the class had had something mathematically substantial to say about exponents. The student's patterns of dialogue resemble that of high quality discussion, in that students frequently extended or questioned the thinking of their peers and engaged in dialogue to further their thinking on the matter. The researcher reports that students did engage in less productive behaviors, such as disagreeing by exerting power or political control over others, turning to the teacher or another authority for ratification, treating rules of facts as arguments, and keeping their thinking private. Lampert acknowledges that its not easy to change the culture of school

overnight, and that students are likely to be influence by what they think is the norm, and even over the course of the whole year, the teacher had to keep showing the norms to students. The most important lesson this study has for me is that a practice of high quality discussion and thinking and student public display of thinking is a challenging norm to create, in that it takes intentional teacher moves to remove teacher authority, and paradigm of authority that manifests in students when they engage in non-productive or aggressive behaviors during discussion.

Student beliefs play a powerful role in their readiness and willingness to engage in discussion. Questioning and intervention strategies alone may not be enough to change student belief. These two studies suggest that teachers need to consider student conceptions and find ways to address them regularly.

Conclusion

As a teacher who values discussion, I want to know how to get my students to take full advantage of their time for discussions and provide students with the most access to socio-cognitive spaces so that they can share and revise their thinking. The research suggests that teacher behavior in the classroom has an important role in creating discussion spaces for students, and that teacher authority and questioning strategies can provide many students with access to discussion.

Reducing teacher authority makes the discussion more authentic for students. Teacher authority is essentially linked with questioning strategies. Many studies (Smith and Connolly (2005) Sprague (1971), Jansen (2008), Mason (1998), and McNeill and Pimentel (2009), Damico and Rosaen 2009, and Lampert (1990)) in this body of research showed that when teachers made it a norm for students to position themselves in discussions and talk out their reasoning with peers, creating a normal culture

of public defensibility of ideas, then it was more likely for some, if not many, students to engage in classroom discussion in an honest inquiry. In other words, students need a space to revise their thinking. This is what a good discussion essentially is, it is a grounded inquiry that systematically solves a problem and gives a chance for people to get feedback on their thinking. In a discussion space, when students can begin to develop principles around the use of concepts, then they are moving from a concrete to an abstract or an evaluative way of seeing the world. Important teacher moves to foster this include using open and authentic questions, allowing students' questions to be dialogic bids, and using non-invasive intervention techniques which do not evaluate student thinking, but instead fuel student ability to keep thinking out the problem.

However, it is clear that questioning strategies alone are not enough, for research has shown that student beliefs also played a powerful role, in that if a student was used to the IRE structure, and was used to responding primarily to a teacher, or who was reluctant to look stupid in front of peers or have a wrong answer, then these students tended not to talk no matter what the teacher's orientation (Jansen 2008). This indicates how important it is for a teacher to help students conceive of the structure, expectations, and purpose for discussion, because these beliefs play an important role if a student is to have full access to these discussion times. As Lampert (1990) found, she had to continually reinforce the norms of the new roles she wanted them to play, because students are not used to operating in a way in which they are the authority. New expectations have to be set.

As a result of my research, I feel that I know more about how to set up the conditions for a discussion in a universal sense, in that I understand the fundamental role that teacher authority has in influencing student belief and

engagement in discussion. Through this process, I have come to wonder about how the following influence the quality of a discussion.

I would like to understand and know:

- How students conceive of the roles available to them in discussion as well what it means to "do" the discipline. This will help me know how to open up and extend their paradigm.

- How to create appropriate questions, quality materials, and rituals to prepare students to think and rethink.

- How to create circumstances so that student generated questions have class attention.

- Appropriate protocol for intervention in a discussion on the part of the teacher and coaching methods to get students to try on new roles or understand the role of roles in the group think.

- How to include formative assessments and post-discussion assessments to understand the state of student thinking on a topic to evaluate how my scaffolding has worked to give students a chance to change their thinking.

- How to include spaces to evaluate the process of learning/discussion, in order to increase student investment in activity.

More work and intentional practice in the field of discussion needs to be done before we can know what's really possible, and how other social, cultural, or school dynamics hinder or promote discussion in the classroom. In the meantime, I'm going to create an intentional culture of discussion in my classrooms that fosters student intellectual authority, in which it is the norm for students to be the one's asking questions, talking, thinking, and solving important problems.

References

Alvermann, D. E., & And, O. (1990). What Teachers Do When They Say They're

- Having Discussions of Content Area Reading Assignments: A Qualitative Analysis. *Reading Research Quarterly*, 25(4), 296-322. Retrieved from EBSCOhost.
- Christoph, J, & Nystrand, M. (2001) Taking risks, negotiating relationships: one teacher's transition towards a dialogic classroom. National Research Center on English Learning and Achievement.
- Damico, J., & Rosaen, C. (2009) Creating epistemological pathways, to a critical citizenry: examination of a fifth-grade discussion of freedom. *Teachers College Record*. 111 (5) 1163-1194.D
- Jansen, A. (2008) An Investigation of relationships between seventh grade students beliefs and their participation during mathematics discussion in two classrooms. *Mathematical Thinking and Learning*. 10, 68-100.
- Lampert, M. (1990) When the problem Is not the question and the solution Is not the answer: mathematical knowing and teaching. *American Educational Research Journal*. (27), 1, 29-63.
- Mason, L. (1998). Sharing cognition to construct scientific knowledge in school context: the role of oral and written discourse. *Instructional Science* 26, 359-389
- McNeill, K., Pimentel, D.S. (2009). Scientific discourse in three urban classrooms: the role of the teacher in engaging high school students argumentation. Wiley periodicals. DOI 10.1002/sce.20364.
- Nystrand, M., Wu, L. L., Gamoran, A., Zeiser, S., Long, D., & National Research Center on English Learning and Achievement, A. Y. (2001). Questions in Time: Investigating the Structure and Dynamics of Unfolding Classroom Discourse. CELA Research Report. Retrieved from EBSCOhost.
- Smith, M. W, & Connolly, W. (2005) The Effects of Interpretive Authority on Classroom Discussion of Poetry: Lessons from One Teacher. *Communication Education*. 54(4), 271-288.
- Sprague, N. (1971). Inquiry Dialogue in the Classroom. Retrieved from EBSCOhost.
- Zull, James, E. (2002). *The Art of Changing the Brain: Enriching the Practice of Teaching By Exploring the Biology of Learning*. Stylus Publishing, LLC

Facilitating the Development of Abstract Thinking in Adolescents

Adolescents do not think abstractly without pedagogical and instructional support, nor can they access abstract ideas without support. For this literature review, research into cognitive development was studied in the context of identifying teaching strategies for supporting higher-order, abstract thinking. Approximately twenty peer-reviewed qualitative and quantitative empirical studies from 1958-2010 were examined. These studies were carried out in middle schools, high schools, colleges, and other research centers in the USA, Canada, South Africa, and Australia. Participants in these studies were adolescents, college students, and/or young adults. Most studies were designed so as to compare and contrast (a) the effects of a specific intervention upon participants' capacity to think abstractly between pretest and posttest with (b) the effects of no intervention upon participants' capacity to think abstractly between pretest and posttest. In these designs, the interventions, or lack thereof, were the independent variables and abstract thinking was the dependent variable. Five literature reviews were also examined for this paper, as were books about social constructivism, which is a research-backed learning theory that underpins effective practices for developing abstract thinking. In synthesizing research data, learners were found to be more able to think abstractly due to: making a personally relevant connection to the abstract concept, a teacher or researcher's cognitive and conceptual scaffolding, and the opportunity to think metacognitively. Findings imply that teachers should scaffold abstract content for interest and conceptual access. Teachers also should structure tasks that require abstract thinking with metacognitive exercises that facilitate learners' consciously tracking the development of their own ideas and thoughts.

My first quarter fall teaching, my 9th grade students had a hard time understanding denotation and connotation. I needed to support them, but for many students I failed. To make matters worse, since this was only part of my learning goal I moved on while many students still did not understand. My lessons involved asking students to recognize the denotative and connotative meanings of particular symbols, words, phrases, and printed advertisements. My mentor teacher advised me to incorporate more concrete scaffolding for students to approach this abstract concept: denotation and connotation. She said students were just beginning to be able to think abstractly, and that they needed more support. I did not understand how to do this.

I asked students to make charts, to draw, to respond to questions, and to design billboards that taught peers. My instructions were inaccessible for a lot of students, particularly students who are English language learners. Students did not have access to the abstract concepts because I could not support them to think abstractly with appropriate scaffolding and unit design. In response, this paper inquires: What teaching strategies have been found to be effective in responding to and facilitating the cognitive shift from concrete thinking to abstract thinking?

This paper explores approaches to abstract thinking as well as guidelines for designing concrete scaffolds to abstract concepts. Students need to be able to think

abstractly in order to make evaluative inquiries and arguments (Kuhn & Dean, 2004). People need to be able to think abstractly to make plans and solve problems, and they should learn these skills in English language arts class because language is a primary cognitive tool for facilitating abstract thought.

This paper defines abstract thinking as thinking that entails intentional inquiry, an understanding of principles, critical reflection, and consciously manipulating intangible ideas. This paper will discuss major schools of thought about abstract thinking. Then, the paper will describe instructional procedures and guidelines for teachers who work to facilitate their students' abstract thinking.

Schools of thought about the development abstract thinking generally can be defined in terms of what causes or supports the onset of abstract thinking. Piaget and Inhelder (1958) wrote that people develop according to biological stages. British psychology tends to hold that abstraction is a function of the content of what the person knows rather than how the person can think per se (Goswami, 2001). Social constructivism advances that abstract thinking develops as a result of appropriate scaffolding in the learner's zone of proximal development (Vygotsky, 1978). There is little disagreement as to what teaching methods have been found to be effective in facilitating the shift. Scaffolding, metacognition, and the exploration of personally meaningful ideas have been found to support the development of abstract thinking.

The educational community should be interested in this paper's topic because it is about psychological and cognitive development—it is about the way kids in classrooms think, grow, and learn. Studies have shown that children can think abstractly by elementary school, and these

skills are relied upon to meet learning standards in secondary school. To understand how young people develop and use abstract thinking will support classroom instruction involving abstract thinking. The more teachers understand about this topic, the more able they will be to scaffold learning experiences that support students to think abstractly.

School should support students to learn. Thinking is necessary for learning. Students will have different levels of prior experience with abstract thinking based on their cultural communities. Bloom's (1956) taxonomy moves from concrete to abstract thinking. This research will support practitioners' efforts to bolster students' higher-order thinking skills.

Complex, higher-order abstract thoughts develop with experience. They do not spontaneously appear (Kuhn, Black, Keeselman, & Kaplan, 2000). Teachers need to implement effective strategies for providing students with opportunities to think abstractly, and this research will provide some inroads to this end. Studies have shown that late adolescents who can perform tasks that require hypothetical reasoning achieve better academically as compared with those are still on the concrete stage (Mwamwenda, 1993). However, age is, "overemphasized" in common parlance when talking about a person's cognitive development (Danner & Day, 1977). A variety of factors including age, sex, and culture influence the onset of abstract thinking in adolescents (Douglas & Wong, 1977). However, the development of this kind of thinking will be supported by the intentional and conscious practice of abstract thinking. In other words, practice matters too. Also, social development is linked to cognitive development. Cognitive development is largely mediated by school, and teachers can help facilitate this cognitive shift in students (Rardin & Moan, 1971).

Abstract thinking develops most robustly through meaningful, authentic application. Young minds need to think abstractly to make declarations they believe in and solve problems they care about. Research indicates that abstract thinking should not be viewed as superior to or more advanced than concrete thinking. In fact, learning and development is a two-way street between concrete and abstract thinking (Roth & Hwang, 2006). The development of abstract thinking should be seen on the continuum of applying abstract thinking skills to concrete experiences.

This study is limited in that research offered general, not specific, suggestions as to how to support abstract thinking, or the specific suggestions were performed in the context of qualitative studies of success stories. The results of qualitative studies may be context-specific and not completely generalizable. This literature review synthesizes and groups methods for supporting abstract thinking that have been found to be effective and distills the finding to a set of broad principles. Because of all the variables involved in the development of abstract thinking, this study will not be able to attribute with clarity the degree to which specific factors influence higher-level thinking in particular populations. This study will be limited to an overview of the concept of abstract thinking and an explanation of best practices for supporting students in a heterogeneous classroom to develop and apply abstract thinking skills.

Literature Review

From a learner's perspective, the development of abstract thinking is situated in the context of cognitive development and the development of higher order thinking skills. A learner is more likely to think abstractly about things they care about than things they are not interested in. From a teacher's perspective, abstract thinking

develops in the context of scaffolding in students' zones of proximal development, inquiry and argument, evaluation, and metacognition. Teachers also must ensure that learners are personally interested in what they are learning about so that they will make the effort to practice thinking abstractly.

Personal Context and Interest as a Starting Point for Abstract Thinking

Young people develop and use abstract thinking to consider concrete experiences and abstract concepts that matter to them. They enter secondary school with experience thinking abstractly, and are starting to be able to think about and learn about abstract concepts. Through self-efficacy will students be able to develop and critique their own ideas. Kuhn and Dean (2004) referred to the author's previous research, which indicated that learning how to sustain personally relevant inquiry and arguments supported students to reason more effectively about multivariable, abstract concepts and positions related to such inquiry and argument.

For example, a qualitative study showed that an experimental group of adolescents and young adults who dialogued with peers about their personal viewpoints with regard to capital punishment were more able to compose reasonable arguments compared with a control group of adolescents and young adults who composed arguments about personal viewpoints about capital punishment without having dialogued with peers (Kuhn, Shaw, & Felton, 1997). The study was designed with participants in both the experimental and control groups presenting their positions orally on the topic in a pretest and post-test. These presentations were audio-taped, transcribed, and analyzed. This study demonstrated that practice thinking abstractly about a topic and engaging in

personally meaningful dialogues about the topic will lead to more sophisticated abstract thinking about the topic.

Another study indicated that by “problematizing,” students could more successfully study abstract concepts (Capon & Kuhn, 2004). In this study, two groups of students (Group 1 and Group 2) learned about the two concepts: (Concept A and Concept B). Group 1 learned about concept A in lecture format and concept B in problem-solving format. Group 2 learned about Concept A in problem-solving format and Concept B in lecture format. The same instructor taught both classes. When tested on material 12 weeks after instruction, subjects in each group demonstrated that they had better understood the concept that they learned through the problem-based method. With problem-based learning, there is more of a chance that students will be able to connect the problem-based learning opportunity with their general experiences with problematic scenarios.

A qualitative report on a classroom (Flanigan & Greenwood, 2007) showed that when a teacher told students they would have to begin wearing uniforms, students were readily able to understand the word and concept, “dictator.” This example was presented in the context of showing an effective teaching method. Connecting words with students’ experiences and personal interests facilitated students coming to understand the words. In the classroom studied, students elected to think hypothetically and abstractly about the implications of a dictatorial policy on their own personal interest. Though the study was limited to one classroom in an upper middle class Pennsylvania, a meaningful general format is suggested by the teacher’s success: connect with student’s personal interest to get students started thinking abstractly.

Steele (2003) suggested that to facilitate abstract thinking, teachers employ active learning, collaboration, data memorable and interesting to students’ life experiences and interests. This study suggested talking about language and discourses of power with college students by interrogating their language use surrounding sexual relations. A professor taught the same “linguistic relativity hypothesis” to an experimental group of students and a control group of students. However, the experimental group learned about the concept through examples relating to sexuality, and the control group did not use examples. The experimental group scored higher on knowledge and application examinations. Data suggest that because an interesting context framed the students’ inquiry, exam scores improved. A teacher should always ensure that students participate in personally relevant avenues of personal inquiry when thinking in complex ways. This might look like a discussion based on meaningful and personal concrete experiences which can then be followed by metacognitive analysis that calls for students to consider their experiences from a more critical, inquiry-based lens.

A position paper by two teachers (Smith & Mate, 2006) proposed that by making videos exploring abstract ideas, especially online videos, students would necessarily personalize the learning content to represent the abstract ideas. This paper was based on the teachers’ successful experiences supporting students to make videos to support and develop understanding of abstract ideas.

Facilitating students to make personal connections to material will support abstract thinking because people are more likely to think and respond to concepts and problems that they care about as opposed to concepts and problems unrelated to their own experience or interest. This facilitation is a

specific kind of *scaffolding*, or designing conceptual entry points appropriate to students' interest, developmental levels, and prior knowledge. Scaffolding to support abstract thinking is discussed in the next section.

Social Constructivism and Scaffolding for Abstract Thinking

Vygotsky (1978) revolutionized the concept of an individual constructing knowledge by emphasizing the society's role in an individual's development. A learner responds to guidance by developing past their current state of understanding if the guidance is appropriate for that particular learner. Vygotsky characterized the appropriateness of guidance with the concept of the Zone of Proximal Development—ZPD. According to Vygotsky, development, including cognitive development and the development of abstract thinking is socially situated and must be conceived of in terms of a learner's cultural participation. Rogoff (2003) wrote that social institutions and cultural communities offer developing participants tools and scaffolds to facilitate and spur human development. Teachers and schools are cultural resources that support development, especially including the development of abstract thinking. The premise of this paper's inquiry relies on the social constructivist principle that a teacher can, in a social context, support learner to develop cognitively and to think abstractly.

Research indicates that people will already think abstractly in secondary school. Children already deal with abstract concepts of life and death, for instance (Egan, 2001). A literature review characterized scaffolding as featuring the paced fade-out of teacher-support relative to an increase in student responsibility for thinking (Van de Pol, Volman, & Beishuizen, 2010) To support the development of abstract thinking,

teachers need to tap into adolescents' capacity to think abstractly as well as offer concrete educative experiences to scaffold learning about abstract ideas. Abstract thinking connects with concrete thinking as learners apply ideas to their lived experiences.

Abstract thinking needs concrete scaffolds. In another literature review Goodson (2000) compiled a list of strategies a teacher can consider or draw from when scaffolding for higher-order thinking. Specific considerations included, "directions on use of cognitive strategies such as rehearsal, elaboration, organization, reflection, and paraphrasing," "open-ended tasks involving several ways to resolve difficulties or solve problems and give opportunities for small groups to contribute to outcomes," "practice in making inferences" especially in the context of real-life situations, and strategically posing series of questions from low-order to high-order thinking (p. 7). Patterns among the considerations also indicated the need to engage students in authentic, meaningful, clear tasks that require students to be responsible to a larger community. Making personal meaning of a task is a complex thinking process in itself, and charging students to articulate that meaning will engender joy as well as abstract thinking.

Empirical Studies about Scaffolding for Abstract Thinking. Piaget and Inhelder (1958) conducted seminal research into the onset of abstract thinking. They gave two kinds of tests to groups of Swiss children and teenagers. These tests called for participants to explain abstract rules governing systems. One system was a rope-swing, and the other system was a series of cards with letters on one side and numbers on the other side. Results indicated that at age 12, participants could apply abstract, hypothetical reasoning to determine the rules whereas younger participants could

not. Entrenched in the experiment are the cognitive scaffolds necessary to support participants to think abstractly: questions about the systems, cards, ropes, propositions, and researcher assessments all supported the participants to engage in the tasks that required and instigated abstract thinking.

By working on tasks that require abstract thinking, people as young as 9 are more able to think abstractly (Kuhn & Angelev, 1976). In this study, 87 New York City schoolchildren, aged 9-11 were given the same formal reasoning tests Piaget and Inhelder (1958) gave plus one additional test designed by the researchers in the context of a 15-week instructional intervention program. One posttest was administered directly after the treatment, and another posttest was administered four months later. Results indicated that students gained progress toward formal reasoning from pretest to two posttests. Formal thinking developed, so the researchers were able to scaffold effectively for abstract thinking. These pre- and post-tests meant that internal validity was somewhat ensured in terms of the treatment causing the shift, however threats to internal validity remain in terms of participants' potential access to external learning opportunities and conditions that could have accounted for their increase in performance on the tests. However, so long as participants did not cheat and name somebody else's answers, over the course of such a long study, external influences would not threaten the validity of the results. This is because researchers were interested to see what thinking developed in the context of the 4-month intervention program, not as a result of any isolated treatment variable.

Cumming-Potvin (2007) found in a qualitative study that scaffolded discussion prompts that connected to a struggling student's life facilitated the student's comprehension of a text during a literature

circle and during individual reading. Specific results from this study would be difficult to generalize with any certainty because this was a qualitative study of just one person. This study was carried out in Australia by a Canadian researcher as a qualitative study for a grade-7 student. The boy who was the object of the study experienced success reading and considering the specific abstract concept, "criminality." At the least, cognitive scaffolding across home and school seems to have been effective in this case and is worth trying, especially for students who need extra scaffolding to access the abstract ideas.

Guerrero and Villamil (2000) showed that working in pairs in a peer-tutoring situation in revising a paper provided educational benefits to both learners. This was a qualitative study of a dyad working in conversation to revise a paper. The writer and the reviewer were both ELL students. What they call, "socially-based individual revision skills" were found to develop in both members of a dyad as a result of working to revise a paper together. This demonstrates that to be able to think about an abstract construct such as writing-in-process, it supports learners to have a concrete scaffold in capable peers.

Another study showed that by working in pairs to solve complex problems, students made abstract representations to support their communication (Schwartz, 1995). Adolescents in three New York schools were participants. In this study, dyads were more likely than individuals to come to correct answers to three different complex abstract problems. Dyads also were more likely to create "abstract representations" to assist in communicating about and manipulating abstract ideas.

Egan (2001) discussed the concept of "cognitive tools," indicating that language with its linguistic sets and subsets is a primary tool of cognition. To support

cognition then, teachers can provide tools based on language patterns such as mnemonic devices, rhymes, or letters-in-common. An example from my teaching experience could be to connect a key word with a linguistic anchor in common with its meaning. In this case, I could offer students the guiding device that “denotation” starts with D, just like the “Dictionary Definition.”

Wolfe, Brush, and Saye (2003) performed a study to test whether a particular thinking routine called the Eisenberg and Berkowitz Informational Problem Solving (EBIPS) model would serve to support student metacognition and achievement in the process of carrying out a multimedia project. For *each* of the following steps, this model calls for a thinker to articulate two particular elements: task definition, information-seeking strategies, location and access of information, use of information, synthesis, and evaluation. The model guided design of a series of scaffolding templates embedded into informational software. Each of two groups used the software, but only one group used the scaffolding templates. Results indicated that compared to a control group, the group who followed the model-based thinking scaffold created products that were more accurate, more rich in detail, and drew from a wider variety of sources. This kind of scaffolding supports students to have access to more intricate ideas and to think abstractly during the process so as to make creative decisions. Metacognitive scaffolds and metacognition support abstract thinking. These will be explored in the next section of this paper.

Metacognition and Scaffolding Metacognitive Opportunities for Learners

For Kuhn (1999) formal reasoning, or critical thinking, was composed of metacognitive thinking—thinking about ideas, metastrategic knowing—thinking

about thinking, and epistemological understanding—awareness that one can evaluate knowledge. Teachers should support students to evaluate thinking so they can better manipulate and relate to ideas, the thinking process, and knowledge. This frame for developing abstract thinking engenders the principles of student-centered pedagogy and a constructivist approach to learning.

Metacognition—thinking about ideas—is a type of abstract thinking that can also support understanding of other abstract ideas. Scaffolding is about offering access to thinking. In part, scaffolding has to do with facilitating metacognitive thinking. For instance, inquiry-learning requires multivariable considerations that early adolescents may not be able to do without scaffolding and context. A study (Kuhn et al, 2000) had 6th-8th grade students asked solve problems by considering multiple variables. One aspect of the study found that students could not reliably articulate general principles to illustrate: in a multivariable system, if one variable is changed and the system changes, then the changing of that one variable caused the change. Students were able to perform tasks with multiple variables by using scaffolds such as dyad discussion, educational software, and metacognitive questionnaires. This study was designed to compare learning of students who answered metacognitive questions about a scientific inquiry-based performance task with students who performed the same task but did not answer metacognitive questions. Examples of these questions were, “What was different about this record and the last record they looked at?” and “If the second record comes out different from the first, what will the reason be?” Students who answered metacognitive questions improved from pretest to posttest to a greater degree

than did students who did not answer metacognitive questions.

Smith, Rook, and Smith (2007) performed a 12-week study that called for one group of 9th grade students to respond to comprehension questions and metacognitive and affective questions about their reading experiences, another group of similar students respond only to comprehension questions, and a third set of students received no questions and acted as a control group. Those students who answered the metacognitive and affective questions were found to have retained information from the readings significantly better than the students who did not answer metacognitive and affective questions and better than the control group. Being prompted to engage in higher order thinking and personal connections was found to have a positive effect on achievement. Thinking about one's own learning and understanding can prompt learners to feel as though they are undertaking meaningful inquiry.

On a regular basis, for general and specific understandings, learners need to evaluate their thinking, their ideas, and their conceptions of knowledge. Through these evaluations and thinking-strategies, learners will develop metacognitive skills and become more able to consciously manipulate abstract ideas.

When designing and implementing scaffolding for abstract thinking, teachers must consider how to motivate student-driven thinking and how to create a metacognitive classroom. Kuhn and Dean (2004) wrote in a research-based essay that to facilitate critical and abstract thinking, teachers should teach metacognitive strategies and incorporate opportunities for metacognition in lessons. Wolf and Brush (2000) discuss methods of facilitating metacognition: model it, have students keep a learning log, provide instruction in self-questioning, and adapt a learning and

studying model for students to apply. Sharma and Hannafin (2004) denoted five key factors to consider in creating an environment supportive to critical thinking: reflection, problem context, feedback, perception of self as learner, and prior knowledge.

Conclusions and Recommendations for an Integrated Practice

Students in secondary schools can think abstractly with direct support for their thinking along three dimensions that should all be integrated into content lessons. Research has shown that key principles and practices for supporting learners' abstract thinking are: conceptual scaffolds, learners' personal connection to the abstract concepts, and metacognition. Overall, these ideas demonstrate that the following teacher actions support the development of abstract thinking:

- Facilitate students' connecting to the material;
- Use scaffolds to teach within learners' zones of proximal development; and
- Support students to learn and use cognitive tools and routines and metacognitive models.

If teachers support students on these three levels, then students will become more able to think abstractly and to understand and use abstract ideas. See Figure 1 for a visual explanation of how personal interest, scaffolding, and metacognitive opportunities support the development of abstract thinking.

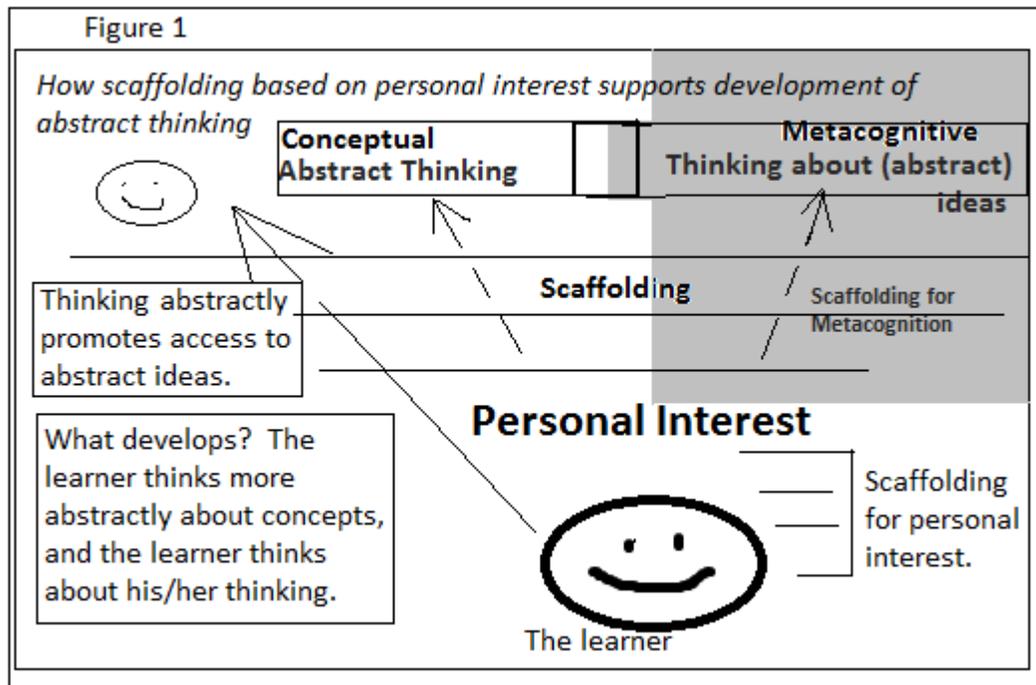
The following example will help demonstrate this paper's recommendation for implementing teacher moves that integrate the above elements in classroom practice. In this example, the teacher taps into student interest, uses cognitive

scaffolds, and assigns metacognitive exercises to support students to understand the abstract idea, *connotation*:

- Assign students to discuss how words in their lives with different connotations feel different to them—for example, ask students if they'd rather be *stared at* or *gazed at*;
- Provide opportunities for students to extend their existing understanding—for example, ask questions that lead students to explain that words can have implications in usage;
- Offer opportunities to connect the concept to be learned to students' linguistic and conceptual framework new word—in this case students could connect the term *connotation* to their understanding of its meaning using a

- Graphic organizer known as a vocabulary anchor
- Assign students to self-evaluate their understanding of the concept—in this case, a teacher can prompt students to describe what they know about *connotation*, how certain they are of their knowledge, and what they are confused about.

As indicated by the research discussed above, to support abstract thinking, teachers must scaffold for student interest and conceptual access. This means teachers must learn and pay attention to students' ZPDs and interests when planning curriculum and delivering instruction (Cumming-Potvin, 2007; Goodson, 2000; Guerrero & Villamil, 2000; Kuhn & Angelev, 1976; Van de Pol, Volman, & Beishuizen, 2010; Wolfe, Brush, and Saye, 2003).



To support students' developing connection to the concepts, the form and content must personally connect with

learners. Learners must make personal connection with the way they learn as well as with the learning content. Teachers must

find out what interests students and design curriculum that connects learning goals with student interests. This looks like a *hook*, or an intentional framework, that cultivates *buy-in*, or student interest. This connection-making can also be supported by problematizing, creative learning activities such as making videos or other art related to conceptual entry points, and through other methods. To scaffold considering students' zones of proximal development, I recommend that teachers provide concrete examples, including tangible and visible ideas, that connect with abstract concepts. The distinction between this and personal relevance is that students may not care about concepts even if they have conceptual access. Scaffolds must allow access, and should provoke interest, to the abstract idea—by making it concrete. Abstract concepts can be made real and understandable for learners if they are framed so as to inform concrete, tangible experiences or draw upon learners' authentic feelings or concerns. Some examples of ways to scaffold for conceptual access are:

- Provide clear directions, including direct instruction for how to perform processes
- Use graphic organizers to explain concepts, and support students to use them
- Assign students to act as professionals and/or use sophisticated equipment to facilitate an investigation or inquiry
- Asking questions or posing problems that students can answer by analyzing, applying understandings, synthesizing, or evaluating.

It is important to see what kinds of scaffolding work best for students and to tailor curriculum design and teacher-moves

to support the students present in the classroom.

Thinking routines and classroom learning activities must be explicitly taught. I recommend teaching students how to take notes, how to annotate texts, and how to do every academic task they need to do in order to be successful. Provide directions in multiple ways, model appropriate use, provide group work structures, and see what students need—use assessments to determine exactly where students are, and *then* plan lessons. By understanding where students are and what they need, teachers will be able to custom-build effective scaffolds to support students' capacity to think abstractly.

For metacognition, teachers should prompt students to consider and respond to lots of reflection and connection questions, including affective questions. This can look like models or templates to support processes as well as reflection questions to support assessments for learning. This is about students' evaluating their changes, students articulating how ideas are connected. Examples of integrating cognition into content may look like projects that call for introspection mixed with higher order thinking with regard to external sources such as using evidence from text to support an interpretation. Specific examples of how to scaffold for metacognition include:

- Ask students to explain what they know about a specific conceptual learning goal
- Prompt students to evaluate their levels of certainty about the learning goal
- Ask students to explain how the concept they are learning relates to other specific ideas
- Ask students to plan an investigation into an idea

- Ask students to evaluate their study processes for strengths and weaknesses
- Ask students what they still need to learn to reach a specific learning goal.

Metacognition is a form of abstract thinking—it is thinking about ideas; therefore, metacognitive prompts can scaffold entry into students' directly using and considering how they are manipulating concepts. Metacognition supports the development and use of abstract thinking directly and indirectly. Metacognition supports abstract thinking directly through conscious practice thinking abstractly about thinking. Metacognition supports abstract thinking indirectly through opportunity for evaluation and synthesis of other abstract ideas. Additionally, metacognitive prompts usually feature elements of self-reflection and evaluating and tracking one's own ideas and thinking. This supports the development of abstract thinking insofar as it prompts students' interest in their selves. As mentioned above, developing personal interest about the process or object of abstract thinking will support the capacity for such thinking.

There is a need for research on the effectiveness of particular scaffolds. Part of this involves understanding when to apply which kinds of scaffolds. There does not seem to be much student-voice in the research, and it would be useful to understand what patterns exist in what kinds of lenses or voices or activities supported students' making personal connections with content. However, every teacher will need to see what his/her students connect with, see what relevant community issues are at play. In terms of research on how metacognition supports abstract thinking, new models for self-questioning should be developed and tested, especially models that facilitate articulation and evaluation of growth and learning. Additionally, research

into instructional unit plans and models that called for students to apply abstract thinking in personally relevant concrete situations (especially community-based, social situations) would be worthwhile.

References

- Cumming-Potvin, W. (2007). Scaffolding, multiliteracies, and reading circles. *Canadian Journal of Education*, 30(2), 483-507. Retrieved from <http://www.jstor.org/stable/20466647>
- Danner, F. W., & Day, M. C. (1977). Eliciting Formal Operations. *Child Development* 48(4), 1600-1606. Retrieved from <http://www.jstor.org/stable/1128524>
- Demetriou, A., Christou, C., Spanoudis, G., Platsidou, M., Fischer, K. W., & Dawson, T. L. (2002). The development of mental processing: Efficiency, working memory, and thinking. *Monographs of the Society for Research in Child Development*, 67(1), i-vii+1-167.
- Douglas, J. D., & Wong, A. C. (1977). Formal operations: Age and sex differences in Chinese and American children. *Child Development*, 48(2), 689-692. Retrieved from <http://www.jstor.org/stable/1128676>
- Egan, K. (2001). The cognitive tools of children's imagination. Paper presented at The Annual European Conference on Quality in Childhood Education.
- Flanigan, K., & Greenwood, S.C. (2007). Effective content vocabulary instruction in the middle: Matching students, purposes, words, and strategies. *Journal of Adolescent and Adult Literacy*. 51(3), 226-238.
- Goodson, L.A. (2000). Teaching and learning strategies for complex thinking skills. Paper presented at The National Convention of the

- Association for Educational Communications and Technology.
- Goswami, U. (2001). Cognitive development: No stages please—we're British. *British Journal of Psychology*, 92, 257-277. Retrieved from <http://library.evergreen.edu>
- Inhelder, B., & Piaget, J. (1958). *The growth of logical thinking from childhood to adolescence*. (A. Parsons & S. Milgram, Trans.). USA: Basic Books.
- Kuhn, D. (2000). Metacognitive development. *Current Directions in Psychological Science*, 9(5), 178-181. Retrieved from <http://www.jstor.org/stable/20182660>
- Kuhn, D., & Angelev, J. (1976). An experimental study of the development of formal operational thought. *Child Development*, 47(3), 697-706. Retrieved from <http://www.jstor.org/stable/18184>
- Kuhn, D., Black, J., Keeselman, A., & Kaplan, D. (2000). The development of cognitive skills to support inquiry learning. *Cognition and Instruction*, 18(4), 495-523. Retrieved from <http://www.jstor.org/stable/3233891>
- Kuhn, D., & Dean, D. (2004). Metacognition: A bridge between cognitive psychology and educational practice. *Theory into Practice*, 43(4), 268-273. Retrieved from <http://www.jstor.org/stable/3701534>
- Kuhn, D., Ho, V., & Adams, C. (1979). Formal reasoning among pre- and late adolescents. *Child Development*, 50(4), 1128-1135. Retrieved from <http://www.jstor.org/stable/1129340>
- Kuhn, D., Shaw, V., & Felton, M. (1997). Effects of dyadic interaction on argumentative reasoning. *Cognition and Instruction*, 15(3), 287-315. Retrieved from <http://www.jstor.org/stable/37170>
- Moseley, D., Elliot, J., Gregson, M., Giggins, S. (2005). Thinking skills frameworks for use in education and training. *British Educational Research Journal*, 31(3), 367-390. Retrieved from <http://www.jstor.org/stable/30032631>
- Mwamwenda, T. (1993). Formal operations and academic achievement. *Journal of Psychology*, 127(1), 99. Retrieved from <http://www.psypress.com/>
- Piaget, J. (2008). Intellectual evolution from adolescence to adulthood. *Human Development*, 51, 40-47. Reprinted from (1972) *Human Development*, 15, 1-12.
- Rardin, D. R., & Moan, C. E. (1971). Peer interaction and cognitive development. *Child Development*, 42(6), 1685-1699. Retrieved from <http://www.jstor.org/stable/1127578>
- Schwartz, D. L. (1995). The emergence of abstract representations in dyad problem solving. *The Journal of the Learning Sciences*, 4(3), 321-354. Retrieved from <http://www.jstor.org/stable/1466735>
- Sharma, P. & Hannafin, M. (2004). Scaffolding critical thinking in an online course: An exploratory study. *Journal of Educational Computing Research*, 31 (2), 181-208.
- Smith, D. & Mate, N. (2006). Personalizing the abstract with online video. *Education Canada*, 46(2), 50-52. Retrieved from <http://library.evergreen.edu>
- Smith, K. S., Rook, J. E., & Smith, T. W. (2007). Increasing student engagement using effective and metacognitive writing strategies in content areas. *Preventing School Failure*, 5(3), 43-48.
- Steele, T. (2003). Sex, culture, and linguistic relativity: Making abstract concepts

- concrete. *Teaching Sociology*, 31, 212-220.
- Sternberg, R. J., & Downing, C. J. (1982). The development of higher-order reasoning in adolescence. *Child Development*, 53(1), 209-221. Retrieved from <http://www.jstor.org/stable/1129655>
- Van de Pol, J., Volman, M., & Beishuizen, J. (2010) Scaffolding in teacher-student interaction: A decade of research. *Educational Psychology Review* (22), 271-296.
- Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press: Cambridge, MA.
- Wolf, S. E. & Brush, T. (2000). Using the big six information skills as a metacognitive scaffold to solve information-based problems. Paper presented at The National Convention of the Association for Educational Communications and Technology. Retrieved from <http://library.evergreen.edu>
- Wolfe, S.E., Brush, T., & Saye, J. (2003). Using an information problem solving model as a metacognitive scaffold for multimedia-supported information-based problems. *Journal of Research on Technology in Education*, 35(3), 321-341.

Increasing Student Intrinsic Motivation: How to Encourage Student Engagement and Ownership in the Learning Process

The purpose of this literature review is to examine strategies to increase student intrinsic motivation and answer the question, "How do educators increase student motivation and thus student engagement and ownership in the learning process." This literature review was carried out by using Educational Resources Information Center (ERIC), PsycheInfo, and library book databases focused on studies that deal with self-efficacy, student autonomy, and intrinsic motivation in middle, high school, and college contexts. Results are discussed in terms of Social Cognitive Theory (SCT) and Self-Determination Theory (SDT). There has been a significant positive relationship found between self-efficacy and student autonomy and intrinsic motivation. The research suggests that self-efficacy and student autonomy may increase a student's intrinsic motivation and therefore lead to (1) an increase in activity level in Physical Education classes or academic tasks, (2) a desire to seek out more difficult problems, task, and classes, (3) positively impact a student's behavior at school and (4) transfer across various contexts, either in school or out of school. In addition, the research discusses important practical implications for teachers including; giving specific and accurate feedback, ensuring students have challenging academic tasks, giving students choices within the classroom, and giving student opportunities to elaborate on what they have to say.

As a new teacher, there is always a part of me that is ready and excited to reveal a new lesson plan to my students. One that I hope will be fun, engaging, and create many different learning opportunities. One day during my student teaching internship I was being observed by my vice-principal. I knew she would be there so I had put together an integrated lesson that included technology (music videos), pair and group work, and an opportunity for students to present in the target language, Spanish. I carried out the lesson with very few hesitations or interruptions. I was very impressed with my students and I hoped that my vice-principal would be impressed too. The next morning during my post-observation meeting, she stated that she really liked my lesson plan and activities, but then asked: "What would a classroom look like if each and every student was motivated and engaged in the

lesson?" The question caught me off guard a little, because I had thought all of the students were pretty well engaged. She continued by explaining that during her observation she noticed a number of students involved in side-conversations, texting, and even sleeping. She stated, "I know it can be difficult to motivate and engage a classroom full of 35 adolescents, but there are many different strategies out there you just have to find them." I thanked her for her time as I left the office and continued to think about her question to me: "What would a classroom look like if each and every student was motivated and engaged in the lesson?"

Student motivation is an important and often principle topic of discussion for educators. Reinke (2003) stated, "The impact of lack of school engagement [and motivation] on individuals, as well as on

society as a whole, is significant and may manifest itself in various ways” (p. 413). For example, if students are not motivated or engaged, it could lead to a decrease in their effort and energy on a particular task, direct behavior towards negative outcomes, and lead to a decrease in performance (Barkoukis et al., 2008). According to the National Center for Education Statistics (NCES) report, the high school dropout rate for students between the ages of 16 to 24 years old was 8.0% in 2008. “School dropout is but one consequence of lack of school engagement [and motivation]. This high rate is especially important because school dropout is associated with a number of problems such as teenage pregnancy, gang involvement, criminal activity, and substance use” (Reinke, 2003, p. 417). Reports, such as that of the NCES, are one of many reasons teachers from every level, elementary to postsecondary are concerned, and often frustrated, with how to get students motivated and engaged in the classroom. They often wonder why students are disengaged or disinterested; this frequently manifests itself through inappropriate side-conversations, texting, perusing Facebook, or sleeping in class. While teachers try to incorporate different strategies to increase student motivation, and thus student engagement, in each lesson they quickly find out that there is not a be all end all of strategies or answers for each classroom or individual student.

Often, when teachers think about student motivation, the first, and maybe the only thing that comes to mind, is the use of rewards and punishment. Researchers refer to this type of motivation as extrinsic motivation. This school of thought, popularized by Skinner’s Behaviorism, continues to be evident in classrooms throughout the country. Barkoukis et al. (2008) stated: “Being engaged in activities because of external or internal pressure is

considered an extrinsic form of motivation. In such instances, behaviour operates as a means to an end and not for its own sake” (p.40). While these techniques may be useful in controlling students’ behaviors they do not always lead to increasing student motivation or lasting student engagement or ownership in the learning process. Raffini (1996) stated: “We can coerce students into memorizing their spelling lists with gold stars or a threat of staying after school, but their attention will be focused on earning the stars or avoiding the punishment, rather than learning the value and benefits of the activity” (p. 1).

Current research on the topic of motivation offers different ways to conceptualize and think about student engagement and ownership in the learning process. That is, that one’s own motivation, engagement, and ownership in the learning process is not derived from extrinsic forces, but rather intrinsic forces or values (inward perceptions of the learner). Graham (2003) stated, “[T]he dominant theme in contemporary motivation research revolves around beliefs about ability...and is therefore especially concerned with the situational determinants of motivation and with both self-perception and the perception of others” (p. 1693). Intrinsic motivation is defined as “the engagement in an activity for the pleasure and satisfaction that one experiences while learning, exploring, or trying to understand something new” (Guay et al., 2008, p. 40). Intrinsic motivation has been shown to positively impact a student’s academic experience. Gottfried (1985) stated “Students who are intrinsically motivated pursue a task for its inherent pleasure...In addition, intrinsically motivated students who complete a task have better conceptual understanding of that task relative to externally motivated peers” (Weist et al., 2001, p. 112).

The purpose of this paper is to investigate strategies to increase student intrinsic motivation and answer the question, “How do educators increase student motivation and thus student engagement and ownership in the learning process?” Although there are many variables such as goal setting, teacher’s support, collaborative learning, etc. that impact student motivation and consequently student engagement and ownership in the learning process, this paper will consider two principle variables: student self-efficacy and student autonomy. I have chosen to focus on these two variables, because throughout my research, they appear to be the most common terms when looking at the topic of motivation. In addition, self-efficacy beliefs and student autonomy are both student variables that I, as an educator, can significantly impact in my practice. The first section defines these concepts and then continues the discussion about how each of these two factors can profoundly impact a student’s motivation. The following studies were compiled in December of 2011 using the Educational Resources Information Center (ERIC), PsycheInfo, and library book databases at the Evergreen State College in Olympia, Washington and Pacific Lutheran University in Parkland, Washington. In the beginning the search terms that were used to identify possible studies were “self-efficacy,” “student autonomy,” and “intrinsic motivation.” The discussion concludes with concrete suggestions for effective teaching practice and areas for more research

Literature Review

Self-Efficacy and Motivation

Self-efficacy beliefs are currently one of the most documented areas in motivational research. It is a way that motivational researchers have conceptualized students’ beliefs about their own capabilities to do school work. Self-

efficacy beliefs are defined as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performances” (Linnenbrink & Pintrich, 2003, p. 120). That is, self-efficacy beliefs are concerned with the answer to the question, “am I capable of doing it...?” Now, Zimmerman (2000) cautioned that “With regard to their content, self-efficacy measures focus on performance capabilities rather than on personal qualities, such as one’s physical or psychological characteristics” (p. 83). Namely, individuals evaluate their capability to complete a task by their perceived ability level, not based off of who they are personally, where they come from, or how they feel about themselves in general.

Self-efficacy is often confused or connected with other ideas related to beliefs about the self, such as *self-worth* or *self-esteem*. As stated above, “[s]elf-efficacy concerns student’s beliefs that they can do something like solve a math problem, read a book, ride a bicycle, or tie their shoes. It involves some judgment that the individual can or cannot do these activities...” (Linnenbrink & Pintrich, 2003, p. 120). However, self-worth and self-esteem are more concerned with an individual’s impression of one’s own performance, such as feeling good or bad about themselves because they can or cannot solve an algebraic equation or read in a foreign language. Linnenbrink & Pintrich (2003) stated, “[i]t is crucial that teachers and other school personnel do not confuse self-efficacy with self-esteem” (p. 121). This is important distinction because it has been shown that student’s measure of their self-esteem does not predict an increase in student learning or performance in comparison to self-efficacy (Linnenbrink & Pintrich, 2003).

Self-efficacy has been shown to influence many variables of academic motivation and engagement such as choice

of activities, levels of effort, persistence, and emotional reactions. Zimmerman (2000) stated, “that self-efficacious students participate more readily, work harder, persist longer, and have fewer adverse emotional reactions when they encounter difficulties than do those who doubt their capabilities” (p. 86). According to research by Zimmerman, it has been found that self-efficacy can be highly correlated with an individual’s intrinsic interest in a learning task. Also, individuals’ perceptions of their self-efficacy are likely to increase their persistence to complete a task. Finally, individuals’ self-efficacy can decrease emotional components often negatively associated with motivation such as stress, anxiety, and depression (Zimmerman, 2000).

Contemporary research on student motivation and student engagement continues to recognize the importance self-efficacy. More recently, the research has been expanded on the findings of Zimmerman (2000). The following research studies help to give a perspective on self-efficacy and its impact on student motivation and engagement. They will also give insight into practical strategies and approaches teachers may use to increase student self-efficacy and consequently student intrinsic motivation and engagement.

Caraway et al. (2003) looked at the relationships between self-efficacy, goal orientation, and fear of failure and school engagement in high school students. The study included 123 (61 boys and 62 girls) high school students, ranging from ages 13 to 19 and grades nine through twelve, from a Southeastern metropolitan high school. The study included a wide range of ethnicities: 77 were of European-American ancestry, 29 were African-American, 5 were Latino/a, and 8 were Asian (Caraway et al., 2003, p. 419). Each student was given a self-reported

questionnaire to take home that obtained information about the individuals’ age, gender, and race. In addition, the individual the questionnaires included other data that has been linked to student motivation and engagement such as number of absences and grade point average. Furthermore, the questionnaires contained questions measuring all variables, self-efficacy, goal orientation, and fear of failure, at the same time. The questionnaires were collected two weeks later.

Through their data collection, researchers determined that the study provided support for their hypotheses. The findings suggested that goal orientation positively correlates with a student’s level of engagement while fear of failure, had a partial, inverse relationship with a student’s level of engagement. In terms of self-efficacy, the findings demonstrated support that “the more confident adolescents are about their general level of [capability], the more likely they are to get better grades in school and to be more engaged in various aspects of school” (Caraway et al., 2003, p. 423). In other words, students who believe that they are capable of completing a task will likely be more engaged and demonstrate a higher performance as measured by grades and student absences.

Although the study demonstrated a positive correlation of self-efficacy and goal orientation on student engagement, there are a number of limitations to keep in mind when looking at the research. First, it may not be generalizable across age, gender, ethnicity, and context because the study only takes into account participants from one Southeastern metropolitan high school. Second, the study is limited by its statistical concerns. Caraway et al. (2003) noted that while there is a strong relationship between the variables, it was difficult to determine the causality. Third, the assessments used were self-report instruments, that is, answers

dependent on the individual student's thoughts and perceptions, the study is limited by the one perspective. The researchers suggested, "a more comprehensive picture may have been drawn if a variety of assessments (i.e.: teacher-report and parent-report scales) were used" (Caraway et al., 2003, p. 424).

In a second study, Stevens et al. (2004), examined the role of Self-efficacy on motivation and engagement. The researchers hypothesized that "ability and prior mathematics achievement would influence mathematic performance... mathematics self-efficacy would predict student's motivational orientations...and mathematics self-efficacy, motivational orientation, and mathematics performance would influence a student's plan to take additional mathematics courses" (Stevens et al., 2004, p. 209). The study included 317 ninth- and 100-tenth graders from high school algebra courses in west Texas where more than half described themselves as Hispanic, a third described themselves as Caucasian, and less than five percent declared African American, other, or none.

To carry out the study, researchers brought together the mathematics teachers who would participate in the study and trained them how to collect data and how to carry out the study procedures. Next, they gave each student a questionnaire that included 20 algebraic problems rating their level of confidence in answering them correctly, 30 statements about their motivational orientation and engagement, and one question asking their intention to take additional math classes. Next, to test the students' mathematics performance, they were asked to answer 20 algebraic questions, similar to those they saw on the questionnaire. The test was given during the students' normal 90-minute mathematics class period with most finishing in about an hour.

Through their data collection, researchers determined that the study provided support for their hypotheses that student beliefs and motivation played an important role in academic mathematics achievement and their choice to continue to study math (Stevens et al., 2004, p. 218). One interesting finding was that Hispanic student's mathematics performance was significantly lower than that of their Caucasian classmates. Stevens et al. (2004) suggested that this was most likely due to many Hispanic students' lack of success in mathematic classes prior to this study. They suggested that because mastery experiences are likely to lead to an increase in self-efficacy it was not surprising to find that many Hispanic students reported lower levels of confidence in their ability to successfully answer the mathematics problems, in comparison to their Caucasian peers (Stevens et al., 2004).

Stevens et al. (2004) noted that self-efficacy may play an important role in predicting the performance and motivation of Hispanics and Caucasians in mathematics (p. 219). Students who evaluated themselves with higher self-efficacy also reported higher incidences of motivation. This is most likely due to the fact that those students who have confidence in their ability to solve mathematics problems, likely seek out more difficult problems, tasks, and classes. On the other hand, those students who evaluated themselves with lower levels of self-efficacy also reported lower incidences of motivation. This may manifest itself in students' lack of drive to seek out new challenges or enrolling in other math classes.

Although the study demonstrated a positive impact of self-efficacy on student's motivation and engagement, it is not without its limitations. First, it may not be generalizable across all ages and ethnicities, due to its lack of ethnic diversity. Second,

this study evaluated mathematics self-efficacy, students' motivational orientation/engagement, and intention to take additional mathematics courses through a self-report questionnaire. The use of only self-report questionnaires may have encouraged students to portray themselves in a more positive light. It may be beneficial to include more objective and subjective accounts from teachers or parents. Lastly, treatment fidelity may have been an issue. Although, the researchers attempted to limit this possibility by giving each teacher, who implemented the algebraic test, a script, it is unclear whether or not teacher's prior comments and or knowledge of the study may have influenced the student's confidence or mathematics performance, thus skewing the results.

A third study completed by Walker et al. (2005) looked at the relationship of identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. The study recruited 191 volunteers from a large Southwestern University from two undergraduate courses. There were an equal number of men and women with ages ranging from eighteen to twenty-two years old with many different racial and ethnic make-ups. Through individual questionnaires researchers found that intrinsic motivation, self-efficacy, and identification with academics contributed to a positive result of cognitive engagement (i.e. the amount and type of strategies the student uses to complete a task), while extrinsic motivation was the only variable that resulted in a negative cognitive engagement. Walker et al. (2006) also noted that a strong perception of one's ability can positively influence one's motivation to complete tasks.

Although the study demonstrated a positive correlation between self-efficacy and a student's cognitive engagement, the

study is not without its limitations. First, the sample size of the participants was small, only 191 individuals from a Southwestern University. This makes it impossible to generalize this study to every school around the country. Also, because the study only looks at university student's ages, 18 -22, it is not clear whether or not the results would be similar or different for younger adolescents. Second, each of the variables in this particular study were measured simultaneously. This means that each variable such as identification, self-efficacy, and motivation were viewed separately, but there is a potential that there is a relationship between them.

In yet another study, Gao et al. (2010) looked at the relationship of expectancy-related beliefs (beliefs about an individuals' ability to complete a task and the expectations for success) on self-efficacy, and therefore how self-efficacy would affect motivated behaviors in physical education classes. They study included 225 participants, from sixth to eight grade, enrolled in a public school in the Southern region of the United States. The students came from middle – or upper- class families and each student had one of nine physical education classes. Each student had approximately 60 minutes to participate in the physical activities of the class that were taught by veteran teachers (10 years or more experience).The study was conducted by using two self-reported surveys (one at the beginning and one at the end, two weeks later) in which students answered questions about their motivational beliefs and used accelerometers with waistbands to record the physical activity levels of each participant during class.

As anticipated, Gao et al. (2010), found that “self-efficacy exerted the largest direct effect on physical activity levels” (p. 209). In other words, individuals with greater self-efficacy were more likely to be

more physically active (e.g. participate in the particular task/activity) when compared to those individuals with low self-efficacy. In addition, researchers found that self-efficacy also facilitated the effect of outcome expectancy (motivation) on physical activity levels (Gao et al., 2009). An individual's perception of a potential positive outcome will increase self-efficacy, which consequently, will increase activity levels.

Although the study demonstrated a strong relationship between self-efficacy and motivation, one must recognize some limits of the study. First, it may not be generalizable across age, gender, ethnicity or cultural context because the study only looks at participants from one school in the Southern region of the United States. Second, as there was no control group, which makes it difficult to know if the use of physical machines being used to record levels of physical activity skewed the results as one may work harder knowing they are being physically rated. Third, although this was a short study statistical mortality was an issue as 15 students dropped out.

A final study by Skaalvik and Skaalvik (2008), looked at Self-concept and Self-efficacy in mathematics and its relation to motivation and achievement. They study examined if mathematics self-perception predicted an increase in achievement as well as if achievement could be explained by goal orientation, interest, or self-esteem (Skaalvik & Skaalvik, 2008, p. 114). The researchers conducted two year-long studies, one in the United States and one in Norway. The participants in Norway were 246 (129 girls and 117 males) students in 10th grade at four middle schools. The participants in the United States were 484 (246 girls and 238 males) in 11th grade in six high schools. All variables (e.g. self-efficacy) were measured by means of a self-reported questionnaire by trained research assistants three times. Data

was collected three times over a one year period beginning at the end of the school year, in June. Student achievement was recorded by means of final year grades in 9th, 10th, and 11th grades.

After all data was analyzed, Skaalvik and Skaalvik (2008) found that "self-perception [self-concept and self-efficacy] predicts subsequent achievement over and above the prediction that can be made from prior achievement" (p. 117). That is, the results indicate that a student's motivation and performance in math may be related to a student's self-perceived (self-efficacy) abilities in math.

Although the study demonstrated a relationship between self-efficacy and motivation, one must recognize some limits of the study. First, it may not be generalizable across age, gender, ethnicity, culture etc. due to its limited sample size and contextual factors. Second, participants in Norway were transferred from middle school to high school during the study. This contextual change may have impacted a student's self-perception (self-efficacy), feeling either more confident or less confident depending on their personal experience, which could skew the results.

Throughout these studies themes pointed to a pattern to be replicated. Although an individual research study cannot give a comprehensive look at the relationship between self-efficacy and intrinsic motivation, when considering many studies it suggests that an individual's strong self-efficacy will likely increase a student's intrinsic motivation (Caraway et al, 2003; Gao et al., 2010; Skaalvik & Skaalvik, 2008; Stevens. et al., 2004; Walker et al, 2005). The research also suggests that mastery experiences as well as an individual's perception of a potential positive outcome is related to a higher levels of self-efficacy (Gao et al., 2010; Stevens. et al., 2004). In addition, the research has demonstrated that

an increase in self-efficacy is directly related to a student's intrinsic motivation and an increase in higher activity levels (e.g. active participation in class tasks/activities) in Physical Education classes or academic tasks (Gao et al., 2010; Skaalvik & Skaalvik, 2008), a desire to seek out more difficult problems, tasks, and classes (Stevens et al., 2004), and be more engaged in classes as well as get better grades (Caraway et al., 2003).

Autonomy and Motivation

Autonomy support is another area of motivational research that has been documented significantly over the last twenty years. Many theorists and researchers have depended on one principle theory when looking at autonomy's relationship with motivation: Self-Determination Theory (SDT). Within the framework of SDT, autonomy is defined as, "actions that are self-endorsed and based on one's integrated values or interest" (Chirkov & Ryan, 2001, p. 619). In other words, an individual's perceived autonomy will increase an individual's intrinsic motivation. Chirkov and Ryan (2001) stated, "According to SDT, autonomy is a basic human need, and opportunities to experience autonomy are critical to well-being" (p.619). The theory proposes that in order to function well within society or on a given task one must feel the sense of autonomy, which may require a sense of choice, congruence, and initiative (Chirkov & Ryan, 2001, p. 619).

In a classroom setting, student motivation and engagement are very important because "[they] function as a behavioral pathway through which students' motivation processes contribute to their subsequent learning and development, including the skills they develop, and the grades they make" (Jang et al., 2010, p. 588). On the other hand, students who are not motivated and not engaged tend to be

distracted, give up, or not try very hard. Autonomy support research, mostly in North America by Jang et al., (2010), had revealed positive relations between parent- and teacher- autonomy support (e.g. level of control given over to the child/student) and students' intrinsic and autonomous self-motivation in school. The following contemporary research studies help to give a perspective on autonomy and its relationship on student motivation and engagement.

In a study by Chirkov and Ryan (2001), researchers investigated supports for autonomy in two diverse cultures, Russia and the United States. They examined, "whether students in both samples construe the construct of autonomy-support and control by parents and teachers in equivalent ways; compare mean levels of autonomy – support versus control; and investigate the within-culture effects of these constructs on well-being and school motivation" (Chirkov & Ryan, 2001, p. 622). The total number of participants was 236 students (43 boys and 77 girls from Russia, and 49 boys and 67 girls from the United States). Participants' ages ranged from 16 to 19.

To collect data, researchers exclusively used a self-reported questionnaire that was translated into both Russian and English. The constructs reported were demographic variables, perceptions of parental autonomy-support and control questionnaire, perceptions of teacher's autonomy support and control, and psychological well-being (Chirkov & Ryan, 2001, p. 623). All participants were volunteers and received only one opportunity to answer the questionnaire during the study.

Researchers noted that autonomy-support of parents in both Russia and the U.S. was similarly viewed by each student, regardless of their context (Chirkov & Ryan, 2001). In addition, they found that the more parental autonomy support an adolescent received there was a likely increase in an

adolescent's well-being. Also, "both teacher and parent autonomy-support affected academic self-regulation, and were associated with more integrated and/or intrinsic motivation in school" (Chirkov & Ryan, 2001, p. 631). In other words, student perceived autonomy increased student's ability to be academically more aware and thus more motivated. Lastly, researchers determined while school motivation is impacted by both teachers and parents, however, teacher autonomy-support had a stronger relationship with intrinsic motivation and identification with academic goals.

Although the current research demonstrates a link between student autonomy and motivation it is not without its limits. First, the study cannot be generalized across all age groups, gender groups, cultures, or nations because it only looked at one high school in both the United States and Russia. More research would be necessary around the world and in each particular category. Second, the study was conducted using only one set of participant self-report questionnaires, which are subjective. Observational data of teacher's behavior, speech, and classroom structure may be helpful to give a fuller picture to how autonomy-support looks within a classroom.

Another study by Cock and Halvari (2001), examined the student's perception of autonomy at school, impact on school performance, and satisfaction on the motive to achieve success. The study included a total of 110 third to sixth grade students (52 boys and 52 girls) from a small town in Norway. Researchers collected data using self-reported questionnaires that asked questions on achievement motives (goals), emotional tones (attitudes), and relative autonomy. A couple of weeks later, students were tested in math and asked to respond to their overall satisfaction at school.

Through statistical analysis, Cock and Halvari (2001), determined that there was an important relationship between motivation and autonomy-support. They stated, "the motive to achieve success seems to be one of the significant factors underlying the pupil's self-determined or intrinsically motivated behavior at school" (Cock & Halvari, 2001, p. 77). In other words, student's autonomy to achieve success will impact a student's intrinsic motivation. This is consistent with other research that states individuals with higher motivational orientations are more likely to be intrinsically motivated (Caraway et al., 2003).

While the research demonstrates a relationship between autonomy and motivation in this study it is not without its limits. First, it cannot be generalized across age, gender, and cultures because the study only looked at one school in a small town in Norway and may not be transferable to a United States context due to cultural differences. Second, the study does not outline how the participants were selected to participate. Therefore it is possible that statistical regression may be a problem due to its small sample size. That is, there is a probability that those students chosen would be either on the higher end or the lower end of the curve thus, skewing the results towards one group of participants to another.

In yet another study, Hagger et al. (2009), examined whether perceived autonomy support from Physical Education (PE) teachers is likely to have a significant effect on autonomous motivation in a PE context (p. 694). The study included participants from high schools in Great Britain, Estonia, Finland, and Hungary. All participants were recruited from various government-run high schools in their country. There were 404 British participants, 61 Estonian participants, 158 Finnish participants, and 286 Hungarian participants.

Through the use of three self-reported questionnaires given over a 5 week period, researchers measured student's perceived autonomy support (e.g. level of control) from PE teachers and autonomous motivation (e.g. intrinsic and extrinsic motivation), autonomous motivation in a leisure-time physical activity context, and lastly, physical activity (Hagger et al., 2009).

This study found, with other research they reviewed, that perceived autonomy support has is likely to have a strong positive relationship on autonomous motivation as found in PE contexts. Also, an important finding from this study is that perceived autonomy support from teachers has a greater impact on autonomous motivation, in comparison with parents, both inside and outside of the PE context. This suggested that the perceived autonomy support from teachers may be transferred from an academic context to a more leisure-time context or environment.

Although Hagger et al. (2009) demonstrated a strong connection between autonomy support and autonomous motivation there are some limits that must be acknowledged. First, although the researchers have a fairly wide reaching study in terms of cultural backgrounds as well as a large sample size it would still be impossible to generalize this study across the board. More research is needed to determine the impact of autonomy support across minority populations as well as other age groups. Second, all data was self-reported, including the information about physical behavior and past behavior. As this data is subjective, it could be strengthened by also measuring this variable through observation or activity monitoring, such as a heart-rate monitor.

A fourth study by Jang et al. (2010) investigated the "relation between these two aspects [autonomy-support and structure] of

teachers' instructional styles and the relations of each to students' classroom engagement" (p. 591). The study included 133 teachers and 2,523 students from nine public high schools in the Midwest. Participants were in ninth to eleventh grade, 54% were female and 46% were male; they were 47% Caucasian, 45% African American, 6% Hispanic, and 2% Asian American (Jang et al., 2010, p. 591). Researchers showed up to each classroom unannounced to observe and rate teacher's instructional style and student's classroom engagement. They also took the last two minutes of the class to give a brief, four-question, survey to the students asking them to rate their overall class experience.

In the study, Jang et al. (2010) noted that there is a strong relationship between teacher-provided autonomy support and structure. In addition, teacher-provided autonomy support and structure demonstrated a positive relationship on a student's classroom engagement. That is, it is not just autonomy support that shows a positive correlation with student engagement in the classroom, but teacher classroom structure as well. They also cautioned that based on the findings teachers must incorporate ways to implement elements of classroom structure that, not only help to structures the lessons or tasks, but also support a student's autonomy at the same time (Jang et al., 2010).

While Jang et al. (2010) demonstrated that autonomy support and structure are likely to have a positive relationship with student engagement; there are some limitations that must be acknowledged. First, because the sample only included high school students is not generalizable across age, gender, ethnicity, and culture. The researchers stated, "In high school, teachers expect greater personal responsibility and self-regulation from their students, at least compared to what is expected from

elementary students” (p. 598). Second, because researchers appeared in teachers’ classrooms unannounced it could be possible that teachers changed their instruction or lesson due to the raters being in their classroom. Lastly, it is possible there was observer bias in the rating of student behavior. They claimed that while observers were not informed of the study’s hypothesis and the observers scores of a teacher’s pedagogical strategies did not appear to impact a student’s self-reported engagement, observer bias may still have happened.

In a final study by, Guay et al. (2001), researchers looked at the linkage between autonomy support, intrinsic motivation, and perceived competence. The study included fifth-grade students (215: 94 boys, 94 girls, and 27 participants without sex identification). To record data, researchers had students complete self-report questionnaires concerning their perceived academic competence and intrinsic motivation. In addition, teachers completed self-reported questionnaires measuring their orientations toward control versus autonomy in their instructional interactions. Each student and teacher was assessed twice, at the beginning and the sixth month interval, during the yearlong study.

Through data collection, Guay et al., (2001) found there was a significant correlation between teacher autonomy support and the motivation orientation of the students (p.648). As anticipated, teacher’s autonomy support did not relate significantly to student competence. However, teacher’s autonomy support did demonstrate a positive relationship to students’ motivational orientations (goals).

Although Guay et al. (2001) found a strong connection between autonomy support and student motivation, the study is not without its limits. First, it may not be generalizable across all ages and cultures, as the study only deals with fifth-graders from

one Colorado public school. Second, Guay et al. (2010) stated, “even though we used a longitudinal design, it is nevertheless inappropriate to make strong causal inferences” (p.649). It would be important to do other longitudinal studies that looked at the causal effects between motivation and teacher autonomy support and motivation and perceived competence.

Throughout these studies, themes pointed to a pattern to be replicated. Once again, although an individual research study cannot give a comprehensive look at the relationship between student autonomy and intrinsic motivation, when considering many studies it suggests that student autonomy will likely increase a student’s intrinsic motivation, and consequently, their student performance (Chirkov and Ryan, 2001; Cock & Halvari, 2001; Guay et al., 2001; Hagger et al., 2009; Jang et al., 2010). Through the research it has been found that both parental and teacher support (e.g. level of control given over to the student) will likely increase a student’s autonomy (Chirkov and Ryan, 2001; Jang et al., 2010). In addition, the research demonstrated that an increase in student autonomy will likely increase a student’s level of intrinsic motivation (Chirkov and Ryan, 2001; Cock & Halvari, 2001) which may positively impact a student’s behavior at school (Cock & Halvari, 2001) as well as transfer across various contexts, either in school or out of school (Hagger et al., 2009).

Discussion

The purpose of this current literature review was to gain insight and to answer the research question, “How do educators increase student motivation and thus student engagement and ownership in the learning process?” Online research using educational and psychological databases found that two of the most commonly researched and studied variables in motivational research

are self-efficacy and student autonomy. By looking at many different empirical research studies concerning these two variables, all together, the research seems to suggest that there is a positive relationship between self-efficacy and student autonomy and intrinsic motivation (Caraway et al, 2003; Chirkov & Ryan, 2001; Cock & Halvari, 2001; Gao et al., 2009; Hagger et al., 2009; Jang et al., 2010; Skaalvik & Skaalvik, 2008; Stevens. et al., 2004; Walker et al, 2006). In other words, this literature review suggests that by positively impacting student self-efficacy and student autonomy it will likely increase a student's intrinsic motivation which will help to ensure students are more engaged, and take ownership, in the learning process.

The findings of these studies lead to a number of practical implications for teachers that are detailed below.

Recommendations for Teachers

Based on the research it is clear that there is a relationship between self-efficacy and intrinsic motivation as well as student autonomy and intrinsic motivation. Also, by increasing student intrinsic motivation, it is likely that a teacher will be able to increase a student's engagement and encourage student ownership in the learning process. It is important to note, however, that within this literature review it is not possible to identify specific pedagogical interventions made during the studies because almost all of the studies' results relied on self-report data from the participants. In other words, the studies did not focus on specific intervention strategies by teachers that may help to support self-efficacy or student autonomy. While there are no interventions, what these studies do show is a strong relationship between self-efficacy and intrinsic motivation as well as student autonomy and intrinsic motivation. Therefore, I'm going to frame some practices that may be beneficial to support

self-efficacy and student autonomy in the classroom:

1.) *Give specific and accurate feedback.* The research encourages increasing a student's self-efficacy which in turn is likely to increase a student's intrinsic motivation (Caraway et al., 2003; Gao et al., 2009; Skaalvik & Skaalvik, 2008; Stevens et al., 2004). Therefore, it is important for teachers to give specific and accurate feedback which offers information to the student about their skills. This means that instead of stating, "great job" or "nice work on the math problems" that you provide specific feedback about how the student did a great job. In addition, teachers must ensure students have an accurate understanding of what level of skills or competency they have attained. Linnenbrink and Pintrich (2001) stated, "[teachers] should not provide positive feedback when not deserved (p. 135). In other words, the feedback should highlight areas of improvement needed and opportunities for development.

2.) *Ensure students have challenging academic tasks.* Student's self-efficacy beliefs not only develop from specific and accurate feedback, but through mastery experiences and the potential outcome of a positive experience (Gao et al., 2010; Stevens. et al., 2004). Therefore, it is important for teachers to ensure that they are creating challenging academic tasks for each student. This will mean teachers will need to recognize the Zone of Proximal of Development (ZPD) of each student and differentiate the instruction based off of the readiness of each student.

3.) *Giving students choice within the classroom.* As research suggests, an increase in a student's autonomy is likely to lead to an increase in a student's intrinsic motivation (Chirkov & Ryan, 2001). Therefore it is important for teachers to structure choice within the classroom. Now

this does not mean that students can choose whatever they want, whenever they want, but rather it means that within the classroom or lesson structure students have the ability to choose something that interests them. For example, if a teacher wants students to demonstrate what they have learned about World War II a teacher might give students the choice to choose the way they exhibit their learning. This may be through a group presentation, song, or an essay. Tomlinson (2005) stated, “[Product choices] should endeavor to capture student interest. In fact, their flexibility is what makes them so potentially powerful in classrooms sensitive to learner variance” (p. 11). Giving student’s options and choices may increase their perceived autonomy and in turn will likely increase their intrinsic motivation.

4.) *Reiterate and give opportunities for students to elaborate on what they have to say.* In the research they talk about student autonomy and how it may lead to an increase in intrinsic motivation and thus positively impacting student’s behavior (Cock & Halvari, 2001). It is important for teachers to reiterate and expand on student’s own experiences, expertise and perspectives. Reiteration helps the student understand that you respect and value their opinion or perspective. It also, increases the student’s autonomy by giving them the confidence that what they have to say is important. Moreover, giving students the opportunity to share, and elaborate, on what they have to say can help to engage them more in the learning process as well as take ownership on what they are learning.

Future Research

There are at least two areas for future research to consider when looking at the data within this literature review. First, almost all of these studies relied on self-report questionnaires. Depending on one perspective, and in this case the subjective

perspective of the participant, can be misleading. More research is needed using more objective means. For example, gathering data using observational methods by researchers, teachers, or parents. By including objective data it may give a more holistic picture of self-efficacy and student autonomy as well as confirm more strongly the accuracy of the self-report questionnaires. Second, most of the studies reviewed looked at self-efficacy or student autonomy in relation to many other motivational variables. More research must be done that specifically looks at just self-efficacy or student autonomy in relation to intrinsic motivation. Isolating the specific motivational variables in relation to intrinsic motivation may allow researchers to determine a more causal relationship. In addition, determining a causal relationship between the specific motivational variables and intrinsic motivation would give teachers better insight into what motivational variables they may need to focus on within their classroom.

Finally, this literature review has identified a few strategies that may help to support student self-efficacy and student autonomy. While the research suggests that these strategies may be effective in the classroom, one question still remains: how does a current or future teacher implement these strategies effectively in the classroom? First, if I as a teacher am going to support student self-efficacy using specific and accurate feedback, I will need to do more research on specific methods of giving feedback (e.g. rubrics) that will communicate clearly my expectations as well as support each student’s self-efficacy. Second, if I am to support student autonomy within my classroom using choice I will need to do more research on ways of offering choice in the classroom as well as identify when choice is an effective strategy for engaging students or not.

References

- Barkoukis, V., Tsorbatzoudis, H., Grouios, G., & Sideridis, G. (2008). The assessment of intrinsic and extrinsic motivation and amotivation: Validity and reliability of the Greek version of the Academic Motivation Scale. *Assessment in Education: Principles, Policy & Practice*, 15(1), 39-55. doi:10.1080/09695940701876128
- Caraway, K., Tucker, C. M., Reinke, W. M., & Hall, C. (2003). Self-efficacy, goal orientation and fear of failure as predictors of school engagement in high school students. *Psychology in the Schools*, 40(4), 417-427. doi:10.1002/pits.10092
- Chirkov, V. I., & Ryan, R. M. (2001). Parent and teacher autonomy-support in Russia and U.S. adolescents: Common effects on well-being and academic motivation. *Journal of Cross-Cultural Psychology*, 32, 618-635. doi: 10.1177/0022022101032005006
- Cock, D., & Halvari, H., (2001). Motivation, performance and satisfaction at school. *Trends and Prospects in Motivation Research*, 65-84. Retrieved from <http://sited.ebrary.com/lib/evergreen/Doc?id=10053382&ppg=90>
- Gao, Z., Lee, A. M., Kosma, M., & Solmon, M. A. (2010). Understanding students' motivation in middle school physical education: Examining the mediating role of self-efficacy. *International Journal of Sport Psychology*, 41(3), 199-215. Retrieved from EBSCOhost.
- Graham, S. (2003) Encyclopedia of Education Second Edition (Vol. 5, pp. 1690-1695). New York, New York: MacMillan Reference USA.
- Guay, F., Boggiano, A. K., Vallerand, R. J. (2001). Autonomy support, intrinsic motivation, and perceived competence: Conceptual and empirical linkages. *Personality and Social Psychology Bulletin*, 27, 643-650. doi: 10.1177/0146167201276001
- Hagger, M., Chatzisarantis, N. L. D., Hein, V., Soos, I., Karsai, I., Lintunen, T., Leenmans, S. (2009). Teacher, peer and parent autonomy support in physical education and leisure-time physical activity: a trans-contextual model of motivation in four nations. *Psychology and Health*, 24, 698-711. doi: 10.1080/08870440801956192
- Jang, H., Johnmarshall, R. Edward, D. L., (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology*, 102, 588-600. doi: 10.1037/a0019682
- Linnenbrink, E.A., Pintrich, P. R. (2001). The role of self-efficacy beliefs in student engagement and learning in the classroom. *Reading and Writing Quarterly*, 19, 119-137 doi: 10.1080/10573560390143076
- Raffini, J. P., (1996). *150 ways to increase intrinsic motivation in the classroom*. Boston, MA. Allyn and Bacon.
- Reinke, W. M., Hall, C., (2003) Self-efficacy, goal orientation, and fear of failure as predictors of school engagement in high school students. *Psychology in the Schools*, 40(4), 417-427. Doi:10.1002/pits.10092
- Skaalvik, E. M., & Skaalvik, S. (2008). Self-concept and self-efficacy in mathematics: relation with mathematics motivation and achievement. In Olsson, F. M. (Eds.), *New developments in the psychology of motivation* (pp. 105-128). Hauppauge, NY: Nova Biomedical Books.
- Stevens, T., Olivarez, A. R., Lan, W. Y., & Tallent-Runnels, M. K. (2004). Role of mathematics self-efficacy and motivation in mathematics

- performance across ethnicity. *Journal of Educational Research*, 97(4), 208-221. doi:10.3200/JOER.97.4.208-222
- Tomlinson, C.A., & Strickland, C.A., (2005) *Differentiation in practice: a resource guide for differentiating curriculum*. Alexandria, VA. ASCD.
- U.S. Department of Education. (2010). *Trends in High School Dropout and Completion Rates in the United States: 1972-2008*. Washington, DC: Chapman. C. Retrieved from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011012>
- Walker, C. O., Greene, B. A., Mansell, R. A., (2005) Identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. *Learning and Individual Differences*, 16, 1-12. doi: 10./j.lindif.2005.06.004
- Wiest, D. J., Wong, E. H., Cervantes, J. M., Craik, L., & Kreil, D. A. (2001). Intrinsic motivation among regular, special, and alternative education high school students. *Adolescence*, 36(141), 111-126. Retrieved from EBSCOhost.
- Zimmerman, B.J., (2000). Self-efficacy: an essential motive to learn. *Contemporary Educational Psychology*, 25, 82-91. doi: 10.1006/ceps.1999.1016

Examining Teacher's Differential Treatment

This paper reviews research relevant to teacher's differential treatment of different students in the classroom. Teacher's differential treatment of students in the classroom can lead to students having poor attendance, boredom, and a lower level of perceived academic self-efficacy. These studies show that a) because of teachers perceptions of students, students may be treated differently; b) Students are acutely aware of teachers perceptions and may conform to these expectations; c) teachers favor high achieving students over low achieving students; d) low expectation teachers perception of their students were found to be weak and more negative; e) students who were treated differently lost their relatedness (connection) to the class and did not feel they were important; f) When teachers held a low perception of a student they may direct hostile attitudes (sarcasm, prejudice, and verbal abuse) toward these students. The concluding section of this paper looks at different methods of changing teacher's different treatment of students and suggested follow up research on the subject.

The classroom model of the past was one that excluded students with learning disabilities. Today, students of diverse learning abilities exists together in the classroom. This inclusion causes teachers to employ different classroom organization and management in order to meet the needs of the diverse classroom. This brings with it new problems of having to deal with students of all learning abilities (Babad, 1993). Teachers today have to deal with behavioral problems (talking out of turn, disruptive behavior, or other off task behaviors) as well as learning disabilities in reading, writing, language, and math. Along with the pressure associated with No Child Left Behind and high stakes testing, teachers now have to deal with this new set of problems. Today students with low ability are frequently seen as a burden and are treated differently. Babad (1993) stated:

Teachers have a positive sense of control about high achievers, believing

that they can monitor these students and lead them to attain desired objectives. Teachers feel a relative lack of control over low achievers, because it is difficult to control their behavior and to discipline them, and because it is even harder to lead them to impressive achievements. Therefore, teachers tend to minimize the initiatives of low expectancy students and to be far more directive in dealing with them. This creates a vicious cycle in which low achievers become more passive and dependent, further justifying teacher's behavior toward them, without reducing teacher's frustration and disappointment. (p. 354)

In the classroom teachers with diverse learners are likely to treat students differently which has been shown to affect student performance. Students acquire information about their own abilities through the teacher's differential treatment of high and low achievers, and subsequently perform

according to these perceived expectations (Brattesani, Weinstein, & Marshall, 1984). As teachers respond more encouragingly to high achieving students, giving them more praise and encouragement these students have a more positive outlook in their learning abilities. Teacher expectation research began with the seminal work of Robert Rosenthal in 1968. This research appeared to show that students performed at teacher expectations. Rosenthal suggested that when teachers believed some of their students were especially capable, teachers worked with them more to advance their educational growth. Rosenthal's methodology was criticized by many, but no one doubted that teacher expectations existed or played an important role in student achievement (Rubie-Davies 2010).

Building on this and other research, Rubie-Davies (2010) points out that Weinstein (2002) discovered that particular teaching methods appear to be linked with high and low differentiating teachers. High differentiating teachers view students as high and low achievers. For example, high differentiating teachers are more likely to treat intelligence as being fixed. Low achieving students are grouped by fixed ability (the perception that a student can only attain a certain level of academics), high emphasis is placed on performance goals and extrinsic rewards are put into practice. Negative behavior management is administered in these groups. High differentiating teachers often compare (publicly) low achieving students to high achieving students, where high achieving students are rewarded and low achieving students receive negative comments.

This review of research looks at answering the question of how to change

teacher's differential treatment toward students. To illustrate methods of changing this behavior, this review will encompass the realm of teacher's perceptions of students and the effect it can have on the student's education. It will look at consequences of student's perceptions of teacher's behavior and biases. It will take into account the different expected standards (expectations) teachers have for diverse groups of students. In the end, by making teachers aware of their differential treatment, this review will look at different strategies that can be employed to bring about an awareness of, and positive changes in teacher's differential treatment of students.

Literature Review

Rubie-Davis (2010) looked to further extend the understanding of the characteristics of high expectation (HiEx) teachers, (teachers who set a high goal of learning expectations for their students) and low expectation (LoEx) teachers, (teachers who set a low goal of learning expectations for their students) by studying how they perceived a range of student attributes and how these perceptions would affect the students. Students in HiEx and LoEx classes were divided into equal thirds according to ability within each class (high, average, and low) and further analyses by ability group within HiEx and LoEx classes showed that expectations were indeed for all students of both HiEx and LoEx. (Rubie-Davies, 2006). In other words, HiEx teachers had high expectations (or standards) for high, average, and low ability students while LoEx teachers had low expectations (or standards) for each ability group.

This study found that HiEx teachers had a statistically significant

and positive correlation between teacher's perceptions of all student attitudes and their expectations. Rubie-Davies (2010) states:

Teacher perceptions of perseverance, independence, reaction to new work, interest in schoolwork, participation in class, motivation, confidence, self-esteem, classroom behavior, relationships with peers, relationships with the teacher, parent attitudes to school, home environment, and completion of homework were moderately correlated with teacher's expectations for their students. (p.12)

The correlation between teacher perceptions of student engagement and teacher's expectations was strong. The HiEx teachers had very positive views of their students that reflected their positive expectations (Rubie-Davies, 2010). This pattern did not hold true for LoEx teachers. This study found there were fewer significant correlations between teacher's perceptions of student attitudes and teacher's expectations. One small, negative correlation was found. LoEx teachers expectations did correlate negatively with interest in schoolwork, motivation, classroom behavior, peer relationships, teacher relationships, and homework completion. What this means is that teacher's expectations for this group of students did not relate to their perceptions of some student characteristics. These LoEx teachers appeared to believe their students tried hard, behaved in class, and related well to others, even though their expectations for student achievement were low (Rubie-Davies, 2010).

This study supports the argument that high expectation teachers hold positive and strong connections between student perceptions and expectations. This can lead to teachers working toward further advancing positive student attitudes, which can lead to stronger motivation, engagement, and success in school (Rubie-Davies, 2010). Low expectation teachers gave credit to students for trying hard, behaving well in class, and relating well to others. Yet, they held low expectations for every student in their class. This may mean that LoEx teachers hold the view of entity intelligence, which means the student's intelligence is fixed and unchangeable. Teachers who hold this view feel that they can have very little impact on what students learn.

One main concern with this study is the limited number of teachers participating in the study. There were 6 high expectation teachers and 3 low expectation teachers. Rubie-Davies (2010) argues even though the participation size was small, it still provided the evidence of the need to shift the attention from student-focused scenarios to teacher and their expectations.

It must be noted that differential treatment does not refer to the sensitive recognition of children's diverse interests, learning styles, and needs, but rather to regular differences in educational opportunities, teacher-student interaction patterns, and the classroom emotional climate that favor high achieving students over low achieving students (Kuklinski & Weinstein 1999).

Many studies have looked at the differences between teacher and student perceptions in the classroom. The diverse underpinnings of high versus

low differential treatment practices would appear to reflect deeply held feelings of student performance, personality, and teaching philosophy, which are not likely to change in the near future (Kuklinski & Weinstein 1999).

In one such study, Lee and Porter (1990) studied the concept of bounded rationality and its practice in classroom teaching. They describe bounded rationality in human beings can be described as how complex a problem is and a person's perception of the method to solve it. Using this rationale teachers develop expectations and perceptions of individual students, groups of students, or whole classes based on information received from past experiences in teaching, information from other school personnel, past behavior or achievement, and present behavior or achievement (Lee & Porter 1990). Through these experiences teachers label students, using bounded rationality to form their perception. This study suffers due to its simplistic form, as it is difficult to assess the complexities of real-world situations. It leaves open questions as to the frequency of teacher behavior and consistency to be considered as rational, and how can one decide what behavior is rational for a given expectation?

Kuklinski and Weinstein (1999) presented *Perceptions of Differential Teacher Treatment of High and Low Achievers*. This study explored the stability of student's achievements and how they differ in classrooms, where differential teacher treatment favored high achievers over low achievers, as reported by students. This study also looked at whether age and time of year (fall or spring) made a difference in student perception of teacher differential behavior. Two samples were used for the

study. 464 children and 48 teacher participants were used in sample one, sample two consisted of 138 children and 12 teachers in grades 1, 3, and 5. Children's perceptions of 30 teacher behaviors towards hypothetical high and low-achieving students were measured using a shortened Teacher Treatment Inventory form to construct four positive treatment behaviors and four negative behaviors, which were found to differentiate significantly between the treatment of high and low achievers.

The results found that students had the ability to detect the differences in teacher differential behavior towards high and low achieving students. The student's perception was that high achieving students consistently received more positive feedback and were held to higher expectations. Low achieving students received less positive feedback and were held to lower expectations. These perceptions remained consistent throughout the year and throughout the grade range in classrooms where differential treatment was more pronounced early in the year. This suggests that early on students have an understanding of distinctive differences in teacher treatment towards high and low achievers.

These findings are consistent with Babad's (2005) study of students ability to detect teacher's differential behavior. Babad (2005) took 10 second video clips of 28 high school teachers, which showed their nonverbal behavior while lecturing to their entire classrooms. These video clips were then shown to 27 female 10th grade high school students, and 19 adults (15 females) in their 20s and 30s. Each participant viewed the same video and then rated each teacher on a scale from 1-9, (1=equitable teacher, 9=differential teacher) on

whether the teacher would treat all the students the same or would treat high versus low-achieving students differently. Babad (2005) determined that through these non-verbal, short video clips, students were able to predict teacher's differential treatment. The students were also able to predict the teacher's gap in emotional support that was given to high achieving and low achieving students. This study suggests that students are very proficient at picking up different, non-verbal cues from teachers, which can relay both positive and negative perceptions to students. Two areas of concern with this study was the fact that it was done in Israel and the participants were all female. Since the study was done in Israel it could bring up concerns of cultural differences between students in Israel and the United States. The author did not explain why he only used female participants in the study. If this study were to be replicated, it would better represent a school population if the participants were of a mixed gender.

Combining these two studies, suggest that student's perceptions of how teachers treat high and low achieving students differently, is very acute and accurate.

Teacher Expectations

Further support is supplied by Rubie-Davies (2006) in a study that examines understanding characteristics of high expectation (high learning goals) and low expectation (low learning goals) teachers affected the learning environment of the students. Teachers in this study were asked to place each student at the reading level they were expected to be at by the end of the year. Students were then assessed as to their reading abilities to have a comparison

point at the end of the year. Teacher's perceptions of perseverance, independence, reaction to new work, interest in schoolwork, participation in class, motivation, confidence, self-esteem, classroom behavior, relationships with peers, relationships with the teacher, parent attitudes to school, home environment, and completion of homework were taken into account. Rubie-Davies (2006) found that at the beginning of the year, there were no differences in student self-perceptions. Yet, by the end of the year, the students with high-expectation teachers increased to some extent, while the intellectual self-perceptions of the students with low-expectations teachers decreased dramatically. Their change in self-perception came to match the teacher's expectations over the year. A few issues with this study were the lack of participant size, variation in teacher experience, and variations across the groups in terms of ethnicity and beginning of year achievement. The study size did not allow for isolation of these variables in this study.

Building on the previous study, Rubie-Davies, (2010) compared how teachers with very high (or very low) expectations for all their students would rate their student's personal attributes. In this study teachers, at the beginning of the year rated their expectations for each student. The high expectation teachers group consisted of six teachers whose expectations for end-of-year performance were significantly above their student's level of achievement at the beginning of the academic year and whose students made statistically significant achievement gains over the year. The average-progress teachers consisted of three teachers whose expectations were significantly above

their students' level of achievement at the beginning of the academic year, but whose students did not make statistically significant gains over the year. The low expectation teachers consisted of three teachers whose expectations were significantly below their student's academic achievement at the beginning of the academic year and whose students made no or small relative gains over the year. Teacher expectations were then compared with student achievement throughout the year.

Rubie-Davies (2006) found that low expectation teachers perception of their students and the attributes were found to be weak and more negative. In contrast, high expectation teachers rated their students higher on the student characteristics and attributes than the low expectation teachers rated their students. The students in the high expectation class did not meet the teacher's expectations, but their achievement was much higher than the low expectation students was. This study shows that high expectancy teachers construct a positive learning environment with high expectations. By doing so, they are sending a message to the students that they are valued as a learner and a person. High expectation teachers are more likely to promote positive attitudes and attributes. In contrast, students with low expectation teachers, academic self-perceptions decreased dramatically. This change in self-perceptions came to match the teacher's expectations over the year.

In a study of students relatedness (student connection), Furrer and Skinner (2003) examined relatedness as a self-system resource in children's academic motivation and performance. Participants in this study were 641 third through sixth graders. Participants

completed self-report questionnaires by trained interviewers. Teachers filled out their own questionnaires. Furrer and Skinner (2003) study revealed that relatedness to parents, teachers, and peers each uniquely contributed to students' engagement, especially emotional engagement. Children who feel they are related to the teacher, other students, and parents are more likely to show greater interest and enthusiasm, which leads to more participation in school activities and fewer negative emotions. This in turn leads to greater opportunities for actual learning and school success. Furrer and Skinner (2003) stated:

The combination of constructive engagement and higher performance elicits more support from teachers, parents, and peers, which confirms or promotes children's feelings of belonging and connectedness. In contrast, children who feel unimportant or rejected by key partners are more likely to become frustrated, bored, and alienated from learning activities, which in turn interferes with their academic progress; poor performance coupled with disaffection erodes social support, leading children to feel further estranged. (p.158)

In other words, students who feel they are connected to teachers, peers, and parents receive more support. With this support, the students are able to make better gains. Furthermore, students who did not feel supported by their teacher, peers, and parents felt unimportant or rejected, and they received less help. One problem with this study was the scope of the sample

participants. The participants in the study were predominantly Caucasian and middle to working class. A further study should include a mix of participants of socio-economic backgrounds.

Since teachers are pivotal to student perceptions of learning (West, 1994), Sava (2001) studied the causes and effects of teacher's hostile attitudes (sarcasm, prejudice, and verbally abusive behavior) toward students. In this study, 15 schools were randomly selected to participate. Selected teachers were given extensive questioners and were asked to confidentially fill the questioners out, 119 teachers returned the questioners. Students were then asked to complete rating scales. Students assessed randomly selected teachers anonymously. Students were assured that teachers would not have access to their responses. Each teacher was assessed by 5 to 20 students. Interestingly enough, student's perception was cause for some questions to be left out of the study. Sava (2001) states:

Additionally, some items had different meanings for pupils. For example the question "The teacher calls on me to answer the question" was positively perceived by high achieving pupils, while low achieving pupils tended to consider this act as a revenge from the teacher which was meant to stress their lack of knowledge. (P.1014)

The results of this study found that teachers who held a custodial, more authoritative approach to teaching, promoted a repressive education, and are more likely to be linked to hostile attitudes toward students. Teachers are more likely to use negative control,

causing students to consider teachers as part of their problems in school. This perception of the teacher can cause poor attendance, boredom, or lower level of perceived academic self-efficacy (Sava, 2001). Teachers that exhibit positive control and co-operative attitudes tend to motivate and contribute to pupil's well-being in the classroom. One issue with this study is that it was conducted in two Romanian cities. This could cause questions as to the cultural differences of the participants and their bearing on students in the United States.

Methods for Changing Teacher's Differential Behavior

Siperstein (1985) assessed teacher's differential behavior towards isolated/rejected learning-disabled students and non-learning disabled students in the fourth, fifth, and sixth grades. Differential behavior was defined by classroom observations of the interaction patterns and sequences of behavior that occurred between teachers and target students. In addition, an awareness intervention strategy was included in the study, to make teachers aware of their differential behaviors. Eight classrooms consisting of 2 fourth, 4 fifth, and 2 sixth grades were selected from four elementary schools in a large suburban community. Four male and four female teachers participated in the study. To identify the social status of the students, students were asked to fill out a questioner on who they liked the best, and could give as many choices as they liked. The teachers were asked to rank the students social behavior as well.

The results found that teachers initiated significantly more, prolonged their interactions more, and exhibited more corrective behavior toward the low-target child than the high-target

child. Further, teachers showed more negative verbal and non-verbal behavior toward the low-target student than the high-target student. Teacher's ranking of the students was along the same order the students ranked each other. The most well liked student was ranked in the highest third of the class while the isolated/rejected learning-disabled student was ranked in the bottom third. This shows that the student's and teacher's perceptions of the popular students and the isolated/rejected learning-disabled students were the same.

The awareness intervention goal was to make teachers aware of their differential treatment they demonstrated toward students. More specifically the awareness intervention was designed to:

- Test their basic premises about their instructional/management and reinforcement behaviors
- Recognize subtle patterns of their own behavior
- Plan for an implement changes in their behavior (Siperstein, 1985)

Two feedback sessions were held and discussions took place about the information the teachers had provided about the students, the observation findings of the teacher's verbal and non-verbal interactive manner, the areas of behavior where change was indicated, and the possible ways of implementing the changes.

After intervention the study found that the frequency of the initiations and responses remained the same, but the quality of the initiations and responses went up, there were less non-supportive verbal and non-verbal, negative behavior toward the learning disabled students. This suggests that teachers

chose to focus on the most important and identifiable characteristics of their behavior and the negative quality of their behavior. This implies that it is not teacher's attitudes that need to be changed, but changing the teacher's behavior toward these students.

Limitations to this study include: lack of a control group of teachers observed and lack of follow up to find out if the changes may have been temporary.

Another study that looks at changing teacher's behavior toward students was done by Auld, Belfiore, & Scheeler (2010). This study involved looking at pre-service teachers' consistent application of a differential reinforcement of alternative (DRA) behavior. According to Auld et al. (2010), this is defined as "placing one behavior on extinction while another behavior is reinforced."(p. 171) In this study seven, twenty to twenty-two year old undergraduate pre-service teachers that were placed in regular education classrooms, for their 12 week student teaching requirements were chosen to participate in this study. Schools varied from urban to suburban in three different districts. Instructional strategies pre-service teacher would be involved in ranges from direct instruction to unstructured cooperative group learning. Negative behavior for this study consisted of talk-outs (talking out of turn) and a behavior to get the teachers attention while the students hand is raised. To set a baseline for Pre-service teachers, each teacher was observed on response to negative behavior and at the beginning of the study. This showed that 5 of the 7 pre-service teachers exhibited low but stable levels of correct responding to student negative behavior. Pre-service teachers

were then taught interventions that included individual weekly meetings directly following classroom observation and direct instructional workshops on the implementation of the DRA strategies.

The results of the study showed that after intervention training all 7 of the teachers showed increase in levels of correct responding (use of DRA); 4 of the teachers showed immediate increases, while the other 3 showed steady increases. This shows that pre-service teachers responded well to feedback and workshops. Before intervention workshops, pre-service teachers responded to student's behaviors whether they were negative or positive. This provided inconsistent reinforcement to both behaviors. After intervention, pre-service teachers were able to discern between the positive and negative behaviors and ignore the negative behaviors until the student changed to a positive behavior. This study suggests that ignoring a negative behavior can change it to a positive behavior. It also suggests that training pre-service teachers with the skills and strategies that were successfully employed in this study would benefit both the new teachers and students (Auld et al., 2010). This is in agreement with Siperstein (1985), study as to changing the teacher's behavior towards the student will change the interaction between student and teacher from negative to positive.

Limitations to the study were the brief amount of time spent in the classroom as the pre-service teachers were only in the class for six weeks. This caused an immediate end to the data. Since the pre-service teachers left the schools, this did not allow for any follow up maintenance. The small group

of teachers used for the study could be a limitation also. This allowed for a low ratio of instructor to pre-service teacher, which would not hold true in most student teaching experiences. One last limitation was that some mentor teachers did not agree with the classroom management of the study and pre-service teachers stated that their attempts to put into practice some of the strategies were not allowed.

Conclusion

In reviewing these studies, we can conclude that teacher's differential treatment of students is a problem faced by many students in the classroom today. The first part of the review was dedicated to confirming there was actual teacher differential treatment towards learning disabled students. As I have shown throughout this review, teachers do treat students differently due to perceived academic competency. These perceptions are formed through past experiences in teaching, information from other school personnel, past behavior or achievement, and present behavior or achievement (Lee & Porter 1990). Many teachers label students as high achieving and low achieving. With this labeling, come different expectations and biases. High achieving students receive more, higher quality positive interaction with teachers. On the other hand low achieving students receive little positive feedback and more corrective feedback. Through these experiences teachers label students using bounded rationality to form their perception. Students are acutely aware of their teacher's label and have the ability to detect the differences in teacher differential treatment of high and low achieving students.

This review found that teachers, who held a custodial, more authoritative approach to teaching, promoted a repressive education and are more likely to be linked to hostile attitudes toward students. Teachers were more likely to use negative control, causing students to consider teachers as part of their problems in school. This perception of the teacher can cause poor attendance, boredom, or lower level of perceived academic self-efficacy (Sava, 2001). Teachers that exhibited positive control and co-operative attitudes tended to motivate and contribute to pupil's well-being in the classroom.

J. Evans (personal communication February 16, 2011) provides an example of how a positive attitude and concern can change the outlook for students. A male thirteen-year-old sixth grade student is in trouble at school. The student has trouble paying attention, staying on task and consequently causes disruptions in class. Frustrated by his actions teachers are constantly berating the student, calling him stupid and telling him he will amount to nothing. There have been multiple conferences at school. His father abuses him mentally because he cannot be successful. The student wants to do well and does not know why he acts the way he does. Even after the student was taken in for a full psychological examination and found to have ADHD along with chemical brain damage, teachers failed to recommend him for special help. The school district hired a new Special Education teacher that is documenting the student's behavior. With this documentation, the process of implementing a course of study will be put in place that will help the student. If teachers are not willing to change their negative repressive behavior toward this student, then legal

action will be brought against the teachers.

This research appears to point toward the fact that teacher's differential behavior in the classroom is problematic. The reward that low achievers receive is usually in the form of corrective behavior and the additional help they receive is of low quality. Peers fall in line with teachers perceptions and students with learning disabilities tend to have a low social status. As Siperstein, (1985) brings attention to, teachers may not be aware they are treating students in a negative manner and Babad (1993) brings to point that teachers may be more comfortable to be unaware of negative differential behaviors. Siperstein, (1985) study illustrated that the simple fact of making teachers aware of their differential treatment of students was enough to change their behavior towards the students. Auld et al. (2010) demonstrated the effects of making pre-service teachers aware of their negative behavior towards students and by doing so, they were able to change their behavior towards students who were presenting negative behaviors. Weinstein (1983) quotes a 15-year-old pupil: "I don't think any teacher can understand the problems pupils have; they do not stop and listen long enough. ... If they did, the relationship between pupils and teachers would improve."

Implications for Teaching Practice and Further Research.

Students need to feel they are valued as a productive member of the classroom community. The existing data seem to demonstrate that teachers who use a combination of constructive engagement and higher performance expectations elicit more support from teachers, parents, and peers, this

confirms and promotes children's feelings of belonging and connectedness. In contrast, children who feel unimportant or rejected by key partners are more likely to become frustrated, bored, and alienated from learning activities, this in turn interferes with their academic progress and poor performance, coupled with disaffection erodes social support, leading children to feel further estranged (Furrer & Skinner, 2003). When teachers were made aware of their perceptions of students and how these perceptions caused them to treat students differently, teachers did change their negative behavior toward students (Siperstein, 1985). Pre-service teachers who were trained in changing negative behavior were able to change their interactions with students from negative to positive (Auld et al., 2010). Teacher's attitudes towards students play a large part in how they treat students. It seems that the simple fact of making teachers aware of their differential treatment of students is enough to motivate teachers to change. Teachers may be more open to research that does not criticize differential treatment but provides an opportunity for teachers reflect and learn from mistakes. This could be accomplished by increasing subject knowledge in teacher training programs.

In my opinion teachers need to look at challenging behaviors and learning disabilities as a challenge. The challenge is not to suppress and blame the student, but to find methods and strategies that will work toward making the student a productive member in the classroom community. To do this teachers must learn about the behavior problem or learning disability to better understand how to work with the student. Teachers must use positive reinforcement to build a student's

confidence. Teachers need to work with staff on strategies to help students work through their disabilities or behavior problems. With this being said, research on changing teacher's differential treatment of students was lacking. Follow up research could provide a more concise method of changing teacher's differential treatment of students. More research on the willingness of authoritative teachers, to change their negative behaviors toward students would be beneficial. The wide scope of the studies in this paper did not look at the rate of differential treatment of students according to racial, socio-economic class, or culture of students. Future work could narrow the scope to distinguish how these different aspects influence teacher's perceptions and expectations of these different groups. Ignacio Estrada stated: "If a child can't learn the way we teach, maybe we should teach the way they learn."

References

- Auld, R. G., Belfiore, P. J., & Scheeler, M. (2010). Increasing pre-service teachers' use of differential reinforcement: Effects of performance feedback on consequences for student behavior. *Journal of Behavioral Education*, 19(2), 169-183. doi:10.1007/s10864-010-9107-4
- Babad, E. (1993). Teachers' differential behavior. *Educational Psychology Review*, 5(4), 347- 376. doi:10.1007 /BF01320223
- Babad, E. (2005). Guessing Teachers' Differential Treatment Of High- And Low-Achievers From Thin Slices Of Their Public Lecturing Behavior. *Journal of Nonverbal Behavior*, 29(2), 125-134. doi:10.1007/s10919-005-2744

- Brattesani, K. A., Weinstein, R. S., & Marshall, H. H. (1984). Student perceptions of differential teacher treatment as moderators of teacher expectation effects. *Journal of Educational Psychology*, 76(2), 236-247. doi:10.1037/0022-0663.76.2.236
- Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology*, 95(1), 148-162. doi:10.1037/0022-0663.95.1.148
- Kuklinski, M. R., & Weinstein, R. S. (2000). Classroom and grade level differences in the stability of teacher expectations and perceived differential teacher treatment. *Learning Environments Research*, 3(1), 1-34. doi:10.1023/A:1009904718353
- Lee, O., & Porter, A. C. (1990). Bounded rationality in classroom teaching. *Educational Psychologist*, 25(2), 159-171. doi:10.1207/s15326985ep2502_4
- Rubie-Davies, C. M. (2010). Teacher expectations and perceptions of student attributes: Is there a relationship? *British Journal of Educational Psychology*, 80(1), 121-135. doi:10.1348/000709909X466334
- Rubie-Davies, C. M. (2006). Teacher expectations and student self-perceptions: Exploring relationships. *Psychology in the Schools*, 43(5), 537-552. doi:10.1002/pits.20169
- Sava, F. A. (2002). Causes and effects of teacher conflict-inducing attitudes towards pupils: A path analysis model. *Teaching and Teacher Education*, 18(8), 1007-1021. doi:10.1016/S0742-051X(02)00056-2
- Siperstein, G. N., & Goding, M. J. (1985). Teachers' behavior toward LD and non-LD children: A strategy for change. *Journal of Learning Disabilities*, 18(3), 139-144. doi:10.1177/002221948501800307
- Weinstein, R. S. (1983). Student perceptions of schooling. *The Elementary School Journal*, 83(4), 287-312. doi:10.1086/461319
- West, R. (1994). Teacher-student communication: A descriptive typology of students' interpersonal experiences with teachers. *Communication Reports*, 7(2), 109-119.

Grief in Adolescence: Classroom Practices That Support the Adolescent Grieving Process

Many adolescents will experience grief and loss due to the death of a significant person in their lives. This paper investigates the processes of adolescent grief and what teaching strategies can be implemented in order to help students cope. Ten empirical studies are reviewed, which focus on adolescent development and grief, complications of the grieving process, childhood traumatic grief, and resilience. Participants in most of the studies experienced the death of a close friend or family member. The ages of participants range from 9 to a mean of 36, and the amount of time since the death occurred varies from study to study. The research indicates that bereavement can have different effects on adolescents. Theories of the grieving process are changing, and this affected the way researchers approached their studies. A major limitation of this literature review is that no studies were found on grief in the classroom.

Adolescence, the period bridging childhood and adulthood, is a transitional phase. Traumatic or emotionally destabilizing events that occur during adolescence can have profound and lasting effects on the individual involved. The death of a loved one is one such event.

When I was working as a teacher intern, two of the students at my school passed away. One student died suddenly in a car accident on her way to school, and the other student died from a suspected aneurysm after a week on life support. In the first case, I had to inform my class of the student's death. I was confronted with a situation that I was not prepared for, and I had no idea how to best break the news or how to support students when they burst into tears. I was left with numerous questions: Is there a better way to share difficult information? How should the school respond to a student's death? How do adolescents grieve? What can I, as a classroom teacher, do to support them? And finally, what should I share with students about my own grief? Answering all of these questions is beyond the scope of this paper, but this review of the literature seeks to

answer the question: What classroom practices can support the adolescent grieving process?

Death is omnipresent and an issue that will unavoidably recur in schools. Administrators and counselors are generally responsible for determining how to respond in the event of a school death. Yet whatever is done, and whatever support is provided by the school, classroom teachers are the people who are present with students each day. Additionally, a student may suffer from a private loss that is not publicly addressed by the school at large. It is essential for teachers to know how to respond appropriately and supportively.

This is an important issue for the educational community as a whole. Although school is ostensibly a place for students to develop their mental and intellectual capacities, students are also developing socially and emotionally. These areas should not be ignored in the classroom, even if they are not an overt part of the curriculum. Furthermore, studies of the learning process suggest that emotions can affect reasoning and memory, and that feelings can both help people remember and

cause them to forget (Zull, 2002). If students are to learn during the time they spend in school, they need to be emotionally supported.

The bereavement field is relatively new and has undergone significant changes in the past 20 years. Some of the studies reviewed in this paper are operating under the theory that grief is a phase that must be worked through in stages. Other theories state that the idea of concrete “grief work” is not supported by empirical research and these theories have a more open framework for the grieving process and its outcomes.

Research in the bereavement field covers many aspects of death. This paper deals specifically with adolescents’ responses to the death of a loved one. For the purpose of this paper, grief is defined as an emotional reaction to death, and bereavement as the state of having lost someone due to his or her death. This paper seeks to understand the adolescent grieving process, and to answer the question of how a classroom teacher can respond to a student’s needs in the face of death in a developmentally appropriate and supportive way.

Literature Review

The studies in this paper were gathered from a search conducted from November 2010 through February 2011 using the Educational Resources Information Center (ERIC), the PsycInfo database, and books and text resources from the Evergreen State College Library and the Summit Alliance of libraries. Initially, the search terms “grief” and “adolescence” were used to locate resources; the terms were then broadened to include “bereavement” and “adolescents.” The journal *Death Studies* and the works of Balk (1996, 2002) were found to be especially relevant. An initial 10 empirical studies were found and used to report research results. Literature reviews and

theoretical pieces were then used to frame key issues and place the empirical studies in context, as well as to relate results to my research question.

Theories of grief and bereavement are discussed first, to illustrate the changes that have occurred in the field and to provide a framework for the empirical studies that follow. The empirical studies themselves are then discussed and analyzed. These studies are grouped into categories: how adolescent development interacts with grief, possible problematic responses to death, childhood traumatic grief, resilience, and finally, grief in the classroom.

Theories of Grief and Bereavement

The field of grief and bereavement has its origin in psychoanalytic theory (Boerner & Wortman, 2001). The first major work in the field was Freud’s 1917 paper on mourning and melancholia, in which he proposed that the psychological purpose of grief is to withdraw emotional energy and become detached from the deceased. Freud believed that the bereaved had to work through the grief, which created the “grief work” hypothesis that has continued to influence the bereavement field. Attachment theory, developed by John Bowlby in three volumes in the 1980s, considered grief to be a form of separation distress that triggers attachment behavior (Boerner & Wortman, 2001). The bereaved person struggles between opposing needs to maintain attachment to the loved one and to survive without the loved one. Bowlby proposed four stages of grief: initial shock, searching for the lost person, despair as the bereaved gives up the search, and finally reorganization and recovery as the loss is accepted and life is resumed.

A similar stage theory was introduced by Elizabeth Kubler-Ross in the late 1960s, and it was her model that popularized the stage theory of bereavement (Boerner &

Wortman, 2001). Kubler-Ross claimed that individuals go through stages of denial, anger, bargaining, depression, and finally acceptance. This model has been used in the medical, nursing, and social work fields, and in newspaper and magazine articles written for the bereaved. In their review of bereavement theories, Boerner and Wortman (2001) write, "A negative consequence of this, however, is that people who do not follow the expected stages may be labeled as responding deviantly or pathologically" (p. 1152). Furthermore, Kubler-Ross's stage model was investigated by researchers (Wortman & Silver, 2001) and found to have no basis in empirical research. These stage theories have since become known as myths of coping with loss.

The debunking of traditional theories has led to modern grief models, developed primarily in the past 10 years. It is now believed that there may be phases of grief, but no set stages that must be followed in order. The available findings demonstrate the variability of response to loss, and the importance of thinking about the grieving process in frameworks other than those based on breaking down the attachment or working through the loss (Boerner & Wortman, 2001).

Stroebe and Schut (2001) proposed a dual process model that involves a dynamic coping process. In this model, the bereaved oscillates between loss-oriented coping and restoration-oriented coping. Loss-oriented coping is the effort to confront feelings of grief and the loss itself, while restoration-oriented coping is the attempt to appease the pain or gain distance from grief in order to focus on the demands of daily life. Stroebe and Schut (2001) write, "At times the bereaved will confront aspects of loss, at other times avoid them, and the same applies to the tasks of restoration" (p. 395). A person in the process of grieving may

therefore be fine at some times, and impaired by emotions at others.

Another new development in the bereavement field is the idea of continuing bonds. As discussed above, feelings of grief and attachment to the deceased were traditionally believed to be emotions that needed to be broken down and worked through. Yet increasingly, clinical and research evidence suggest that on-going attachment to the deceased is fairly common in the lives of the bereaved (Balk, 2002). Balk writes, "Such ongoing attachment, termed 'continuing bonds,' lies in sharp contrast to the received dicta from experts such as Freud and Bowlby that managing grief requires detachment from the deceased" (p. 14). Maintaining a relationship with the deceased may be one way of grieving and coping with loss.

Developmental Tasks and Grieving

Theories of adolescent development suggest that adolescents are undergoing numerous changes in the way they think about themselves, their relationships, and the nature of society. Psychologist Jean Piaget proposed that adolescents are entering a stage that he called formal operational, during which the adolescent acquires the ability to think systematically about logical problems, and also begins to think abstractly (Cole & Cole, 1993). Theorist Erik Erikson proposed different developmental tasks for the life span, and contended that the central crisis of adolescence is one of "identity versus identity confusion," as the adolescent strives to develop a pattern of beliefs that will make up his or her identity (Cole & Cole, 1993). The adolescent's beliefs, abilities, and desires must be reconciled with adult norms. The experience of grieving can affect identity development, and the ability to think abstractly can affect an adolescent's concept of death.

Tamm and Granqvist (1995) conducted a study that examined the death concepts of children and adolescents by analyzing their drawings. Drawings have been used by researchers investigating children's death concepts and are an established medium for assessing thoughts and perceptions that may not be easily stated verbally. Participants were 431 children and adolescents in five schools in Sweden. Students participated as intact classroom groups, and all of them volunteered to participate. They were divided into four groups based on age: 9-10, 12-13, 15-16, and 18-19. Children and adolescents were asked to make drawings of what came to their minds when they heard the word "death." Drawings were then categorized according to the content of the drawing and brief written commentaries made by students after they drew their picture, which explained and specified the content.

Categories were developed by the researchers around three superordinate themes and 10 subthemes: biological death concept (with the subthemes of violent death, moment of death, and state of death), psychological death concept (sorrow, mental imageries, and emptiness), and metaphysical death concept (tunnel phenomenon, mystery of death, personification, and perceptions of heaven and hell). The findings indicate that death-concept is related to developmental level. Younger children (9-12 years old) represent death primarily in biological terms, with an emphasis on violent death and the rituals of the dead. Older adolescents' drawings were more metaphysical in nature. The researchers wrote, "Children in the two older age groups (15 and 18 years) frequently related their understandings of death to a complex system of religious and philosophical thought" (Tamm & Granqvist, p. 218). This change in content over the age groups suggests an alignment with Piaget's developmental

stages. This is related to my research question because if the very concept of death changes with age, it seems reasonable to deduce that the process of grieving will change with age as well.

Schultz (2007) conducted a qualitative case study of six young women whose mothers passed away during their adolescence, and the impact that parental loss had upon their identities. As an explanation of her chosen method, Schultz wrote, "A qualitative research approach was used for this study because the phenomenon under investigation has not been researched extensively and therefore presents an opportunity for a deeper understanding of this particular experience" (p. 21). Participants were recruited through advertisements distributed around university campuses in western Canada. Eligible participants met four criteria: they were women between 18 and 26 years old, they experienced the "unintentional death" of their mothers during their adolescence (between the ages of 15 and 20), they were raised in intact families, and the loss occurred at least two years prior to the study.

An initial interview was used to gain an understanding of the participants' lived experience, centered around two key questions: "Can you tell me about your experience of losing your mother during your adolescence?" and "Can you tell me about your experience of developing your identity as you move into adulthood given your experience of losing your mother at a young age?" Interview responses were transcribed, and answers analyzed and grouped by meaning. A second interview was conducted with each participant, during which she was given the transcript and could make additions or clarifying comments. Data were then compared and integrated into themes for all participants. Twelve themes were identified, which the researcher

described in detail, elucidating the themes with statements from participant responses.

This study gave an important phenomenological snapshot of the interaction between bereavement and development, specifically the task of identity formation, in young women. The most important theme, as related to my research question, that emerged from Schultz's (2007) study was that most of the young women spoke of a "continuing bond" with their deceased mothers that counters the traditional view of grief as a phase which must be moved through (p. 37). The loss itself becomes an important part of their identities. Additionally, many of the young women spoke of feelings of isolation, and the researcher suggested that peer support groups could potentially be beneficial, which has implications for classroom practice. Limitations of the study included the small sample size and the fact that the participants' memories of their mothers were retrospective by two years or more.

Complications in the Grieving Process

An inability, for whatever reason, to complete the grieving process can have severe consequences for adolescents. Tomori (2000) completed a case study of two Israeli adolescents whose failure to complete a process of mourning was an influential factor in their suicide attempts. Tomori was careful to state that self-destructive behavior is multi-dimensional, and the cause of the suicide attempts was not directly linked to the experience of loss. One of the participants in the case study, Alenka, witnessed the death of her father when she was 6 years old. Following the death, her mother did not openly express her own sorrow or let the children mention their father. By denying the loss and disallowing expressions of sorrow, Tomori suggests that Alenka's mother inadvertently put a stop to Alenka's grieving process. The other

participant in the case study, Peter, attempted suicide following his mother's suicide. The break-up of the family structure effectively removed his support network. There was no one available for him to talk to. After a year of increasingly delinquent behavior, Peter's suicide attempt allowed him to seek help and to begin working through his grief.

Case studies are limited in their applicability. Two specific examples that resulted in suicide attempts are not generalizable to all adolescents' grief, or even to all adolescents who have lost a parent. Most deaths do not result in attempted suicides. Yet the seriousness of grief is underscored by these extreme situations and they suggest one of the possible consequences of unresolved grief. However, Tomori was working under the assumption that there is a concrete grieving process that must be completed.

Rosen (1985) conducted a qualitative study that focused on the negative consequences of sibling loss. Many studies on bereavement work with populations who have sought out mental health services, but in an effort to survey a portion of the "normal" population, Rosen recruited a sample through a variety of means, including word of mouth and press releases in local and national newspapers. The majority of the participants lived in the northeastern United States, but some responded from across the country. Criteria for inclusion in the sample were that the participant was at least 13 years old, that he or she had experienced the death of a sibling before the age of 20, and that the loss occurred at least one year prior to the study. Initially 227 individuals contacted the researcher, and of these, 159 met the criteria and participated in the study. The participants were mailed a 23-item survey, with questions about socio-economic background, circumstances of the sibling's

death, and the respondent's and his or her family's responses to the loss. Data were collected, and analysis focused on three areas: individual reactions to the loss of a sibling, family reactions, and societal reactions.

Rosen (1985) reports that in the majority of cases, sibling death was not discussed within the family at all. "The major theme that emerged from the analysis of family responses was the unexpected degree to which the family failed to talk together about the death of the child" (p. 314). There were both social and familial prohibitions against discussing the loss.

Rosen's (1985) survey and analysis had certain limitations. Though an effort to survey a normal population was made, it may be that people who respond to a survey about death might have unresolved issues around it. Additionally, the average age of the respondents was 36, which meant it had been, on average, at least 16 years since the experience under discussion. Memories may not have been completely accurate.

Childhood Traumatic Grief

In a multi-site empirical examination of childhood traumatic grief (CTG), Brown et al. (2008) sought to determine what characteristics, attributions, and reactions after exposure to death would be associated with CTG. Brown et al.'s study involved 132 children and adolescents who had experienced the death of a significant person in their lives and were considering mental health treatment for bereavement. Participants were recruited from five metropolitan sites in the U.S. that provided university-based or community-based treatment programs for traumatized children. The sites had vastly different demographics. For instance, one site in New York had only white participants who had all lost their fathers in the emergency response to the September 11, 2001, attacks, while another

had primarily African-American participants who had lost a family member due to homicide.

The children's experiences and symptoms were measured by five self-report instruments. A multiple regression analysis was then conducted. The statistically significant factors that most predicted CTG were children's perceived life threat and the emotional reactions of caregivers. The perceived life threat suggests that the way a person in a child's life dies can affect the impact the death has on him or her. For example, if the deceased died a violent death by homicide, the child might worry that he or she will die too. Caregivers who had mental health problems following the death were less able to support their children. These two factors were most predictive of CTG. One possible limitation of the study was that children were excluded if they had severe developmental delays, active psychosis, or behavior deemed dangerous to themselves or others, yet these are some of the possible symptoms of CTG.

Melhem et al. (2004, 2007) have conducted some of the most significant research on childhood traumatic grief by differentiating it from adult complicated grief, depression, and post-traumatic stress disorder. In one study (Melhem et al., 2004), the researchers examined traumatic grief among adolescents exposed to a peer's suicide. The study group consisted of 146 friends and acquaintances of 26 suicide victims who were identified in the metropolitan Pittsburgh area between 1988 and 1991. Friends and acquaintances were interviewed at a median of seven months after the suicides, and follow-ups were conducted again at 12-18 months, and then again at 36 months. Inventories for complicated grief, depression, and post-traumatic stress disorder were all given, and data were analyzed using principal component analysis and factor analysis.

Twenty-nine participants (20% of the total sample) met the criteria for traumatic grief at six months. Of those 29 participants, 13.8% continued to meet criteria for the 12-18 month assessment, and 7% continued to meet criteria throughout the follow-up period. Possible limits to the generalizability of the findings were that the participants had high rates of previous psychiatric history, which placed them at high risk for negative psychological consequences of bereavement. Additionally, participants were friends of people who died by suicide, and their grief reactions may not be generalizable to other types of death and other relationships with the deceased.

Initial findings from another study by Melhem et al. (2007) described the phenomenology of complicated grief in parentally bereaved children and adolescents and examined its correlates. Participants were sought out based on monthly lists of deaths by suicide, accident, or sudden natural causes obtained from the coroner offices in Pittsburgh. This is an ongoing five-year, population-based, longitudinal study of the impact of parental loss on family members, which will ideally add more concrete data to the bereavement field.

Resilience

Among children and adolescents, the loss of a parent is especially problematic because it can radically change the child's life and put his or her basic needs at risk of being unmet. Lin et al. (2004) conducted a study of resilience in parentally bereaved children that considered environmental stress, family, and child variables, and examined what made particular children more resilient than others when confronted with grief. The study was a multi-year, large-scale, randomized experimental trial of preventive intervention. The sample consisted of 179 children (ages 8-16) who experienced the death of a parent or parental

figure. Participants lived in a southwestern county in the United States and were recruited by mail solicitation, media, and personal presentations made by the researchers at community agencies such as schools, churches, and hospitals. Data were gathered from caregivers, teachers, and the children themselves using a variety of scales for different variables and were analyzed using three multivariate analyses of covariance.

Of the 179 participants in the study, 56% were found to have clinically significant levels of mental health problems according to at least one indicator. Resilience following a parent's death was positively predicted by the surviving parent's provision of warmth and discipline, and negatively predicted by caregiver mental health problems. The resilient children perceived negative events to be less threatening and felt more effective in coping with stressors. The researchers theorized that in positive cases, parental warmth and discipline contributed to healthy adaptation by facilitating the accomplishment of normative developmental needs, such as establishing a sense of secure social ties, environmental control, or self-worth, that can be disrupted by the loss of a parent (Lin et al., 2004, p. 681). This suggests that consistency and fair discipline in the classroom can be helpful for students who are struggling with parental bereavement.

Lin et al. (2004) readily acknowledged possible limitations of their study. Cross-sectional analysis could not establish causal links, and without longitudinal data, they could not determine if lower coping efficacy led to or was the result of children's mental health problems. Additionally, because results were taken after the death of a parent, the data did not measure what family life was like prior to the death of a parent. Future research should use expanded criteria for resilience that includes the presence of

competence as well as the absence of problems.

In an effort to better understand what makes some adolescents more resilient than others in the bereavement experience, Hurd (2004) conducted a case study of a young woman, identified as “Debbie.” Debbie was 14 at the time of the study and was 8 when her father died. During four interviews conducted over the course of three months, Debbie described the impact of her father’s death as she progressed from childhood to adolescence. All interviews were taped and transcribed, then coded into concepts, categories, and themes. To validate Debbie’s self-reports, the researcher conducted triangulating interviews with her mother and brother.

Hurd (2004) found that Debbie’s thinking and behaviors as a 14-year-old placed her within the formal operational stage of cognitive development. She was able to articulate abstract theological ideas about her thoughts on death, loss, and hope in symbolic language. The researcher determined that she had coped well with the loss, since she had navigated tasks that lead to successful mourning in adolescents. Specifically, she recognized that predictability marks some, but not all events; gained mastery and control of her life; forged relationships marked by belonging; discovered that fairness and justice mark some, but not all, outcomes; and developed a confident self-image. These tasks of mourning, coupled with the tasks of adolescence, might lead to a model for developing resilience in children struggling with bereavement. As a single case study, it is not practical to generalize Hurd’s results to all adolescents, and a study with a larger sample size would need to be conducted before serious conclusions could be drawn linking resilience with bereavement.

In the Classroom

Based on my survey of research, no empirical studies have been conducted on the effects of grief in the classroom. The closest the bereavement field has come is to survey teachers’ perceptions. Reid and Dixon (1999) conducted a study of 67 educators at six different elementary and middle schools in southeastern Oklahoma and north Texas. A survey was given which included 26 questions addressing such issues as types of training held by the respondent relating to grief/bereavement, the value placed on receiving such training, types of situations which may be encountered in school settings, and the degree of comfort in dealing with those situations. An additional survey was also administered to measure teacher attitudes toward death itself.

Reid and Dixon’s (1999) findings indicate that 14% or less of educators had ever taken a class on death and dying, attended a lecture on the subject of death and dying, received academic instruction on children’s understanding of death, or had training on how to discuss or teach about death and dying to children. Yet 44% of educators thought formal learning experiences on death were moderately important, and 15% thought they were very important. The majority, 57% of teachers, thought death education in teacher preparation programs was moderately to very important. This suggests that practicing educators wish they knew more about the subject, in order to successfully teach and aid their students. Possible limits of the study include the fact that on average, one third of teachers at the different schools responded to the surveys, and this self-selection may have been influenced by pre-existing death awareness. Additionally, 66 of the 67 participants were female, and the sample was predominately middle-class, middle-age, white, educated, and religious.

As I stated earlier, I was unable to find any empirical research on bereavement in the classroom. Suggestions for teacher practice made by Heath et al. (2008) are that teachers ought to listen to students, and adapt information to students' maturity and developmental levels. Teachers can show their care by genuinely expressing their desire to assist, encouraging students to talk, and respecting a student's silence. The researchers also state that teachers should give accurate information. Though talking about death can be uncomfortable, avoiding the topic or telling half-truths can be detrimental to healing and grieving. Additionally, Heath et al. suggest that classroom teachers invite a mental health professional into the classroom to speak about grief before the need arises and that teachers stick to daily routines. Teachers should reassure students that a wide range of grief reactions are common. Although it is useful to have concrete suggestions for practice, no references are made to research that supports these practices.

Discussion

My research question was: What classroom practices support the adolescent grieving process? How can a classroom teacher respond in the face of death in a developmentally appropriate and supportive way? From my research, I have learned that there is no clear answer. My investigations into this question have only made it clear that there is no concrete "adolescent grieving process." Adolescents may each grieve in their own way, and oscillate between working through that grief and trying to get on with their lives. They may distance themselves from the deceased or they may develop continuing bonds. Normative developmental tasks may or may not be impacted, and there are not yet any models directly linking development with bereavement.

Research in this area does indicate that understanding of death changes during adolescence, and that grief can interact with identity development. It is during adolescence that students enter Piaget's formal operational stage and begin to think abstractly about death (Tamm & Granqvist, 1995). This ability to think abstractly allows adolescents to grasp the finality of death, and leads them to the realization that they too will someday die. Schultz's (2007) study of identity in young women whose mothers died during their adolescences suggests that identity formation was complicated by grief, and that in the cases of young women who lost their mothers, the loss itself became part of their identities.

A changing understanding of what the grieving process entails makes it difficult to draw conclusions about some of the research discussed earlier. Both Tomori (2000) and Rosen (1985) indicated that an incomplete grieving process was a factor in later negative consequences for adolescents who had experienced parental loss. Both researchers seemed to be operating under the belief, now contended, that there was a definite process that needed to be completed.

There was a great deal of research confirming the distinctiveness of childhood traumatic grief (CTG) from depression, post-traumatic stress disorder, and adult complicated grief (Brown et al., 2008; Melhem et al., 2004, 2007). Yet so far, the research has not addressed how to minimize the likelihood of a bereaved child or adolescent developing CTG, so this area of research was not very helpful in addressing my question. It is nevertheless useful to be aware of some of the possible complications of grief and to have an idea of when a professional intervention would be advisable.

Studies of resilience in bereaved adolescents offer some useful ideas. Lin et

al.'s (2004) study of resilience suggested that parental warmth and discipline were positive predictors of resilience. Hurd's (2004) study of resilience gave a case in which an adolescent had resolved the certain developmental struggles. Perhaps the successful resolution of these developmental tasks should be viewed as the ideal outcome of a grieving process, but so far, current conceptions of the grieving process have not been linked with outcomes.

Recommendations

It is difficult to make recommendations with a lack of empirical research in the classroom. Nevertheless, my investigation into this question has informed my understanding of grief. Adolescents grieve in a multitude of ways. At any given time, a student may be oscillating between loss-oriented coping and restoration-oriented coping. There has been no research on how to support students during any part of this process.

As a teacher, it is a good idea to talk about death in the classroom. If an individual student loses a person in her family or a close friend, I believe it is important to talk to her about it, while understanding that the student may not wish to talk about the death at that time. Talking about death and the deceased person may be an important part of coping, and being available if a student does wish to talk about it could help her expression of grief. In one of the studies on resilience (Hurd, 2004), a positive predictor of resilience was parental warmth and discipline, and a teacher can provide both warmth and consistency in the classroom.

One common finding among the studies was that bereaved adolescents frequently felt isolated and alone, and different from their peers for having experienced the loss. Engaging in groupwork and building a strong classroom

community might ease this sense of isolation.

Balk and Corr (1996) write, "We are impressed with the evidence that adolescents often do use trauma as a means to grow and forge ahead into adulthood a bit more quickly than their unaffected peers" (p. 15). Most of the research on grief and bereavement views the experience of bereavement from a deficit point of view, yet adolescents who experience loss may grow. It is important to recognize that bereaved students may bring a unique point of view to the classroom, and as a teacher, to value their experiences.

Conclusions

My investigations into grief in adolescence have only made it clear how much still needs to be done in the field. The bereavement field itself has changed drastically in the past 10 years, as models of grief have changed from a series of stages that must be moved through to the idea that a person oscillates between confronting the loss and moving on with life. Models connecting the new theories of bereavement to the tasks of adolescence are needed. More connections between resilience and grief would also be helpful, so professionals could know what kinds of interventions are based in the research. There is also a dire need for research on grief conducted in the classroom.

References

- Balk, D. E. (1996). Models for understanding adolescent coping with bereavement. *Death Studies, 20*, 367-387.
- Balk, D. E. (2002). Adolescent bereavement and the domain of prevention. *The Prevention Researcher, 9*(2), 14-15.
- Boerner, K., & Wortman, C. B. (2001). Bereavement. In N. Smelser & P. Bates (Eds.), *The international*

- encyclopedia of the social and behavioral sciences* (pp. 1151-1155). Elsevier Ltd.
- Brown, E. J., Amaya-Jackson, L., Cohen, J., Handel, S., de Bocanegra, H. T., Zatta, E., Goodman, R. F., & Mannarino, A. (2008). Childhood traumatic grief: A multi-site empirical examination of the construct and its correlates. *Death Studies, 32*, 899-923.
- Cole, M., & Cole, S. R. (1993). *The development of children* (2nd ed.). New York: Scientific American Books.
- Heath, M. A., Leavy, D., Hansen, K., Ryan, K., Lawrence, L., & Sonntag, A. G. (2008). Coping with grief: Guidelines and resources for assisting children. *Intervention in School and Clinic, 43*(5), 259-269.
- Hurd, R. C. (2004). A teenager revisits her father's death during childhood: A study in resilience and healthy mourning. *Adolescence, 39*(154), 337-354.
- Lin, K. K., Sandler, I. N., Ayers, T. S., Wolchik, S. A., & Lucken, L. J. (2004). Resilience in parentally bereaved children and adolescents seeking preventive services. *Journal of Clinical Child and Adolescent Psychology, 33*(4), 673-683.
- Melhem, N., Day, N., Shear, M. K., Day, R., Reynolds III, C. F., & Brent, D. (2004). Traumatic grief among adolescents exposed to a peer's suicide. *American Journal of Psychiatry, 161*(8), 1411-1416.
- Melhem, N. M., Moritz, G., Walker, M., Shear, M. K., & Brent, D. (2007). Phenomenology and correlates of complicated grief in children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*(4), 493-499.
- Noppe, L. D., & Noppe, I. C. (1996). Ambiguity in adolescent understandings of death. In D. Balk & C. Corr (Eds.), *Handbook of adolescent death and bereavement* (pp. 25-41). New York: Springer Publishing Company, Inc.
- Reid, J. K., & Dixon, W. A. (1999). Teacher attitudes on coping with grief in the public school classroom. *Psychology in the Schools, 36*(3), 219-229.
- Rosen, H. (1985). Prohibitions against mourning in childhood sibling loss. *Omega, 15*(4), 307-316.
- Schultz, L. E. (2007). The influence of maternal loss on young women's experience of identity development in emerging adulthood. *Death Studies, 31*, 17-43.
- Stroebe, M. S., & Schut, H. (2001). Models of coping with bereavement: A review. In M. Stroebe, O. Hansson, W. Stroebe, & H. Schut (Eds.), *Handbook of bereavement research* (pp. 375-403). Washington, DC: The American Psychological Association.
- Tamm, M. E., & Granqvist, A. (1995). The meaning of death for children and adolescents: A phenomenographic study of drawings. *Death Studies, 19*, 203-222.
- Tomori, M. (2000). Self-destructive behavior in adolescents who have not completed a process of mourning: Case study. *The Israel Journal of Psychiatry and Related Sciences, 37*(4), 291-296.
- Wortman, C. B., & Silver, R. C. (2001). The myths of coping with loss revisited. In M. Stroebe, O. Hansson, W. Stroebe, & H. Schut (Eds.), *Handbook of bereavement research* (pp. 405-429). Washington, DC: The American Psychological Association.
- Zull, J. E. (2002). *The art of changing the brain: Enriching the practice of teaching by exploring the biology of*

learning. Virginia: Stylus Publishing, LLC.

Building Sustainable Communities Using Place-Based Learning

Place-based education (PBE) can make learning relevant for students by contextualizing it in their current lives while utilizing resources found in the community. This study examined empirical peer-reviewed research that looked at how a sense of place developed and how place-based education affected student learning using various performance criteria. Students came from varying backgrounds, included fifth grade to university level, and included those in the U.S., Estonia, Bolivia, and Australia. The studies indicated that a sense of place could be fostered and increased when there was greater interaction with a locale. Student performance as measured by standardized tests, critical thinking skills, and quality of work produced increased in all but the additive approach. Programs of longer duration and greater connection to the local community showed the greatest increase in student learning. Few studies were available, and the most thorough ones were conducted in other countries. PBE can benefit students, educators, and communities by making learning relevant and the context of place can lead to deeper understandings than traditional textbook-based learning. Collaborations between those within schools and those outside of schools contribute to increased sustainability of both the community and the local environment.

Rural communities are shrinking in proportion to the number of people living in urban and suburban areas, and many rural towns want to find a means to survive and provide ways for their young people to remain after they finish school. School practices are often focused on helping children become successful in college, but not all young people want or need an education focused on this one outcome. Students need an education that is relevant today, not just as a path to college and the local community can serve as a nexus of learning for both all students, helping them gain needed skills and strengthening their communities and their connection to it.

This paper examines some of the factors that contribute to connectedness with a local place and the advantages for the students, the educators, and the larger community, involving all parties in educating children for the future as well as for the life they are living right now.

The Origins of Place-Based Education

Since the beginning of the Industrial Revolution and the migration to the cities, rural life was seen as backward and people many moved away from the farm and village to make more money in the cities (Spring, 2008). Those who stayed were seen as less ambitious or less capable than those who left, and remaining was seen as an impediment to success (Long, Bush & Theobald, 2003; Howley et al., 2010). Remnants of our rural heritage can be seen in the school calendar, with a long break in the spring coinciding with planting times, while the summer break was a time when all family members were needed to tend and harvest the year's crops. Schools taught math, science, reading, and writing to add important elements to the agrarian life, not replace it (Williams, 1998). Students attended a small school close to home and there was a deep connection between the classroom and the community. During the

summer, young people frequently worked in an apprenticeship role, with more skilled elders interacting with and transmitting knowledge to children. Those whose livelihoods were based on the land valued the ability to assess problems that arose, act quickly and flexibly, and do whatever job was at hand. These skills were seen as more important than slow, deliberate solutions taught at school, making students who excelled in the classroom look like the ones who could not make it in a rural setting (Shamah & MacTavish, 2009). Using the local setting and resources for education was necessary since resources were limited, schools were close to home, and family cultures had a strong influence on what was valued in school (Corbett, 2004).

Current Challenges Facing Rural Schools

Rural students face a different set of challenges than their urban and suburban peers because the best and the brightest rural students often find more opportunity away from home (Long, Bush & Theobald, 2003; Bartholomaeus, 2006). It is important that young people have options and it is essential that all are educated in a way that honors their desires while still offering them the skills they need, whether they want to attend the best colleges or find a way to remain successfully in their communities. As Bartholomaeus noticed, “There is an expectation that rural schools prepare their student to function well *biculturally*” (p. 480), both in their local community and in the larger society. Rural schools with the highest graduation rates serve the smallest number of students, and small schools offer a protective advantage to those from the lowest socio-economic strata (Jimerson, 2003; Howley & Bickel, 1999; Johnson, Strange, & Madden, 2010). In small schools, students are more satisfied, there are fewer behavior problems, and the path to graduation is faster (Howley & Bickel).

Even with these advantages, small rural schools continue to close because of financial pressures, limiting student access to after-school activities and increasing the time spent riding the bus (Howley et al., 2010). There is often a huge disconnect between what is taught in larger schools and the experiences rural children bring to the classroom. In order for deep learning to occur, students need to be able to connect their daily lives to what they are learning in the school (Rogoff, 2003).

Grunewald (2003) explains that in order for education to be transformative, “A theory of place that is concerned with the quality of human-world relationships must first acknowledge that places themselves have something to say. Human beings, in other words, must learn to listen (and otherwise perceive)” (p. 624). He continues by asserting, “When social relationships are analyzed with respect to the material spaces that contain them, one discovers that these spaces are not just cultural products; they are reciprocally productive of particular social formations” (p. 628). Our immediate surroundings are critical to who we are, and we can use our sense of place to work to sustain the communities that nourish us.

Why Consider Place-Based Learning?

The problem of learning disconnected from experience was most obvious during the time I spent at a rural school. About half of the students were members of a local Native American tribe and many others depended on logging or agriculture for their livelihoods. When asked what they planned to do after high school, many said that they wished to find jobs close to home. While some mentioned college, it appeared that they knew this was the “right” answer, but they were not looking for a career that took them away. Additionally, these rural students and the suburban children where I did my student teaching did not find the

math and science taught in school related to their immediate lives. There was little motivation to tackle more difficult and abstract concepts except as needed to pass a course. A few young people were thinking about long term plans, but most wanted to know why they needed learn about proportions, scale factor, scientific theory, algebra, chemistry and many other topics. I felt that I needed a way to tie their learning to their current lives and make science and math relevant now, not just something they needed for college. Whenever I was able to gather science materials from a local pond for examination, bring in local plants, or have them share their concerns about the environment, the room came alive. Reluctant students spoke up and there was more energy in our discussions and observations. I realized that more than expensive curriculum, students wanted to share what they saw around them and discuss local environmental issues that impacted them on a personal level. They wanted to see *their* algae and *their* aquatic insects and *their* native plant species, and discuss *their* concerns about global climate change. Their point was entirely valid.

Theoretical Foundations of Place-Based Education

Place-based education (PBE) offers a potential solution to decontextualized learning since it is focused on concrete practices and grounds them in the local area and in the values place holds for the families who live there. As Howley et al. (2010) expressed, “Place, in this sense, refers to the nexus of culture and the interaction of local communities with *local land*: stewarding the land, cultivating the land, and inhabiting the land—investing it and accessing its already-existing complex meanings and varied usages” (p. 6). Limiting the physical scope of curriculum allows students to gain direct experience and gives them reasons to use

problem solving skills. Ecology and sustainability are an integral part of students’ lives and when students see themselves as part of the community, they are more invested in its economy and environment, and work to protect and enhance those aspects (Williams, 1998).

Sobel (2004), sometimes called the “guru of place-based education,” uses this definition:

Place-based education is the process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science, and other subjects across the curriculum. Emphasizing hands-on, real-world learning experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community, enhances students’ appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens. Community vitality and environmental quality are improved through the active engagement of local citizens, community organizations, and environmental resources in the life of the school. (p. 7)

This entails focusing the whole school and curriculum around specific community issues, making local people and institutions integral to the process (Endreny, 2009). Usually, there is a strong focus on environmental and community sustainability and these are deeply intertwined because the sense of belonging to, being dependent upon, and having responsibility for a particular place is a strong motivator for taking care of it (Cheak, Volk, & Hungerford, 2002; Howley et al., 2010).

The Foxfire project, started in 1966 in the Appalachian hills of Georgia by Eliot Wigginton and his students, focused on local history and language studies. Students collected and published stories and histories contributed by local residents, usually elders, who had lived in the region their entire lives. This place-based history and language arts model has been used in many schools throughout the country (Foxfire, 2005), but much less has been done to localize math and science instruction. This may be because the math presented in the classroom is abstract and bears little resemblance to math used in young people's daily lives. Abstract mathematics and science are a prerequisite for college, but math and science as *applied* disciplines are rarely experienced. Making learning transferable from the classroom to the community is important since math and science are promoted as a key to the "continued economic and cultural hegemony of the United States" (Howley, et al., 2010, p. 60), yet many students lag behind their international peers. These skills are also needed within the local communities.

The Importance of Community Involvement.

One foundational aspect of place-based learning is community involvement and this can take many forms. Services—medical, dental and social—can be coordinated through the school (Yamauchi & Purcell, 2009), after school programs may provide tutoring and enrichment, and local artists, business owners, and skilled crafters may offer learning opportunities in the classroom (Howley et al., 2010). Indigenous knowledge is honored and utilized, respecting awareness that has been handed down for generations and is still useful today. In this way, the culture of the community is utilized to make learning more relevant to the students. As Alaskan Frank

Hill observed, "Culture is not a subject matter, but a pathway" (quoted in Emekauwa, 2004). The school addressed issues that went beyond the classroom walls to encompass the world students interacted with daily. Most rural places have some residents who have lived and worked there for generations and these individuals can teach others what cannot be found in a textbook, imparting lessons that scientists and historians have yet to learn. If we want young people to work on the world's social and scientific problems, we need to offer them the chance to solve local ones first.

Using the Local Environment as a Focus for Interdisciplinary Learning.

As we become more aware of humanity's effect on global climate change and species diversity, efforts to educate students about the world around them become increasingly important. Place-based learning is concerned with the land and our relationship to it, making this type of curriculum a natural way of increasing students' understanding of science and mathematics. Students become involved in surveying land use, collecting environmental data, improving local waterways, and restoring native flora. There is a strong service component to PBE and projects can help student connect to more experienced community members, governments, natural resource personnel, forestry professionals, agriculture specialists, and long-term residents (Cheak et al., 2002; Hammer, 2001). This renders current place-based learning an almost exclusively rural phenomenon, and while some suburban or urban residents may have a similar connection, most do not interact as intimately with their immediate natural environment since land is too valuable as a place for homes or businesses to be left "unused." Fortunately, this is changing and there are a few examples describing how

learning anchored in urban or suburban places increased students' attachment to and concern for local areas (Endreny, 2009).

Scope and Limitations of Research

In an effort to gain a broad understanding of how place attachments are fostered, how they impact student academic outcomes, and what advantages they offer the larger community, I have undertaken a survey of the current literature. There appears to be little empirical research on student outcomes based on standardized measures, and much of the available research is in the form of monographs or articles in rural education publications. Of the information available through the Washington State University and The Evergreen State College data bases, little comes from peer reviewed research conducted in the United States. By surveying the available research, I discovered that there is a great deal of information on the concept of place-based learning, sometimes called place-conscious learning or project-based learning; a bit less on methodology; many examples of how various communities utilized this approach; and some research on student outcomes, mostly from other countries. Very few of these articles are both empirical and peer-reviewed. Because of this problem, I selected information from a variety of sources. The first four papers describe how place attachment and place identity is formed in three different locales. The next two studies are specific to science learning and describe how critical thinking and knowledge can be increased. I then show transformative examples of culturally relevant PBE in Alaska and Bolivia plus an example of an additive approach from Estonia. The final two articles are examples of successful PBE and offer suggestions for strengthening communities with this approach.

Examination of the Current Research Place Attachment and Place Identity

In order to build curriculum that is grounded in place, it is necessary to understand how a sense of place is acquired. Several studies from various disciplines addressed this issue from different perspectives.

What Do Residents Find the Most Notable About a Particular Place?

This first study was done in rural Massachusetts where residential growth is threatening the natural and agricultural character of a small town. Lokocz, Ryan and Sadler (2011) sought the answers to the question: How does local residents' attachment to the rural countryside affect their willingness to preserve the area. Researchers sent photo surveys to a random sample of households and 172 completed surveys were returned (34%). The survey sample was older than the median age in the area and often the survey was completed by the household, not a single individual so age and gender differences were not discussed. For the interview portion, a small sample ($n=10$) of representative residents participated in a one hour interview.

The Lokocz et al. (2011) demonstrated that preserving the rural quality of the area was important to both new and long-term residents, and they perceived both natural and agricultural aspects as the most important. Place attachment was seen in connection to special places and local landscapes and is not equally distributed to all parts of an area, with the new residents feeling as much connection as longer-term denizens. Those most interested in participating in land protection tactics were generally newer residents, but on the whole, all residents were less willing to conserve their own land because they saw this as reducing their options to sell or modify their properties. Farmers felt that all residents

want the visual beauty farming offers but that newer residents did not understand what actively working agricultural land entailed. The impact of growth must be planned to have a minimal impact on natural and agricultural areas while respecting the cultural landmarks such as churches and cemeteries valued by those living in the area the longest. Those with the strongest attachment to place grew up in the study area, suggesting that early childhood experiences are important in forming place attachment.

Increasing Attachment to Place Through Education.

Two studies using Arizona university students further defined how place attachment can be formed or strengthened. The first study was small and looked at place identity, “an emotional attachment to place,” and place dependence, “a functional attachment associated with the capacity or potential of a place to support the needs, goals, or intended activities of a person” (p. 1048). Semken and Butler Freeman (2008) gave 27 students pre and post tests to assess both items. They wanted to see if changes in attachment and meaning could be discerned in a student group over a 10-week course and if place-based teaching might increase their attachment to and richness of meanings represented by Arizona as a place. Students were selected randomly from a list of volunteers, with a distribution similar to the university as a whole. It should be noted that those who had the greatest initial attachment may have had a more positive reaction to this type of learning. In this small, preliminary study, a control group was not possible; there may be reasons for the outcome that were not considered, but researchers concluded with 95% confidence that after the geosciences course, both place attachment and place identity increased.

The second study was also done with a group of Arizona university students and researchers wanted to determine if students’ amount of *prior experience with a place* was correlated to *one’s sense of that place* (Semken, Butler Freeman, Watts, Neakrase, Dial, & Baker, (2008). Place was defined as “any locality or space that has become imbued with meaning by human experience” (as quoted in Taun, 1977 by Semken et al., 2008), and place attachment was “an emotional bond that develops from direct experience (e.g., living working, or vacationing in the place), vicarious engagement (e.g., through books or visual media), or some combination thereof “ (p. 138). According to Young (1999), the meanings of place are socially constructed and negotiated between those who distribute them (teachers) and those who construct them (students). The degree of emotional attachment and the richness of the meanings students ascribed to the Grand Canyon were related to the frequency and recency of visits there, and physically visiting the canyon increased this meaning more than when students interacted through videos, images or writings. Student responses were subjective, and some may not have had a positive connection with the place, but the link between visits and place attachment was correlated with a 95% confidence interval on the various measures, and showed that attachment increased with the number and frequency of visits.

Place Attachment in Transformative Education.

Not all places are rural or spectacularly scenic and most public school students do not have access to the resources available at a university. Endreny (2009) focused on the way 33 urban fifth grade children’s ideas changed during a unit on local watersheds. He wanted to know how students’ science conceptions transformed during a place-

based inquiry unit and how the unit influenced their view of the watershed. The participants from a post-industrial northeastern city represented a diverse mix of ethnicities, incomes, and skills, and included students with learning disabilities. A teacher-researcher did a qualitative study and designed, taught, and examined what happened in the classroom during the project. Concept maps, familiar activities for these students, were used before and after the unit to assess how student knowledge adjusted. Ideas that could be understood through direct experience were done outside the classroom, and more abstract concepts were taught using models and maps in the classroom. Every student was able to make progress towards standards-based objectives and saw watersheds as existing in urban areas. Most students only learned lessons that they experienced outside the classroom and failed learn concepts taught solely inside, either because they were not experienced directly or were more abstract in nature. At the end of the unit, students' found that the watershed held more meaning for them and wanted to keep it clean. This indicates that place-based learning is not solely a rural phenomenon and can be useful in urban and suburban settings if carefully constructed.

Attachment to and identification with place are not fixed and can be increased when people visit and spend time in an area, whether or not the area has a great deal of natural beauty. This is true for people of many ages and suggests that students who are physically engaged in studying a particular place will feel more connected to and more responsibility for that place.

How Place-Based Education Affects Science Learning

Buxton (2010) measured whether curriculum designed to be transformative in helping students understand their place in

the world would increase their understanding of science, even if that were not the reason for the lessons. Twenty-three middle school students were recruited for the one week course. Although self-selected, they represented a wide range of ethnic and socio-economic backgrounds and geographic locations within the urban city. The project was run at an urban seaside nature center that had access to the local marine environment. Mixed methods were used to determine if students made gains in their science knowledge. Data analysis of scored performance rubrics, interviews and presentations found that students' science knowledge improved in all areas tested. By the end of a week, "participants were able to generate more scientifically complete and correct responses to question related to the environmental health topics they had been studying" (p. 128). Growth in their thinking about "decolonization and re-inhabitation of their local environment" (p. 130) was noted. They also gained the type of science knowledge that is usually measured with standardized high-stakes testing.

Ernst and Monroe (2004) examined the relationship between environment-based education and critical thinking skills using a mixed-methods design in 11 Florida high schools. The control groups were taught using traditional textbook-based classroom models while the treatment groups adopted the local environments as contexts for much of their learning. Lessons for the treatment groups were project-based, student-centered, constructivist, and interdisciplinary in nature. For both the ninth and 12th graders, students in the treatment groups did significantly better than those taught in traditional programs, and both the Caucasian and non-Caucasian students made similar gains. The lessons had a significant positive impact on students' disposition toward critical thinking, and some of the students had critical thinking skill levels that "were

comparable to or exceeded those of college students in several American universities, as reported by test norms” (p. 517). Qualitative data indicated that environmental-based instruction seemed to influence critical thinking skills and disposition to critical thinking when it was multidisciplinary, consisted of open-ended projects that necessitated hypothesizing, investigating issues, and conducting research, made students responsible for their own learning, and provided opportunities for students to reflect so they could make connections to the “real and local purpose of their efforts” (p. 517).

Recommendations from the researchers are numerous. Suggestions included incorporating students of all skill levels, allowing students to participate in environment-based learning for multiple years, giving teachers the freedom to utilize environment-based education, using interdisciplinary approaches, and recognizing that the environmental context may only be useful when the other aspects of the PBE concept are included (Ernst and Monroe, 2004).

How Culturally Relevant Instruction in Place-Based Learning Affects Student Outcomes

Some populations are more invested in the benefits of place-based learning as they seek to maintain their cultural ties to the land of their ancestors and indigenous ways of understanding the world. The research of Whitbeck, Hoyt, Stubben and LaFromboise (2001), examined how traditional Native American culture affected the academic success of 194 fifth grade students from three reservations in the Upper Midwest. By controlling factors usually correlated with academic success, researchers wanted to find out if traditional culture offered unique advantages to American Indian students. Three measures of enculturation were used:

“1) involvement in traditional activities, 2) identification with American Indian culture, and 3) involvement in and importance of traditional spirituality” (para. 2). Because success is culturally defined, it was measured using self-reported school grades and positive attitudes toward schooling that were measured with 10 questions such as, “I do well in school” (para. 22). Statistical analyses showed that the older the student, the lower his or her academic performance, but that extra-curricular activities and enculturation were related to school success. Results showed that enculturation, even when other factors were controlled, increased school achievement. Studies involving other American Indian groups showed similar results, indicating that students who have a sense of belonging and congruence with their cultural heritage are more resilient, but due to the heterogeneity of Native Americans, these results may not be generalizable to other cultures. Yet, offering culturally relevant school experiences for these American Indian children had a positive effect on their social and academic development.

Yamauchi and Purcell (2009) examined a grass-roots course, the Hawaiian Studies Program started in 1995, aimed at reducing the Native Hawaiian dropout rate and low achievement level. The researchers wanted to know how community collaborations developed and what challenges they faced. Researchers carried out interviews and focus group meetings with numerous teachers and community organizations, with the snowball technique used to recruit additional outside participants. They wanted to know how community collaborations developed and what challenges they faced. Semi-structured interviews were conducted to find out the individual’s or group’s role in the program, what led them to become involved, and what barriers needed to be overcome. During the

2001-2004 school years, teachers, students, and others were observed and the data was analyzed to see what worked, what didn't and why. The educators incorporated aspects of the particular places the students lived, used a constructivist student-centered approach where members constructed their own learning, and actively involved community members in projects inside and outside of the school. This voluntary program was open to all 2000 students in the high school, but the usual number of participants varied between 60 to 100, and all students wanting in were allowed to join. The students and teachers learned together in ventures designed by both the students and other community members. Several themes emerged: Ownership and responsibility between the school and community members needed to be shared. Communication needed to be ongoing and frequent so commonalities could be built between the different stakeholders. And increasing standardization reduced participation in the program when the efforts were not complementary and productive. According to the researchers:

The goals of place-based education programs like the HSP are generally not focused on increasing standardized test scores, but rather on making education more relevant and engaging. Whereas many accountability systems focus on general learner outcomes that can be readily assessed by standardized tests, place-based education highlights the characteristics, problems, and solutions of particular communities. (p. 186).

Not all educators feel that standards-based reform and place-based education are necessarily at odds with one another and believe that standards should be used to develop lessons that focus on the bigger

concepts instead of particular activities. In Vermont, where there are place-based standards, teachers felt that the two aspects enhanced each other.

Over half the participants in this study are from a single ethnic group in a fairly isolated region, possibly increasing community participation. All had a strong desire to offer something more to the indigenous students and expended large amounts of time and energy to make the program work. This may not be the case when responsibility seems more diffused. Yamauchi and Purcell (2009) observed that with the advent of No Child Left Behind, the number of people and groups involved has decreased, indicating that some programs may not be sustainable in the face of ever increasing standardization (Yamauchi & Purcell, 2009).

Other countries have done studies that investigated how local knowledge is maintained in the face of social and cultural changes in indigenous populations. As formerly isolated regions are altered, there is an opportunity to discover how education affected the construction of local knowledge. A formal test of the connection between schooling and indigenous environmental knowledge was conducted in the Bolivian Amazon within a society of forager-horticulturalist (Reyes-Garcia, Kightley, Ruiz-Mallén, Fuentes-Peláez, Kemps, Huanca, et al., 2010). Schooling was not mandatory and used the local area as a context for learning. Both “the *theoretical knowledge* of informants—people’s ability to name, identify, and report the use of natural elements. . . . [Plus] self-reported *skills*, or people’s ability to put theoretical knowledge into practice (i.e., the ability to use plants)” (p. 308) were measured. Three years of data were collected and analyzed. Although there was a statistically significant negative relationship between the amount of

schooling and local environmental knowledge, the degree of this association was small. It was found that when there is a limited amount of time and resources, there is trade-off between schooling and local knowledge. Additionally, the more academically skilled individuals had the lowest local environmental skills. Most of the awareness of the local environment came from interactions with the elders and in exchanges outside of the classroom. There are many types of expertise that cannot be learned in the classroom and are either not mastered or time must be spent in nature to acquire them.

The study that collected data over the longest period of time was funded by the Rural Trust and conducted in Alaska by Emekauwa (2004) but did not go through the peer review process. Because of changes in accountability, the vast distances between rural schools, and a desire to “develop the untapped potential of indigenous knowledge systems as a foundation for rural/Native education in general, and science education in particular” (p. 4), a 10-year school improvement effort was launched. Called the Alaska Rural Systemic Initiative (AKRSI), it was designed to increase the involvement of Alaskan Native peoples and to apply indigenous scientific and non-scientific knowledge to what was taught in school. Of necessity, learning was deeply embedded in the local area. Educators wanted to make the knowledge interesting and useful both at home and still prepare students for college. Collaboration was needed between elders, parents, students, local schools, the state, higher education, and national interest groups. Test scores increased during all six years of the study, from 1995 through 2001 and the number of first-time AKRSI students enrolling in college increased by 49% over the duration while the number of students from non-AKRSI schools only increased by 19%.

Directors of the AKRSI program noted that “building an educational system with a strong foundation in the local culture produces positive effects in all indicators of school success, including dropout rates, college attendance, and standardized achievement test scores” (p. 8). Test scores for AKRSI students increased four to seven times more than for rural schools in general. The most important aspect of this program was said to be the inclusion and recognition of indigenous knowledge as a valid way of educating youth, providing communities with a stronger sense of responsibility for the education of their children. The extreme isolation and great percentage of Alaskan Native children may make their particular solution ungeneralizable to other regions, but does indicate that including indigenous knowledge from the local community has the potential to increase learning for students.

Although all these studies considered how learning was affected when indigenous culture was incorporated, this does not mean that other cultures do not also benefit when taken into consideration. The advantages of connecting learning to place is that many cultures—rural, ethnic, religious, urban, to name just a few—are not limited to particular places.

An Example of Additive Place- or Project-Based Learning

In an effort to balance the positive aspects of place-based learning with the possible problems, I diligently sought out opposing views, recognizing that negative results are not accepted for publication as frequently as are positive ones. In my search, I found only one example where using place as a basis for learning did not increase student learning and I include it here to demonstrate that not all methods that claim to be place-based fit the robust definition.

The researchers, Pata and Metsalu (2008) wanted to know if different teaching approaches led to greater understanding of various environmental problems such as acid rain, ozone depletion, global climate change, and air pollution and whether students could relate then on both a global and local level. Eight classes from seven different Estonian schools comprised of 204 students filled out an open-ended questionnaire before and after a week of environmental teaching. Teachers also filled out a questionnaire and researchers used these and information from lesson plans to divide the teachers into two groups, active teaching and traditional teaching. It was found that teacher-centered traditional methods worked best because students were able to develop both task and process related approaches and increased their social and contextual knowledge. The traditional method had the teacher lecturing from the front of the room in a structured manner and the students took notes. Textbooks and workbooks were used to further learning. This study is very limited because it was only one week long, and there was very little student-centered instruction, even when students were “actively involved in the knowledge-construction process” (p. 60). In the treatment group, the only outdoor activity was to go count the cars on the street to facilitate thinking about air pollution. Students also made posters and prepared a PowerPoint presentation. New knowledge was constructed during classroom discussions. The ability of students to gain discussion and questioning skills necessary to deepen their understanding in a single week after years of traditional schooling is questionable.

Examples of Successful Innovative Place-Based Science and Mathematics Curriculum

The monograph was researched in the U.S. and although not peer-reviewed, has a huge amount of information on using PBE for teaching mathematics. The second study gives several examples of projects using widely differing PBE approaches generated in Australia. Schools may be hundreds of miles apart and strongly supportive of PBE because of diverse student and community needs.

Howley et al. (2010) examined seven rural communities to see how mathematics was taught in their schools. They looked for common elements across the cases found that there were few universal elements of successful instruction. As Hattie discovered when he did a meta-analysis of meta-analyses, “nearly everything works to improve student achievement, and the few things that don’t do less harm than one might suspect. In the end, ‘what makes things work’ *well* is attention, reflection, and feedback” (as cited in Howley, et al., p. 58). The studies focused on the well-being of the local rural community, not just on the educational outcome of individual students and the continued success and existence of the schools was integral to the success of the community. The emphasis was on the health of the community as a whole, not just on the accomplishments of individual students.

The schools Howley et al. (2010) studied found ways to make everyday math deeply significant to students by grounding mathematics in place, and the learning was transferred from the classroom to meaningful applications in students’ lives outside of school. Parents and other adults who were interviewed for these studies found value in math and science as *applied* concepts their communities, but there were some who wanted their children to become top professionals and move away from the constraints of a small community. They saw traditional classroom abstract math as a ticket out. These families are not interested

in connecting math to place, “but cleaving ardently to the prevailing purposes of schooling—sorting students, conveying privilege across the generations, and ensuring widespread powerlessness among the losers” (p. 61). Having a stable rural middle class who value place is seen as important in sustaining rural communities politically, economically, and culturally.

In an effort to better understand the key elements needed for successful innovative place-based curriculum projects, Tytler, Symington and Smith (2011) collected data from 16 exemplary projects of 74 Australian School Innovation in Science, Technology and Mathematics (ASITSM) ventures. These used community-school partnerships to develop local curriculum projects that worked toward greater student engagement, made learning relevant to local problems, promoted current science practices, and paid attention to the ethical, social and personal aspects of science. They quoted Laugksch (2000) as arguing that while there is a strong push for a more science literate public, “the notion of an absolute definition of scientific literacy is an impractical idea. For all intents and purposes, scientific literacy depends on the context in which it is intended to operate” (p. 20). In order to improve student learning in areas of science, technology and mathematics, Australia funded over 350 projects where schools worked with community partners and all projects were locally created, planned, and executed with a focus on the practical application of new ideas. The goal was to improve the educational experience and learning outcomes.

According to Tytler et al. (2011), they uncovered the major themes arising from the best plans by interviewing project coordinators, initial applications, interim reports, other relevant documentation and vital personnel such as teachers, students,

community partners, and other stakeholders. Their questions hoped to reveal which ideas were most productive, how those ideas arose, what practices were most successful, who the partners were, what resources were required, and what the outcome was. They found that there was a lot of variation in the details, but all sought to engage students more fully. When students were actively engaged with solving problems present in the wider world, connecting with practicing scientists and other relevant operators, and seeing a need for the kind of expertise they were gaining, learning was increased more than in the traditional classroom. This new knowledge acquisition was rarely measured with standardized tests since they are not required by the Australian government. Teachers often deepened their content knowledge, gained confidence, and may have gained a greater sense of the vibrancy and power of science.

Some project examples Tytler et al. (2011) presented are summarized: *BioTech Units at Serendipity Sanctuary*: This was a four-year plan in sustainability to increase environmental awareness and included visiting scientists and other community members. *Marine and Environmental Education*: Scientists engaged student efforts to monitor fish and other environmental conditions in order to build up a data base and ended up creating other research and intervention projects. *Leading Edge Marine and Environmental Science Development*: This complex plan involved 16 schools in various projects designed to increase science and mathematics learning through a number of marine projects and develop curriculum projects. *The Kids Design Challenge*: In an effort to see science as useful in their everyday lives, elementary students focused design projects on building go-karts and the local environment by working with engineers and other professionals. *Waste Busters and Wind*

Gusters: Reality Science in Schools: Since the local area had a bio-reactor and there was a proposal for a wind farm, teachers investigated with their students the science behind these technologies. All these projects used the local areas as a resource and included both professionals and community members in their design. Teachers were co-learners and searched for ways to solve complex problems presented by the place in which they lived and the needs of the community, both economically and ecologically.

The most important finding was that teacher professional development was at the heart of their success. Educators came away with increased confidence and learned about current pedagogical and scientific practices by engaging in ongoing, long-term projects rather than by taking occasional classes or in-service opportunities. They developed stronger ties with the community and increased their desire to work within the environmental constraints of each area. It is hoped that teachers will be able to take what they learned and apply it to future programs. Also, the projects were designed to have an impact on the local communities, often in direct ways. Local innovation allowed local people to determine what happened in the school, exposing students and teachers alike to a wide range of new ideas and experiences. Assessments were changed to support the curriculum instead of tying the goals to a national test. Unlike traditional education, this type of learning increased the complexity of knowledge by conducting it within the context of the community and worked with its attendant problems and strengths (Tytler et al., 2010).

Much of the current research is coming out of Australia and what they are finding is that PBE works well for them. Unlike the U.S., there is a reduced focus on national standardization since they recognize that each locality has its own strengths,

weaknesses and resources. Students and communities are not standardized so neither is the curriculum and expected outcomes. There may be something the U.S. can learn from the Australian examples if we want to make our communities and environments sustainable.

Conclusion

The examples of place-based learning can be organized on a continuum from additive to transformative. The additive approach was the example from Estonia where instructors included a trip outside the classroom to count the cars on the street (Pata & Metsalu, 2008) while the best examples of a transformative approach were the exemplar projects in Australia (Tytler et al., 2010). Additive approaches may offer students the advantage of seeing that science and math are happening in the world around them and are readily integrated into existing curricula. Students could go outside to look at local plants around the school, visit a nearby stream or wetland, or look at the storm drain system and recognize that street pollutants go into waterways when it rains. When such items are included, learning can be more relevant for students while taking only a small amount of planning for the instructor.

A deeper use of place was exemplified by the use of Arizona, and the urban watershed as a basis for a unit that is important in students' lives. Lessons could focus on how water quality is affected by road building, logging, or farming. Students could test the runoff into permanent streams to look for sediments or pollutants. They could study the effect this has on fish, water quality, wetland habitats, and organisms that are dependent upon clean water. They could also compare photos from a decade or more ago to current ones to look for changes in soils, plant coverage, and other topological changes. If an instructor wants to take it a

step further, plans for mitigation of damaging effects can be designed. Students could present their findings to the community, work with professionals and lay persons outside the school, and come up with possible solutions that they help to carry out. When students become involved in solving local problems, the learning has become transformative. They have gone from simply studying the world around them to participating in protecting their environment and finding ways to resolve issues. Instead of believing and teaching that places can be altered to meet the needs and desires of the human inhabitants with little regard for the environment, a transformative approach respects the natural world and recognizes that humans are not separate but rely ultimately and completely on the world they inhabit.

When the ecosystem is used unsustainably, cultural diversity is usually a casualty as well. PBE can empower individuals to operate in both the local and global spheres in a powerful way since they have access to multiple ways of knowing and interacting. Long-term residents have a wealth of knowledge that educators can tap to give students a deeper connection to the world around them. Those who have cared for the land for decades both see the changes that have occurred over time and can help young people visualize what needs to be restored. Farmers who have been on the land for most of their lives know what plants were there before the plows took them out. They remember how deep the soil used to be, methods that did not require the use of large amounts of fuel, fertilizer, and pesticides. Farmers can also teach students about invasive species and suggest ways of controlling them and can participate in weed eradication programs initiated by the students and teachers. Some might be willing to come into the classroom to help the school design community gardens or re-

envision the surrounding landscape as a natural area.

Indigenous people have oral histories that tell of the time when the fish and wildlife were plentiful and they can explain the uses of various plants and other natural resources. Students can use this science knowledge to survey the flora where they live, describe their uses, and grow and replant damaged areas. Local crafters can teach students science concepts by explaining the chemistry behind making soap with wood ash and lard. Carpenters can explain the math they use to design and build furniture. The local bicycle shop owner can demonstrate how gears work, and students can practice the math of gear ratios, how much power or energy it takes to climb the hill to the school, and how far the bicycle travels with each turn of the crank. These are just a few of the possibilities, and although they take time and support from the school and community, more and more places are taking on projects that require time a depth of learning only found by engaging the whole community in place-based learning.

Connecting the school to the greater community benefits teachers as well. Learning can be coordinated between disciplines, building collaborative relationships within the school. Teachers become co-learners with their students and model learning strategies and allow students to be experts, not just novices. Educators who want to institute PBE are encouraged to work with administrators, existing community groups, local experts, and interested laypersons to build a foundation for support. Although it requires a lot of time and effort to fully implement PBE, additive approaches can help lay the groundwork for more extensive projects.

Environment-based programs can increase critical thinking skills that are needed to deal with the increasingly

complex environmental issues that face our planet. The ability to ask quality questions and to work both independently and cooperatively on current problems is a critical skill that can be taught using place as a nexus for learning. When individuals are able to claim the knowledge gained at home and synthesize it with new information gained in school, they become more capable. An education that respect and utilizes both forms of knowing can be transformative since there is less conflict between different ways of understanding the world. Many communities want students to achieve high standards without rejecting the values and knowledge of their places of origin.

Transformative education addresses issues of applied learning, who benefits from the type of education offered, and focuses on real gains in understanding deep concepts instead of small increases on standardized tests. The examples from Australia demonstrated that real learning occurred while simultaneously addressing real community needs so all benefitted. Students gained expertise in a current context, not just information they could check off on a test (Tytler et al., 2011). According to Bransford (2000), real learning requires that students have a deep well of knowledge on a topic, place this information in a conceptual framework, and have a way of recalling the information when needed. This is not possible if facts are not connected. Experts do not have better memories—they recognize what pieces are important and how they relate to other ideas. A transformative education allows students to make connections that are not apparent to the novice who sees the problem as discrete units and not a unified whole. While student learning may not be as quantifiable as data from a standardized test, there is evidence to support the claim that significant and transferable learning is enhanced using place as a context for learning.

Although the research that is available points to positive outcomes for communities which embrace place-conscious strategies, there is little empirical research to back the assertions. More needs to be done, especially studies that compare student learning using strong place-based methods with traditional ones. These need to be long term and the various approaches carefully noted. Because places and communities vary considerably, there will probably not be a single factor that works in all communities, but common factors can be uncovered making the establishment of effective programs sustainable for students, communities, and the environment.

References

- Bartholomaeus, P. (2006). Some rural examples of place-based education. *International Education Journal*, 4(6), 480-489. Retrieved from <http://www.eric.ed.gov/PDFS/EJ854303.pdf>.
- Bransford, J., et al. (Eds.). (2000). How experts differ from novices. *How people learn: Brain, mind, experience and school* (pp. 31-50). Retrieved from http://books.google.com/books?id=AA TXgm_I7NsC&lpg=PA1&ots=Kz-W6jt8pV&dq=bransford%20and%20bransford%20transfer&lr&pg=PR9#v=onepage&q=bransford%20and%20bransford%20transfer&f=false.
- Buxton, C. A. (2010). Social problem solving through science: An approach to critical, place-based, science teaching and learning. *Equity & Excellence in Education*, 43(1), 120-135. doi: 10.1080/10665680903408932.
- Cheak, M., Volk, T., & Hungerford, H. (2002). *Molokai: An investment in children, the community, and the environment*. The Center for Instruction, Staff Development and Evaluation: Carbondale, IL.

- Corbett, M. (2004). "It was fine, if you wanted to leave": Educational ambivalence in a Nova Scotian coastal community 1963-1998. *Anthropology and Education Quarterly*, 35(4), 451-471. Retrieved from <https://segue.southwestern.edu/userfiles/ANT3520301f08/Corbett%20It%20Was%20Fine...pdf>.
- Edutopia. (2007). David Sobel: Lighting up minds to the wonders of their world. Retrieved from <http://www.edutopia.org/david-sobel>
- Emekauwa, E. (2004). The star with my name: The Alaska Rural Systemic Initiative and the impact of place-based education on Native student achievement. The Rural School and Community Trust. Retrieved from <http://eric.ed.gov/PDFS/ED484828.pdf>
- Endreny, A. H. (2009). Urban 5th graders conceptions during a place-based inquiry unit on watersheds. *Journal of Research in Science Teaching*, 47(5), 501-517. doi: 10.1002/tea.20348.
- Foxfire. (2005). In *The New Georgia Encyclopedia*. Retrieved from <http://www.georgiaencyclopedia.org/nge/Article.jsp?id=h-2424>
- Gruenewald, D. A. (2003). Foundations of place: A multidisciplinary framework for place-conscious education. *American Educational Research Journal*, 40(3), 619-654. doi: 10.3102/00028312040003619.
- Gruenewald, D. A. (2003a). Foundations of place: A multidisciplinary framework for place-conscious education. *American Educational Research Journal*, 40(3), 619-654. doi: 10.3102/00028312040003619.
- Gruenewald, D. A. (2003b). The best of both worlds: A critical pedagogy of place. *Educational Researcher*, 3(4), 3-12. doi: 10.3102/0013189X032004003.
- Hammer, P. C. (2001). Joining rural development theory and rural development practice. Retrieved from <http://www.eric.ed.gov/PDFS/ED467305.pdf>.
- Jimerson, L. (2006). The hobbit effect: Why small works in public schools. The Rural School and Community Trust. Retrieved from http://www.smallschoolsproject.org/PDFS/RSCT_hobbit-effect.pdf.
- Howley, A., Howley, C., Klein, R., Belcher, B., Howley, M., Taday, M., Clonch, S., Perko, H., Foley, G., Pendarvis, E., Miyafusa, S., & Jimerson, L. (2010). Community and place in mathematics instruction in selected rural schools. Appalachian Collaborative Center for Learning, Assessment, and Instruction in Mathematics. Retrieved from <http://www.eric.ed.gov/PDFS/ED512400.pdf>
- Howley, C. B., Bickel, R. (1999). The Mathew Project: National report. Retrieved from <http://eric.ed.gov/PDFS/ED433174.pdf>.
- Johnson, J., Strange, M., & Madden, K. (2010). The rural dropout problem: An invisible achievement gap. The Rural School and Community Trust. Retrieved from http://www.ruraledu.org/user_uploads/file/Rural_Dropout_Problem_2010.pdf.
- Long, V., Bush, W. S., & Theobald, P. (2003). "Place" value: The rural perspective. Occasional paper. Appalachian Collaborative Center for Learning, Assessment, and Instruction in Mathematics. Retrieved from <http://www.eric.ed.gov/PDFS/ED478060.pdf>.

- Pata, K. & Metsalu, E. (2008). Conceptualizing awareness in environmental education: An example of knowing about air-related problems. *Science Education International*, 19(1), p. 41-64. Retrieved from <http://www.eric.ed.gov/PDFS/EJ890624.pdf>.
- Rogoff, B. (2003). *The cultural nature of human development*. New York: Oxford University Press.
- Semken, S. & Butler Freeman, C. (2008). Sense of place in the practice and assessment of place-based science teaching. *Science Education*, 92, 1042-1057. doi: 10.1002/sce.20279.
- Semken, S., Butler Freeman, C., Bueno Watts, N., Neakrase, J. J., Dial, R. E., & Baker, D. R. (2009). Factors that influence sense of place as a learning outcome and assessment measure of place-based geosciences teaching. *Electronic Journal of Science Education*, 13(2), 136-159. Retrieved from http://semken.asu.edu/pubs/semken09_sopfactors.pdf.
- Shamah, D. & MacTavish, K. A. (2009). Rural research brief: Making room for place-based knowledge in rural classrooms. *The Rural Educator*, 30(2), 1-4.
- Sobel, D. (2004). *Place-based education: Connecting classrooms & communities*. The Orion Society: Great Barrington, MA.
- Spring, J. (2008). *The American school: From the Puritans to No Child Left Behind* (7th ed.). New York, NY: McGraw-Hill.
- Tytler, R., Symington, D., Smith, C. (2011). A curriculum innovation framework for science, technology and mathematics education. *Research in Science Education*, 41, p. 19-38. doi: 10.1007/s11165-009-9144-y.
- Williams, B. (1998). The genius of place. Retrieved from <http://www.eric.ed.gov/PDFS/ED444793.pdf>.
- Yamauchi, L. A. & Purcell, A. K. (2009). Community involvement in a place-based program for Hawaiian high school students. *Journal of Education for Students Placed at Risk*, 14, 170-188. doi: 10.1080/10824660902854458.

Development of Academic Self-Efficacy Through Mastery of Self-Identity

The purpose of this research review was to investigate the question: How do students' self identities develop through schooling such that curiosity and the desire to learn seem to vanish by the time the student reaches high school age? Research literature was limited to mostly empirical studies from peer-reviewed educational and psychological journals. These studies were found under searches for research on self-efficacy, self-esteem, intrinsic motivation, imagination, MSLQ and cheating. The studies included survey data of participants ranging from third-grade to college age students. Including anecdotal data, participants were from multiple countries including various locations within the United States, Israel, Korea, Turkey, Romania, and Brazil. The combined total population of the studies reviewed exceeded 5,000 individuals. Conclusions were that students who adopt mastery-goal orientations tend to exhibit more positive adaptive behaviors than students who adopt performance-goal orientations. Teachers can, however, judiciously employ extrinsic motivators normally associated with performance-goal orientations that ultimately promote student adoption of mastery-goal orientation. The studies do, however, indicate that more research on the positive use of performance goals is necessary.

According to Booher-Jennings (2007), "High-stakes tests have become a central component of students' schooling experiences in America.... [Which exposes students to an] 'hidden curriculum' [in which a] key element of the hidden curriculum is the achievement ideology" (p. 150). In other words, the current K-12 environment appears to be highly performance based. The studies indicate that a focus on performance can have degrading effects on student learning, especially where "the mission [of schools is] to transfer knowledge [to the students]" (Passow, Mayhew, Finelli, Harding & Carpenter, 2006, p. 645). These studies indicate that when motivation is performance based (extrinsic), the tendency to cheat on assessments increases (Tas & Tekkaya, 2010). This could result in the undermining of assessments, unprepared students enrolling in colleges, and increased

cheating as students pursue higher levels of education (Tas & Tekkaya; Passow, et al.).

During the 2010 fall semester of student teaching I made several observations of the students I worked with: first, the students seemed to be highly focused on getting the "right" answer. What they considered to be the right answer was "right" as a function of validation by the teacher or the back of a text-book or both. I rarely observed students defend an answer to a problem based on knowledge they were learning in the classroom. Second, students' abilities to both hypothesize and use experimental data to make predictions were low to non-existent. Getting students to create their own hypotheses required a great deal of prompting. Third, I witnessed a range of student academic efficacy. Students with high academic efficacy were often self-motivated to work on projects. Students that appeared to have the lowest academic efficacy would simply give up and

not try, even when coached to try. Fourth, I witnessed a couple instances of cheating. Last, I witnessed many instances of students working extremely diligently to improve their grades as a result of extrinsic motivators. This included saying what the teacher was interested in hearing so that the teacher would give the student a rubber stamp in the student's journal (for grading purposes). Students worked very diligently to turn in late assignments just prior to grades being posted indicating that the grade for turning in the assignment meant more to the student than understanding the material.

A common thread in all of the above, I would argue, was that a good grade was the primary goal of many students; students are conditioned around performance goals. Gaining knowledge, learning, seems to be a very minor objective; mastery goals do not appear to be a part of student identity. One of my hypotheses is that the students I worked with were conditioned to run pre-determined experiments and copy pre-written conclusions to those experiments. In a practicum setting the previous spring, I witnessed the practice of watching a teacher have 9th grade general science students perform pre-determined experiments from the class science book. This included exercises where students copied information from the text to student lab journals.

My question, based on what I observed, was: How do students' self identity develop through schooling such that curiosity and the desire to learn seem to vanish by the time the student reaches high school age? For some, academic identity is based on how high one's grades are as a function of external judgement such as the teacher or peers (Shim & Ryan, 2005; Nichols & Utesch, 1998; Anderson, 2007; Bong, 2008; Tas & Tekkaya, 2010; Ma, Lu, Turner & Wan, 2007).

In thinking about the "fragility of knowledge" in someone who strives for

good grades but does not have interest in the subjects, it seemed functionally similar to someone who "cheated" to get a good grade: Neither student really knows the material. Feynman (1985) noted the effects of rote memorization when he went to Brazil to teach teachers:

After a lot of investigation, I finally figured out that the students had memorized everything, but they didn't know what anything meant. When they heard 'light that is reflected from a medium with an index,' they didn't know that it meant a material such as water. They didn't know that the 'direction of the light' is the direction in which you see something when you're looking at it, and so on. Everything was entirely memorized, yet nothing had been translated into meaningful words. So if I asked, 'What is Brewster's Angle?' I'm going to the computer with the right keywords. But if I say, 'Look at the water,' nothing happens—they don't have anything under 'Look at the water!' (pp. 211-213). I don't know what's the matter with people: they don't learn by understanding; they learn by some other way—by rote, or something. Their knowledge is so fragile! (pp. 36-37)

Where I would hope this research project would lead is to be able to bring focus on tactics that promote student intrinsic motivation and positive student academic self-efficacy in a way that demonstrates real learning and real improved performance. In other words, how can I transform older (grades 9-12) students from states of low academic self-efficacy to states of high academic self-efficacy? How can I help students incorporated mastery

goals into their self-identities so that they are mastery oriented?

In researching the development of student academic self-efficacy as a function of mastery goals in self-identity, I was able to find relevant articles on cheating. I was subsequently able to expand by searching for studies related to self-efficacy and schooling; self-efficacy and intrinsic motivation; self-esteem and schooling; and imagination and schooling. The studies were located via Elton B. Stephens Company (EBSCO) searches performed between November 2010 and February 2011. These academic searches were performed through the Evergreen State College's Library. All research studies were full text and peer-reviewed.

Literature Review

Theories that Informed Studies in the Literature Review

The sixteen studies I reviewed for this paper may be divided into the categories of "research on cheating" and "other." Other includes self-efficacy, goal orientation, motivational beliefs, self-esteem, personality traits, high-stakes testing, identity, and self-awareness. Of all the studies reviewed, I shall divide the theoretical basis of the studies into four major categories: external factor theories, goal orientation theories, maladaptive theories, and "Theory of Planned Behavior" (Passow et al., 2006, pp. 647-648).

The scope of the research included seven studies dealing with college level students including one study that straddled both high school and college. The studies were performed in Korea, Turkey, Israel, Romania and the United States. Most studies incorporated surveys to collect data with the exception that two of the studies were qualitative.

Self-awareness theory

Silvia & O'Brien (2004) define self-awareness as "the ability to focus attention on self as an object [and note that] a massive amount of research has connected self-awareness to aversive, dysfunctional and problematic outcomes" (p. 475). As an observation, it seems that performance-goal orientation and performance-goal avoidance include self/other objectification components (Shim & Ryan, 2005; Patrick, Ryan & Pintrich, 1999; Wolters, Yr, Pintrich, 1996; Nichols & Utesch, 1998; Booher-Jennings, 2008; Anderson, 2007; Bong, 2008; Tas & Tekkaya, 2010; Rettinger & Kramer, 2009; Yadin & Or-Bach, 2010; Finn & Frone, 2004).

However, one may observe that objectification of "self" does not always correlate with maladaptive results. Pure subjectification of self can be maladaptive too. Silvia & O'Brien (2004) cite an example by Rollo May where "dealing with ourselves as 'pure subject' is also maladaptive. Life has real constraints and real boundaries: If I try to act as 'pure subject,' free and untrammelled by the finite requirements of traffic lights and the engineering principles of how fast my car can negotiate the curve, I of course come to grief" (pp. 476-477).

In comparison with Silvia & O'Brien's description of self-awareness theory, my observation is that mastery-goal orientation includes self-objectification components. Those self-objectification components that foster positive cognitive strategies include metacognition and are necessary for higher self-confidence and positive self-efficacy, and are required for improved competency (Shim & Ryan, 2005; Patrick, Ryan & Pintrich, 1999; Wolters, Yr, Pintrich, 1996; Nichols & Utesch, 1998; Prabhu, Sutton, & Sauser, 2008; Yadin & Or-Bach, 2010; Finn & Frone, 2004).

External Factors

In a majority of the studies I reviewed, external factors appeared to play a theoretical role in the foundations of the studies. Booher-Jennings (2007) believed that individuals construct their identities through interaction in social environments. She theorized that the hidden curriculum, as a social construct, could affect student identities as learners such as performance-goal identities or mastery-goal identities. Similarly, Anderson (2007) notes that “[t]hrough relationships and experiences with their peers, teachers, family, and community, students come to know who they are...” (p. 7).

An external factor relating to studies focused on cheating was related to classrooms and schools. Classroom and school environments affect students’ choice to adopt mastery attitudes, or either a performance-approach or performance-avoidance goals (see for example Finn & Frone, 2004, p. 116). Yadin & Or-Bach (2010) noted that positive self-efficacy was affected by classroom environments. Specific classroom/school external factors included teachers, as believed by students, promoting mastery environments or goal oriented performance environments to include competition between students (Bong, 2008); test-performance orientation fostered by the state (Turkey for example) (Tas & Tekkaya, 2010); student culture where students observation of what other students are doing (cheating for example) (Rettinger & Kramer, 2008); the presence or lack of honor codes (Teodorescu & Tudorel, 2009); and classrooms that provide opportunities for success or not (Yadin & Or-Bach).

A second external factor relating to studies focused on cheating was related to the home. Pressure to perform by parents was reported to result in students adopting performance-goal orientations (Bong, 2008;

Finn & Frone, 2004).

A third external factor relating to studies focused on cheating was related to cultural contexts. In collectivist cultures there is a tendency for students to collaborate, even in testing environments (Tas & Tekkaya, 2010). Other studies go on to list other constructs as cultural. Most notably, when people interact with each other, norms of acceptable behavior to include cheating are developed (Teodorescu & Tudorel, 2009; Ma, Lu, Turner, & Wan, 2007; Rettinger & Kramer, 2007; Passow, et al, 2006).

A fourth external factor relating to studies focused on cheating was related to situational factors including beliefs that the coursework has relevance, whether the teacher was credible, or if the student felt that success in the coursework was impossible (Bong, 2008; Rettinger & Kramer, 2007,; Finn & Frone, 2004).

Goal Orientation Theories

Goal orientation may be divided into two main categories. These are mastery-goal orientation and performance-goal orientation. Shim & Ryan (2005) define mastery-goal orientation as “a [student’s] focus on developing competence and gaining understanding or mastery” (p. 335). They define two kinds of performance goals: (i) approach goals where students focus on having their ability judged positively; and (ii) avoidance goals where they focus on avoiding negative judgements of their ability. These definitions appear consistent throughout all studies reviewed. As noted in the following paragraphs, mastery-goal orientation and performance-goal orientation are associated with adaptive and maladaptive behaviors.

The theories regarding mastery-goal orientation noted in the studies generally posit that students with mastery-goal orientation choose more difficult tasks, they

are hard-working, they do not give up when they fail, exhibit high self-esteem, their motivation levels are high, cognitive retention is high, metacognition is high, and they exhibit high academic self-efficacy (Shim & Ryan, 2005; Patrick, Ryan & Pintrich, 1999; Wolters, Yu, & Pintrich, 1996; Nichols & Utesch, 1998; Bong, 2008; Tas & Tekkaya, 2010; Rettinger & Kramer, 2007). Mastery-goal orientation has also been associated with creativity (Prabhu, Sutton & Sauser, 2008).

The theories regarding performance-goal orientation noted in the studies generally posit that students with performance-goal orientations tend to consider the reasons for learning to be external. These external reasons include getting good grades, maintaining scholarships, and looking good in front of peers (Shim & Ryan, 2005; Patrick, Ryan & Pintrich, 1999; Wolters, Yu, & Pintrich, 1996; Nichols & Utesch, 1998; Bong, 2008; Tas & Tekkaya, 2010; Rettinger & Kramer, 2007). These same research papers also indicate a strong association with maladaptive behavior (which may include cheating) and performance-goal orientation.

Related to performance-goal orientation is performance-goal avoidance. Maladaptive behavior associated with performance-goal avoidance includes lack of motivation, avoidance of situations that would result in looking bad in front of peers (which may include cheating), negative confirmation bias (the student perceived a lack of knowledge and the bad test score confirmed the perceived lack of knowledge), and disengagement with the learning material (Shim & Ryan, 2005; Patrick, Ryan & Pintrich, 1999; Bong, 2008; Tas & Tekkaya, 2010).

Theory of Planned Behavior

Ajzen's theory of planned behavior as described by Passow et al. (2006)

“postulates that human behavior is guided by rational decisions that are influenced by both the intention to perform the behavior and also a perception of control over the behavior” (pp. 647-648). With respect to cheating, Passow et al goes on to state: “Intention is determined by three components: (1) attitude toward a behavior, (2) perceived social pressures to engage in or not engage in the behavior, and (3) the perceived ease of performing the behavior” (p. 648).

Within the above summarization of the theories that grounded the studies reviewed for this paper, several appeared related to the question of how students' self identity develop through schooling such that curiosity and the desire to learn seem to vanish by the time the student reaches high school age. Key external pressure theories that affect student-learning orientation promoting performance-goal orientations included external factors such as social interactions between student and community, teachers, peers, and family. Key external pressure theories that affect student-learning orientation promoting mastery-goal orientation included honor codes. Key internal pressure theories that affect student-learning orientation promoting performance-goal orientations included how a student self-objectifies their own ability in a subject, and how they perceive themselves in their classroom communities. Key internal pressure theories that affect student-learning orientation promoting mastery-goal orientation included ideas around metacognition. These ideas should be retained when reviewing section, which summarizes and synthesizes the findings of the studies.

Analysis and Interpretation of the Research Findings

I shall ground my analysis and interpretations of the research upon Silvia &

O'Brien (2004) conclusions of their paper in which they analyze research on balancing the positive and negative effects of self-awareness:

Social-clinical research on self-awareness has emphasized dysfunctional and maladaptive aspects of self-focused attention. Self-awareness certainly plays a role in psychological dysfunction, yet its role in constructive functioning should not go unnoticed. Without self-awareness, it would be difficult for people to take the perspectives of other people, exercise self-control, produce creative accomplishments and experience pride and high self-esteem.... Research suggests that people maximize their gain from their capacity for self-reflection when they set reasonable standards for themselves and when they feel optimistic about their ability to meet their standards in the face of setbacks and failures (p. 486).

The findings of the research I have reviewed are consistent with Silvia & O'Brien when one correlates objectification/subjectification elements with self-awareness, achievement-goal orientation, achievement-goal avoidance orientation, and mastery-goal orientation. The constructive elements of objectification seem to relate to metacognition in the case of mastery-goal orientation. The maladaptive elements of objectification seem to relate to pressure to perform (both external and internal) in cases of performance-goal orientation. The theories informing the literature reviewed may be strongly correlated with what Silvia & O'Brien have stated. A good example of student self-objectification found in the reviewed studies could be described by performance-goal orientation.

Maladaptive findings

Ten of the studies found that a combination of low grades combined with performance-approach goals and/or performance-avoidance goals result in maladaptive behavior. This included having low intrinsic value, high avoidance of challenge, a sense of helplessness, low self-efficacy and increased tendency of cheating (Silvia & O'Brien, 2004; Shim & Ryan, 2005; Ryan & Pintrich, 1999; Wolters, Yu & Pintrich, 1996; Nichols & Utesch, 1998; Booher-Jennings, 2008; Prabhu, Sutton & Sauser, 2008; Bong, 2008; Tas & Tekkaya, 2010; Ma, Lu, Turner & Wan, 2007; Finn & Frone, 2004). Of these ten research papers cited, seven used self-reporting surveys as their research instrument. Five of the studies used one of two (or both) standardized questionnaires developed within the psychological research community. The questionnaires included the Motivated Strategies for Learning Questionnaire (MSLQ), and the Patterns of Adaptive Learning Scales (PALS). Sample sizes of the ten studies ranged from a low of 315 participants to an high of 1950 participants.

With respect to being able to consider parental influence on student motivation, Bong's study (2008) of 10th and 11th grade students indicated that the parental-based high performance expectations that influenced student motivation were unique to Korean culture. However, Finn & Frone (2004) noted other studies that correlated parental pressure with maladaptive behavior (p. 116). I would therefore consider parental influence to be transferable to students who will be in my classroom when I teach.

The other studies, by themselves were also limited culturally but in combination point toward a common conclusion: Tas & Tekkaya (2010) were concerned with 7th grade students in Turkey; Shim & Ryan (2005) were concerned with mid-western

United States college age students; and the Ryan & Pintrich (1999), and Wolters, Yu & Pintrich (1996) were limited to a 95% Caucasian population of 11-15 year old mid-western United States middle school students. Performance-goal orientation resulted in maladaptive behavior.

Of the remaining three survey studies cited in this section, Finn & Frone (2004), and Nichols & Utesch (1998) are similar in four respects. First, they developed their own survey instruments. Second, they were culturally similar because they were both limited to the United States. Third, participation appeared relatively high: Finn & Frone at 315, and Nichols & Utesch at 571. Last, the age range for these two studies overlapped where ages 16-19 were found in Finn & Frone, and 6th to 11th grade age were found in Nichols & Utesch.

Two differences between the two studies were that Nichols & Utesch (1998) also included a treatment as part of their study because they were concerned with the effectiveness of alternative learning programs where the study was conducted in an alternative learning environment. The second difference was that Finn & Frone (2004) were concerned with academic dishonesty. With respect to the maladaptive effects of performance-goal orientations, their findings were consistent with the other eight studies: a combination of low grades combined with performance-approach goals and/or performance-avoidance goals result in maladaptive behavior.

Prabhu, Sutton & Sauser (2008) employed the What Kind Of Person Are You (WKOPAY) instrument in their study of a smaller population of 124 undergraduate students from a South-Eastern University in the United States. Their primary interest was in testing for correlations of motivation types with adaptive/maladaptive behaviors related to creativity. Again, with respect to

maladaptive effects of performance-goal orientation, their findings were consistent with the other nine studies as summarized above.

The remaining two studies, Booher-Jennings (2008); and Ma, Lu, Turner & Wan (2007) were qualitative studies. The sample sizes for these studies were low: 37 for Booher-Jennings (2008), and 51 for Ma, Lu, Turner, & Wan (2007).

The Booher-Jennings (2008) study was concerned with how gender role creation may be correlated to achievement. The study explored “what educators teach students about motivation and effort through high-stakes testing, how students interpret and internalize these messages, and how student hierarchies develop as a result” (p. 49). It was limited to third-grade aged students in Texas. The Ma, Lu, Turner & Wan (2007) study was limited to three middle schools in Ohio. It was concerned with on-line cheating. It asked what middle-school students attitudes were toward Internet plagiarism and Internet cheating were. Again and as summarized above, they showed that students who held a performance goal orientation were more likely to engage in maladaptive behaviors, such as self-identifying as a “failure” (Booher-Jennings, p. 159) because of low test scores, or cheating to avoid failure (Ma, et al., p. 79).

In sum, the combined total of participants in these studies was 5,041 students ranging from third grade to college level. Cultural demographics included populations from Korea, Turkey, and various locations within the United States. Gender appeared evenly split between male and female. Because of the fact that the combined number of participants is high, the cultural range is broad, the age range is broad, gender appeared to be evenly split, and all ten studies had similar conclusions, it would appear that there is reliable

correlation of increased maladaptive behavior to performance-approach goals and/or performance-avoidance goals when combined with low performance (low grades). All of these studies concluded that when students exhibited performance-approach goal orientations, their likelihood of maladaptive behavior (such as cheating or help-avoidance) increased.

Mediating findings

Even though many of the studies indicate a high level of maladaptive behavior associated with performance-approach goal objectives, a few of the studies reviewed indicated some positive affects. Anderson (2007) indicates that in mathematics classrooms, students must be able to have a positive mathematics identity within their classroom community (p. 12). In other words, some of the language Anderson used described a social need for students to associate with the external classroom. That is arguably an example of an extrinsic goal (the social desire to be included in one's peer group). Social constructivists highlight the role of the social context in learning (Ma, Lu, & Turner, 2007, p. 72): Social learning situations inherently include points of extrinsic motivation.

In this, Anderson's (2007) findings appear consistent with the study's theoretical foundation that states: "identity refers to the way we define ourselves and how others define us (Sfard & Prusak, 2005; Wagner, 1998)" (p. 8). Anderson's study appears limited to math classes; the survey sample was limited to 54 students from a rural high school setting.

In another study by seminal researchers (Wolters, Yu, & Pintrich, 1996), "[r]elative ability goal orientation positively predicted students' task value, self-efficacy, and cognitive and self-regulatory strategy use... Thus, assuming a relative ability goal

orientation in the classroom had a positive relation with motivational and cognitive processes as well as actual performance, independent of other goal orientations" (p. 17). In short, Wolters, Yu, & Pintrich seems to indicate that competition in the classroom is not always maladaptive.

Noting the validity analysis of this study from the previous section, Wolters, Yu, & Pintrich's (1996) positive finding on relative-ability goal orientation should be used with extreme caution where they note that for low achieving students who are not able to compete will probably not do well in an ability-goal oriented environment. In fact, they might be harmed in such an environment.

General external factors that were not labeled by the research as "extrinsic" included findings stating that students exhibit positive learning behavior where teachers provided students with individual feedback and individual learning support (Yadin & Or-Bach, 2010). Fin & Frone (2004) noted that students exhibit positive learning behavior when students feel a positive relationship with their school community and when teachers encourage "student engagement" (p. 121).

In sum, the above studies seem to correlate positive student social environments to student adoption of performance-goal orientations that correlate to a positive increase in adaptive behaviors such as a student self-identifying as a valued member of a math learning community (Anderson, 2007). With cautious respect to the maladaptive findings, support of positive student social learning environments should be included in my teaching practice to include extrinsic motivators. The caution also appears to relate to Silvia & O'Brien's (2004) comment on self-awareness and constructive functioning in regard to the perspectives of others.

Adaptive findings

Attitudes and situations that, according to studies, were helpful to student learning included the student's adoption of mastery-goal orientation, influences that promote mastery-goal orientation (peer and/or faculty), and student-perceived instructional relevance. Where students held mastery-goal orientations, it was found that those students were much more likely to seek help, employ self-improvement techniques, and avoid cheating behaviors (Bong, 2008; Tas & Tekkaya, 2010; Wolters, Yu & Pintrich, 1996).

Teodorescu & Tudorel (2009) found that the most significant positive influence that faculty can have on student learning orientation was to keep the quality of instruction high and relevant from the student's perspective (p. 281). Relatedly, other studies indicated that when the learning environment included established norms for positive behaviors that included advocacy for mastery-goal orientation and honor codes, students performed better and maladaptive behaviors such as cheating decreased (Tas & Tekkaya, 2010; Rettinger & Kramer, 2008; Shim & Ryan, 2005).

Conclusion

Based on my initial question of how students' self identity develop through schooling such that curiosity and the desire to learn seem to vanish by the time the students reach high school, it would appear from the studies cited that external factors influence student identity as learners. In many ways, the above studies, rather than simply answering my question, addressed some of the issues behind my question:

- I would like to have students who are curious and want to learn in my classroom.
- In addition to gaining content knowledge in the subjects taught in my

classroom, I want my students to leave my classroom with curiosity and a strong desire to continue learning.

- Since I know I have limited influence over student attitudes prior to those students entering my classroom, I want to be able to be able to maintain/resurrect a strong sense of curiosity and learning desire in my students.
- I want the knowledge gained by my students in my classroom to be deep and solid, not shallow and fragile as Feynman (1985) observed.

In my analysis of research cited in section 2, I believe I have a better understanding of how environments can first shape student-learning identity prior to entering my classroom on a theoretical/conceptual level. Secondly, the types of practices necessary to maintain/promote positive academic adaptive behavior. Third, some types of practices to avoid because those practices promote maladaptive behavior such as cheating. Fourth, I have a better idea of moderating practices and considerations that can both promote positive efficacy or cause maladaptive behavior.

As noted in the goal-orientation theories section of the analysis section in Section 2, the theoretical basis for ten of the studies reviewed indicated that students with mastery-goal orientation enjoyed higher levels of cognition than peers with performance-goal orientation. Studies by Teodorescu & Tudorel (2009), Tas & Tekkaya (2010), Rettinger & Kramer (2008), and Shim & Ryan (2005) indicated that learning environments can positively promote mastery-goal orientation. I expect to have a certain number of students enter my classroom with this prior experience shaping their learning identities. Those same studies also indicate that to help

maintain student mastery-goal orientation as well as promote mastery-goal orientation with students who are in the performance-goal orientation spectrum, I need to institute a learning environment that promotes mastery-goal orientation. Specific examples for how to do that in these studies are pretty thin: they simply advocate that the teacher promote mastery-goal orientation with their students. I am not quite sure how to do this “intrinsically.” A couple other examples advocated for tactics that helped students see the classroom content as relevant. Again, the statements were high-level generalizations.

Ten studies in the maladaptive findings section of analysis section indicate just how maladaptive performance-goal orientation can be, especially when performance is emphasized by authority figures such as parents and teachers as exemplified by Bong (2008). Again, the maladaptive behaviors that may manifest include cheating and help-avoidance.

Several studies, however, indicated that strategic promotion of performance-goal orientation can result in positive adaptive academic behavior leading students to adopt more of a mastery-goal orientation. This was noted in the mediating findings section of analysis section 2. Because of the social nature of learning in classrooms and students’ desire to have identities, relative ability-goal orientation was noted by Wolters, Yu, & Pintrich (1996) as having positive effects on students in moderating amounts. Other studies in this section indicated the positive effects of student learning when students felt that they were valued members of their learning communities. Because of the social nature of human learning as noted by Ma, Lu, & Turner’s (2007) citation of social constructivists, a little bit of extrinsic motivation promoting community appears to help promote positive learning identities.

The implication is that, according to the body of work reviewed, I, as a teacher, will have to actively promote mastery-goal orientation in order to help students maintain that orientation as well as to help students within the performance-goal orientation spectrum adopt a mastery-goal orientation. This will include strategic use of extrinsic rewards and promote short-term performance-goal orientation. Again, the studies did not provide examples of what the practices look like beyond generalized statements of what teachers should probably do. As noted too in mediating findings section of the analysis section, promotion of performance-goal orientation for the purposes of promoting adaptive learning identities is likely to be difficult because the potential of resultant maladaptive behavior is high. Questions therefore remain as to what best practices for using extrinsic motivation look like. Wolters, Yu & Pintrich (1996) “suggest that a coherent social cognitive model of goal orientation, motivation, and self-regulated learning is emerging that will be very fruitful and productive for future research on classroom learning” (p. 21).

Anecdotally, I have several thoughts on practices to try in my classroom that are informed by my research. First, by learning who my students are as individuals to include their interests I will have an opportunity to help students find relevancy in class content. Secondly, I believe that if classroom norms are created by my students that include honor codes, protocol for friendly competition to include a foundation that positively supports challenged students, I think I can apply some extrinsic motivation that could lead to student mastery-goal orientation. Last, I believe that I should probably advocate for mastery-goal orientation by simply raising student awareness of the different goal orientations. By doing so, I figure that students will be

able to be more conscious of their choices in adopting goal orientations.

In light of better ideas of what my teaching practice should include: a strong advocacy for mastery-goal orientation, a classroom environment that supports mastery-goal orientation, and a moderated use of extrinsic motivators, I believe I have set the stage and direction for subsequent research into classroom practices. A next step in my development will be to find out what specific teaching practices have been validated through research that I can adopt that will reliably result in student adoption of mastery-goal orientation in my classroom.

References

- Anderson, R. (2007). Being a mathematics learner: Four faces of identity. *Mathematics Educator*, 17(1), 7-14. Retrieved from EBSCO host.
- Bong, M. (2008). Effects of parent-child relationships and classroom goal structures on motivation, help-seeking avoidance, and cheating. *Journal of Experimental Education*, 76(2), 191-217. Retrieved from ERIC database.
- Booher-Jennings, J. (2008). Learning to label: Socialisation, gender, and the Hidden Curriculum of High-Stakes Testing. *British Journal of Sociology of Education*, 29(2), 149-160. Retrieved from EBSCO host.
- Finn, K., & Frone, M. (2004). Academic performance and cheating: Moderating role of school identification and self-efficacy. *Journal of Educational Research*, 97(3), 115. Retrieved from ERIC database.
- Feynman, R. P. (1985). "Surely you're joking Mr. Feynman!" *Adventures of a curious character*. New York, NY: Richard P. Feynman and Ralph Leighton.
- Ma, H., Lu, E., Turner, S., & Wan, G. (2007). An empirical investigation of digital cheating and plagiarism among middle school students. *American Secondary Education*, 35(2), 69-82. Retrieved from ERIC database.
- Nichols, J. D., & Utesch, W. E. (1998). An alternative learning program: Effects on student motivation and self-esteem. *Journal of Educational Research*, 91(5), 272-278. doi:10.1080/00220679809597554.
- Passow, H., Mayhew, M., Finelli, C., Harding, T., & Carpenter, D. (2006). Factors influencing engineering students' decisions to cheat by type of assessment. *Research in Higher Education*, 47(6), 643-684. Retrieved from ERIC database.
- Patrick, H., Ryan, A. M., & Pintrich, P. R. (1999). The differential impact of extrinsic and mastery goal orientations on males' and females' self-regulated learning. *Learning and Individual Differences*, 11(2), 153-171. doi:10.1016/S1041-6080(00)80003-5
- Prabhu, V., Sutton, C., & Sauser, W. (2008). Creativity and certain personality traits: Understanding the mediating effect of intrinsic motivation. *Creativity Research Journal*, 20(1), 53-66. Retrieved from EBSCO host.
- Rettinger, D., & Kramer, Y. (2009). Situational and personal causes of student cheating. *Research in Higher Education*, 50(3), 293-313. doi:10.1007/s11162-008-9116-5
- Shim, S., & Ryan, A. (2005). Changes in self-efficacy, challenge avoidance, and intrinsic value in response to grades: The Role of achievement goals. *Journal of Experimental Education*, 73(4), 333. Retrieved from EBSCO host.
- Silvia, P. J., & O'Brien, M. E. (2004). Self-awareness and constructive functioning: Revisiting 'The Human Dilemma'. *Journal of Social and*

- Clinical Psychology, 23(4), 475-489.
doi:10.1521/jscp.23.4.475.40307
- Tas, Y., & Tekkaya, C. (2010). Personal and contextual factors associated with students' cheating in science. *Journal of Experimental Education*, 78(4), 440-463. Retrieved from ERIC database.
- Teodorescu, D., & Andrei, T. (2009). Faculty and peer influences on academic integrity: College cheating in Romania. *Higher Education: The International Journal of Higher Education and Educational Planning*, 57(3), 267-282. Retrieved from ERIC database.
- Wolters, C. A., Yu, S. L., & Pintrich, P. R. (1996). The relation between goal orientation and students' motivational beliefs and self-regulated learning. *Learning and Individual Differences*, 8(3), 211-238. doi:10.1016/S1041-6080(96)90015-1
- Yadin, A., & Or-Bach, R. (2010). The importance of emphasizing individual learning in the "Collaborative Learning Era". *Journal of Information Systems Education*, 21(2), 185-194. Retrieved from ERIC database.

Reluctant Student Participation in ELL and Native English Speakers: Causes and Improvement

This literature review sought to answer the question of whether shyness in native English speakers can be compared to reluctance to speak in English language learners and how to increase participation in these groups. Peer reviewed empirical research studies that used the search terms shyness, affective filter, and reluctant participation were targeted. These studies were organized into two parts: Articles discussing characteristics of reluctant behavior, either shyness in native English speakers or affective filter in English language learners, including the connection between the two; and articles which tested ways to improve participation in reluctant participants. The study participants included both native English speakers and English language learners in pre-kindergarten through early college. The average age represented high school adolescents. Studies were conducted in the United States, Japan, and Canada. This literature review found that English language learners early in their arrival to an English speaking school have specific inhibitors to verbal participation, including the affective filter and cultural input. After the initial stage of adjustment, English language learners' reluctant participation can be compared to native English speaking classmates who are reluctant due to inherent or situational shyness. Lack of participation can inhibit learning by decreasing pragmatic language development, hindering vocabulary acquisition, decreasing self-esteem and lowering social interaction, thus lessening the opportunity to practice spoken English. Methods to increase participation in school age populations were reviewed, including providing a safe learning environment, group work arrangements, providing social surrogates, extra credit for participation, use of technology, and participation in sports.

The studies reviewed in this paper provide some insight into the question of whether shyness in native English speakers can be compared to reluctance to speak in English language learners and how to increase participation in these two groups. Reluctant participation in second language learning has an effect on how that language is learned (McCann et. al., 1986). In this paper, students who are “less vocally active” (Cameron, 2009, p. 299) are considered reluctant participants. Both English language learners (ELLs) and native English speaking students can have incidences of reluctant participation. Reluctant spoken participation in an English language classroom can stem from many different

causes. Long term effects of reluctant participation for ELLs and native English speakers include reduced vocabulary, lower social engagement, and lower self esteem (Cameron, 2009). Understanding the cause of the reluctance to speak may help teachers to determine the appropriate way to address reluctance for an individual student which will help lessen the negative effects.

During my teaching internship in a mid-level ELL class at a public high school, I noticed many ELLs who were reluctant to speak in class. I also noticed ELLs who were not reluctant to try out their new language, even though their skill level was much lower than other, more reluctant students. I began to wonder what the basis

was for the students who were reluctant to speak and whether their reluctance could be compared to that in native English speakers. For ELLs in an English speaking school, practicing speech is necessary to be able to perform required tasks and be successful in school. For native English speakers, the research suggests many possible consequences of reluctant participation in the classroom (Cameron, 2009). This study is important to educators because understanding reluctant student participation in the classroom community can help educators know how best to facilitate participation in their classrooms. If an educator wants to have a differentiated classroom for ELL students, it would be important to know why a student is reluctant to participate. If the student is reluctant because of shyness or because of the affective filter, the approach to addressing the lack of participation may be different.

When considering the topic of reluctant participation in language learning settings, a first step is to define what is meant by participation, reluctant behavior and shyness, and what the identified underlying causes of these behaviors are per the research. Also of importance is the consequence of non-participation. Does lower verbal participation really need addressing? Part of this analysis will include dispelling misconceptions about non-participation and stereotypes about those who are not comfortable participating.

Next, is the question of whether ELLs and native English speaking students can be compared. The issues of shyness, culture and the affective filter, which play differently for ELLs and native English speakers, need to be addressed. A major hypothesis of this paper is that, even though the origins of reluctance are different between the two groups, it could be valid to utilize some of the same methods to facilitate increased classroom participation

for both groups. Finally, it is necessary to offer options for what can be done to increase participation in the reluctant student and examine what improvement, or success, would look like for these students once participation increases.

Many of the issues needing discussion pose points of disagreement. Participation can take many forms, only one of which is the classroom spoken word. Defining participation is a point of disagreement. This raises the following questions: does a student's anxiety over public speaking represent a language problem, a literacy problem, or a social problem, and how do these potentialities reflect on academic achievement? There are different opinions in the literature as to whether anxiety gets in the way of learning or actually enhances test results. Also, there is some question to the viability of studies using subjects who are participation reluctant and may tend to drop out of uncomfortable social situations, including the studies themselves.

There are many areas of interest under the topics of shyness and reluctant participation and how these relate to English language learning. This paper does not attempt to address many of them. Of particular note is the absence of discussion on whether a shy student should be pushed to perform or if shyness should be respected as a personality type and how that would impact participation in the classroom. The current debate in the psychology field, regarding shyness being classified as a medical condition which can be diagnosed and treated, will not be addressed. This paper also does not discuss the very important aspect that each student should be treated as a unique individual. It is assumed that teachers will apply strategies presented in this paper with an eye to individual students' needs and will respect the diverse qualities individual students bring to the classroom.

Literature Review

The studies reviewed in this paper were gathered in fall, 2010, using The Evergreen State College's library system, including on-line journal searches via Educational Resources Information Center (ERIC), JSTOR and education and psychology databases. The original search terms included "shyness," "reluctant participation," "ELL," and "affective filter." Studies were selected based on peer review status, appropriateness to the research question, and whether the age of the subjects represented school-aged children through young adults attending school or university. Other adult learners of English were not considered appropriate for this review.

The major points of view in this literature review include the affective filter in language acquisition as being temporary, situational shyness as being self-correcting and not a detriment to language learning, and inherent shyness being a possible detriment to language learning and self-esteem. There are many different ways to participate in school. Listening, writing, reading and speaking are the primary methods of participation in the English language arts classroom. Listening, writing and reading are all silent activities, whereas speaking is not. Speaking in class can be difficult for some students. Reluctant participation in English language learning classes can be seen in one-on-one discussions with teachers, small group work, and whole class discussions. It can present itself on a spectrum from initial hesitancy, reticent participation, to silent shut down, with a refusal to acknowledge the teacher or other students. The literature reviewed in this section will first address affective filter and shyness, then negative effects of reluctant behavior followed by a section on cultural effects on shyness. The last portion of this section reviews articles on select models to improve participation.

Affective Filter and Shyness

For students of English as an additional language who attend U.S. schools, spoken language participation is necessary. When first coming to an English speaking country, many ELLs go through a silent period in which they are afraid to make a mistake when speaking English among native English speakers. This phenomenon was identified as the affective filter by Krashen in his acquisition model of language learning, a foundation model in the field of Linguistics (McCann et. al, 1986). Another premier language acquisition theorist, Chomsky, has a similar philosophy regarding anxiety and language acquisition. The affective filter is a reluctance which should resolve itself as the language learner becomes adjusted to her new surroundings and, through practice and comprehensible input, gains confidence to begin speaking. The phenomenon may look something like this:

[E]ven though a teacher may present a very comprehensible lesson, some students may not acquire the language of the presentation because their affective filter operates to block the input...On the other hand, when students are relaxed and engaged in a lesson, even messages that are not easy to comprehend will trigger the acquisition process. (Freeman & Freeman, 2004, p.39).

Therefore, when the affective filter is strong, it gets in the way of participation and language learning; when it is lowered, participation will increase and language learning increases as well.

The affective filter is specifically used when discussing acquisition of an additional language to one's first language. However, affect can compromise a student's ability to receive comprehensible input in one's first

language. When anxiety hinders the input students receive from being processed, learning is impaired (McCann, Hecht & Ribeau, 1986). Anxiety in first language students comes mainly from social anxiety or shyness. Shyness can be broken down into two main areas, situational and inherent (Lawrence & Bennett, 1992). Situational shyness is transitory in nature, in that it tends to come and go as the comfort level of the individual is tested. Once a situationally shy student becomes accustomed to a situation, the shy characteristics dissipate and interaction between the student and other participants in the situation become normalized. Examples of situational shyness would be mild stage fright or anxiety before a sports competition. Other incidences of situational shyness can be attributed to cultural and socio-economic status. Generally these types of anxiety will ease as the student gains confidence through participation.

Inherent shyness is not transitory in nature like situational shyness. Inherent shyness, Lawrence and Bennett found, is an “enduring personality disposition, influencing behavior across situations” (p. 258). Inherent shyness can be mild, debilitating or somewhere in between. The more mild the inherent shyness, the higher the student’s self esteem and thus the easier it is for the student to participate once they feel safe. For the debilitatingly (or painfully, dysfunctionally) shy students, the fear of having to perform can begin to shut down all systems to the point that no learning can take place (Lawrence & Bennett, 1992).

In their interpretation of data collected for their study regarding shyness and education, Lawrence and Bennett (1992) found a correlation between situational shyness and extroversion. The study had 650 participants ranging from 11–18 years old, randomly selected from two co-educational

schools in the United Kingdom. The subjects were given two questionnaires, one to assess situational shyness and the other to assess inherent emotional shyness. The results showed that low-level situationally shy students usually had a high-level of self-esteem, while inherently shy students had low levels of self-esteem. Low self esteem decreases social interactions and can negatively affect language development.

Lane (2007) offers insights into the nature of shyness. Lane described in detail many of the misconceptions associated with shy students in the public schools in both Great Britain and the U.S. These misconceptions include the opinions of some teachers that: shy students are dumb; that they are being difficult; that they don’t know the particular answer; they don’t want to be included; and that shyness is a ‘bad’ thing. These misconceptions can affect how teachers interact with shy students and how those students learn.

Negative Effects of Reluctant Behavior

One misconception about shy students is that they do not want to interact socially. This can lead to reserved students being overlooked by the teacher and other students. It has been postulated that the limited interaction between shy students and their teachers and peers narrows the opportunity for speech interaction and can result in loss of language development (Cameron, 2009). There is some debate as to how much of a deficit this lack of exchange is for native English learners. Coplan and Weeks (2009) addressed the effect of low-level social language participation on pragmatic language skills. Pragmatic language refers to “being able to use social contextual cues in order to understand a speaker’s meaning and to attain social goals through effective communication with others” (p. 240). Their study included 167 randomly selected

participants enrolled in 1st grade in 14 public schools in Ottawa, Canada. Participants' mothers completed a recognized questionnaire to rate child shyness and social disinterest at the beginning of the school year. In the middle of the school year, the participants were individually interviewed by 6 trained research professionals to assess pragmatic language ability. At the end of the school year, the participants were interviewed again and were administered the Social Anxiety Scale for Children – Revised, a recognized self-report measure of social anxiety. At this time, the students' teachers completed a child behavior scale to obtain an overall measure of social competence and skills at school.

The results of this study did not show a negative impact of shyness on language in general. However, it did show a significant “(albeit modest)” negative association between shyness and scores on formal tests of pragmatic language (Coplan & Weeks, 2009, p. 248). While the results did not suggest an “enormous and debilitating deficit in pragmatic language for shy children,” the researchers do suggest that “pragmatic language abilities may need to be developed and practiced in social contexts” so as not to have an increasing lag behind peers in social communication as shy students age (p. 248). The authors noted that interview type testing could interfere with results in shy students' language ability as the condition of shyness would present heightened anxiety and lower communicative competence in an oral testing environment.

Spre and Evans (2009) conducted a longitudinal study to explore the effects of shyness as a continuous variable on language and literacy in 89 first year preschool students who were followed through their completion of first grade. The participants were recruited via a consent

form and information letter sent to the homes of all students in 40 junior kindergarten classes from four school districts in Ontario, Canada. The 89 subjects represent what remained of the 142 children for whom forms were returned, less those for whom subsequent questionnaires were not returned during the three year study. The study relied on parent questionnaires and involved the children being tested individually in two sessions in their last year of preschool and again in first grade. The testing in preschool involved 5 different language development traits, while the testing in 1st grade involved 4 different skills tests. Shyness was rated and used as a continuous variable. The range of shyness within this variable was compared with the results of the language tests to determine if correlates exist between shyness scores and language performance. This study hypothesized that shy students would be at an extreme linguistic disadvantage, but the results of the study did not find this. However, shyness was found to be negatively related to the areas of vocabulary, fluency, and phonological awareness at young ages. The researchers concluded that “close attention be paid to extremely shy children so that their literacy skill development is not compromised in early grades” (p. 234). It should be noted that the selection method of the subjects might have provided a subject pool for whom parents are particularly diligent which may produce a validity issue.

Culture

A general discussion of shyness applies to people of many cultures when considering learning of their first language. There are specific aspects of shyness to consider for the learner of English as an additional language who attends school in an English speaking country, also known as immersion. The degree to which affective

filter is presented in ELLs may be dependent upon a number of things, including an individual's temperament. It would be pragmatic for teachers to consider ELLs as whole people, some of whom are shy and some of whom are not. Beyond the potential for individual shyness being a factor in the significance of the affective filter in ELLs, it may also be important to consider how much time the student has spent in the English speaking country; prior academic experience in the native country; and prior English experience in their native country, including whether that experience involved reading, writing and speaking practice (Mitchell and Myles, 2004).

Culture itself is an important consideration when discerning the cause for reluctant participation in ELL students. U.S. society promotes the success of the individual. Many other cultures promote the success of the group to preserve group harmony (Hinenoya & Gatbonton, 2000). When a known wrong answer is offered by a member of a particular cultural group, other members of that group will not provide differing answers as that would be self-promoting and would embarrass the other group member. Also, shyness is more acceptable and even embraced in cultures in which humility is valued. Student humility in the classroom creates a very different teacher/student relationship in many Asian cultures than that in the U.S. classroom, which are often run in a more democratic, loud and mutually respectful manner. The U.S. classroom can be very overwhelming to students from other cultures where making eye contact with the teacher is seen as rude and disrespectful, or where the classroom operating norm is teacher-lecturer with student as silent listener (Tebeau, 1977).

Understanding the origin of reluctant participation in students can help teachers decide how best to encourage participation in these students. While reluctant

participation in ELL students can be due to the affective filter in second language acquisition, extended reluctance might be due to lack of opportunity to practice in a natural setting. McCann et al. (1986) tested the affective filter hypothesis in relation to Krashen's "Natural Approach" to language acquisition, which supports using comprehensible input to facilitate second language acquisition rather than critiquing output. McCann had teachers administer a questionnaire to students in ESL classes on the first day of class at a community college in southern California. 238 students responded. The questionnaire collected demographic, communication apprehension and English language exposure data. The data collected regarding communication apprehension was compared to amount of English language input received. The study revealed a significant negative relationship between input and communication apprehension, meaning the more input the students had, the less apprehension they had. McCann found that the affective filter was lower in teaching situations which were based on giving the students input which is familiar yet a little beyond their current level, focusing on acquisition. This method was more effective than a traditional approach to language learning involving teaching grammar and openly criticizing the learner for grammatical mistakes (McCann et al., 1986). Criticism of students' grammatical errors often found in second language classrooms can raise anxiety which increases the affective filter and decreases learning. McCann found that, while communication anxiety seems to be higher in second language settings, it is also true for native English speaking classrooms, showing that anxiety gets in the way of both types of learners' ability to receive comprehensible input (p. 35). Once the ELL student has been in the English speaking country for a reasonable amount of time to

overcome the affective filter (usually 6 months to a year), receiving comprehensible input in a safe environment, continued reticence could be attributed to inherent shyness and/or cultural reasons, implying a need to readdress the approach used with these students to help them participate more. One limitation of this study is that the sample of 238 students is not clearly defined as random. No information is given regarding how many questionnaires were originally distributed, only that 238 were returned, which could represent a sampling of the most diligent of the students in the group given the questionnaire.

Select Models to Improve Participation

The following section reviews models to improve participation that include the use of social surrogates, group work, sports, extra credit, and technology.

Social surrogate. The research shows many different approaches to help lessen anxiety in reluctant participants thereby improving their participation in classroom settings. A common theme in the studies reviewed for this paper is reducing anxiety by providing a safe environment. Souma et al. (2008) proposed using a social surrogate as a strategy to help shy students adjust to new surroundings of university life in Japan. The subjects in the study were 70 undergraduate students from the same university in western Japan who were recruited from psychology classes. Each subject was paired with a friend from the class, if possible, and if not, a friend from university not in the class was allowed. Questionnaires were given to both parties in April, 2004, and again in November of the same year. Many of the questions asked for estimations.

The hypothesis was that a social surrogate would help the shy individual expand their social networks, thus allowing them to feel more comfortable and cut down

on anxiety. The study did show an increase in the social network due to having a social surrogate. Students who were most shy increased their social network less than those who were not as shy, but did still increase their networks over shy students who did not have a social surrogate. To apply this study to ELLs in U.S. classrooms may be difficult as the study was conducted in Japan with students averaging 18.7 years old and living away from home for the first time. The validity of the study is somewhat questionable in that the results were based on surveys filled out by the subjects and based on estimation. Aside from this, the study does reinforce the strategy implemented in many successful ELL high school programs of pairing newly arrived ELL students with someone from their country of origin who is fluent in their first language (L1), to accompany the new student throughout the day for the first few weeks in school, which often results in generating friendships and reducing the student's anxiety level. This increase in social engagement can also increase the student's self esteem, which has a positive relation to learning (Cameron, 2009). Many schools apply this approach for new, native English speaking students as well.

Group work. Group work gives members of a classroom community more opportunity to participate. Group work in the ELL classroom is complicated, but essential to help students with lower English comprehension by pairing them with students of the same L1 background. Complicating the forming of appropriate ELL groups are factors beyond a shared L1 background, including English language ability, academic ability and cultural differences (Cohen, 1994). For Kagan (1994) the ELL four person group work table usually consists of the highest level English language speaker facing the lowest level English speaker, with two intermediate

speakers sitting next to each of the extremes. This way the teacher can scaffold learning for the whole group and can utilize 'face' partners when the lower skilled English speaker will need the most help and 'shoulder' partners when a more equally matched pair can work to the students' benefit.

Another factor to consider when planning student work groups or pairs is the relation between extroverts and introverts. Mixing introverts with extroverts causes a number of potential pitfalls for the shy student: the probability that the extrovert will dominate the discussion therefore excluding the introvert; producing an even higher social anxiety in the introvert in the smaller group due to fear of embarrassment in the circumstance of losing an argument; and higher social anxiety due to fear of rejection by those who may have lost a group discussion/argument if the introvert wins (Nussbaum, 2002). Nussbaum (2002) noted two different types of group communication styles,

A conflictual style of argumentation, where individuals take sides and attempt to 'win' the argument, and a co-constructive style, where individuals take sides flexibly and work together to critique arguments and build new ones. (p. 184)

Nussbaum hypothesized that there would be a correlation between introverted students grouped together wanting to find a consensus and extroverted students grouped together becoming argumentative. The subjects in this study were 8 targeted, sixth grade subjects total, with 4 extroverts and 4 shy. They were all controlled for equal verbal ability based upon prior basic skills test scores. The subjects were videotaped in four, 28-minute group work discussions of dilemma questions relating to their unit of

study. The videotapes were coded into specific linguistic moves which each participant could make during argumentation. Inter-rater reliability was addressed by comparing the coding of two individual coders. The data in this study was found to be reliable, although the low number of participants may limit generalizations to other settings.

Nussbaum (2002) found that the extroverts talked more than twice as much as the introverts, and made greater use of contradictions and counter-examples which are indicators of conflict oriented talk. Introverts used more design claims, i.e., descriptions of how solutions should be designed in order to balance competing consideration. This leads to the conclusion that introverts work together to co-construct solutions to problems, whereas the extroverts were more adversarial in their discussions. Nussbaum then attempted to replicate the study using 54 pre-service teachers at the junior and senior college level, and found very similar results. Thus Nussbaum's findings appear as valid indicators of extroverts and introverts behavior in group work situations.

Although Nussbaum (2002) suggests further investigation is needed, consideration of his findings could be used when placing overtly shy or extreme extroverts in small group arrangements. Matching groups of all shy students could result in significantly thought out solutions with cooperative participation by all members and lowered self-protective measures of non-participation. Matching groups of all extroverted students could make for very lively conversations with strongly argued sides taking place. With these two same type groups, it is much more likely that shy students self esteem will stay intact, and that extroverted students would feel that they had the opportunity to take a stand and support it, which would also

support their self esteem. Mixing shy students with extroverts could result in the shy students experiencing fear and withdrawal, thus not participating, and the extroverts taking over the group in a less than satisfying way as the introverts would most likely not put up a fight, and an in-depth discussion would be less likely to take place.

Sports. A large subject study was conducted by Findley and Coplan (2008) which suggested the benefits of organized sports for the shy child. The rationale behind this study was that if shy children are given more opportunity to interact with peers through sports, their self-esteem would increase and their anxiety in social situations would decrease. The participants at the beginning of the study, Time 1, were 355 fourth and fifth grade students who filled out a questionnaire from memory regarding participation in sports. Participation included such sports categories as 'just for fun', 'at school', 'recreationally', and 'competitively' as well as several social areas. At the end of a year, Time 2, the remaining participants filled out the same social area questionnaire and a questionnaire regarding sports participation since the beginning of the study. The children were rated on a scale where shyness to aggression were the extremes. At the end of Time 2, there were 48 shy students, 42 aggressive students, and 110 middle range which were considered the comparison group. Findley and Coplan asserted that shy children had lower self esteem in three categories measured: physical ability, physical appearance and peer self esteem. They were more anxious and lonely and had greater negative affect than comparison children. This would support what is considered normal for shy children. The researchers also found that shyness in general for all participants decreased from Time 1 to Time 2.

Significant for shy subjects specifically was the finding that anxiety in shy children decreased significantly for those who participated in sports over the one year period. These shy participants also had increased self-esteem compared to those who did not participate in a sport. The researchers noted that "sports participation may be particularly advantageous for shy children as a buffer for some of the negative correlates of shyness" (Findley & Coplan, 2008, p. 159).

A critique of this study is in regard to the selection of subjects and perseverance of the subjects. As the 355 original students were given the opportunity to deny participation if they desired, it could be assumed that a large part of those who chose not to participate were shy, if not very shy. If the norm characteristic of the participants who dropped out were the very shy, then it would seem that the baseline data of what a normal cross section of the childhood population looks like could be skewed, as many very shy students could have self-eliminated before the study really began.

The total number of participants went from 355 at Time 1 to 200 at Time 2 means that 155 children dropped out of the study, and their data was dropped from the study at Time 2. While it was appropriate to drop these students' data from the study so as not to distort the data, it is necessary to question who those students were who dropped out. Shyness itself could be a large factor in dropping out of the study, which would mean that the disposition of the students who dropped out might warp the realistic application of this data to a 'shy child' norm. For the shy children who participated in the study and managed to complete it, the study shows that sports did have a positive effect on their anxiety and self-esteem.

Another concern is how the researchers determined what qualified as participation in sports and how they

quantified it. First, the data was taken directly as reported from 9, 10 and 11 year olds' memories. Also, although the categories of just for fun, at school, recreationally and competitively were noted, it does not appear that these categories were used to identify what type of sports activity the shy children participated in. If the shy children were mostly participating in recreational, neighborhood play, then stress would be lower yet social interaction with peers would be very valuable for shy children. But, if the 155 students who dropped out of the study were extremely shy students who were overwhelmed by the competitive nature of organized sports, then the data in this study should be strongly questioned. The researchers state, "It is possible that children who experience both social and sport-related anxiety develop mechanisms to deal with this anxiety, which translates into decreased anxiety over time" (Findley & Coplan, 2008, p.159). While this is probably true, it should also be considered that shy children develop coping mechanisms to many different stressors. Physical activity with peers is good for children, but it would need to be further addressed in research to determine if organized, competitive sports is really beneficial to shy children, or adds to their anxiety. Incorporating fun, scholarly games in the classroom could be a much simpler and safer way of increasing social contact and self-esteem in both ELL and shy native English speaking students.

Extra credit. Another option to help improve spoken participation in the classroom was addressed in a study by Sommer and Sommer (2007). The subjects were 49 students in a psychology course at the university level. Extra credit was given on a predictable intermittent schedule for substantive questions and comments made by the students during class. The researchers hypothesized that offering extra credit to

college students for vocal participation in lecture would increase participation. In an effort to not inadvertently punish shy students for continued non-participation, extra credit for office hour visits was also offered. The intent was to increase the quality of discussion in lecture by involving students who didn't regularly participate as well as improving student use of one-on-one time with faculty in office hours for students who were reluctant to participate in front of their peers.

The study found a significant increase in the number of substantive questions and comments raised in lecture and a moderate increase in number of office visits. One important aspect of the study was that credit for participation in class was offered only on alternate days. Despite this criterion, participation levels were raised on both extra credit days and non-extra credit days. This study indicates that offering extra credit for spoken participation does increase participation in college-level courses. The study does not, though, distinguish in its results which students increased their participation, the outgoing students who were participating all along, or the shy students who were not participating prior to the offer of extra credit. This option would be something to try in an ELL or mainstreamed English class to see if it increases participation from reluctant participants, although it might be wise to consider if it only increases participation from students who were already participating.

Technology. Huang and Leung (2009) tested the hypothesis that shy students would show a higher instant messaging use, possibly even addiction. In this study, random students aged 12-19 in an urban Chinese school were selected to take part in a questionnaire. 330 of the 388 questionnaires were returned, with 35% male students and 65% female students. The

questionnaire consisted of an 8 item addiction section, a 20 item internet addiction section, and a 13 item Likert-type shyness scale. A principle components factor analysis was used. The researchers found that shyness, along with alienation from family, peers and school, was associated with heavy instant messaging usage but not necessarily a predictor of addiction in Chinese teenagers. The results show that the higher the level of shyness, the more probable the subject was to be addicted to instant messaging. In other words, normal shyness might result in higher instant messaging use, but not addiction; while those who were addicted showed high levels of shyness. If shy students do use instant messaging and on-line chatting more, then it could be necessary to acknowledge that too much use might get in the way of school work, even though the students are participating in social activity which could be vital to their self-esteem. The higher number of female students participating might have skewed the number of respondents who classify themselves as shy since shyness has been found to be more acceptable in females than in males (Coplan & Weeks, 2009).

The use of on-line chat rooms and blog spots has been suggested to involve shy students. Redekopp and Bourbonniere (2009) found significant increased participation when conducting a blog literature conversation in a 10th grade advanced placement English class. The researchers categorized 19 participants into four levels of participation: 6 students who regularly participate in class; 5 students who occasionally participate; 4 students who rarely join in; and 4 students who participate only under extreme duress, and with limited offerings. Each student was randomly assigned a number to ensure their anonymity. Students were then required to participate in 12 online blog forums, each

centered around one of 12 questions regarding recent class readings of *Twelfth Night* and *To Kill a Mockingbird*. Student participation was recorded and categorized by length, interactivity, and value of contributions. The data collected from the online questions was compared to the individual student's categorized participation level. The researchers found that students who only participate under extreme duress were interactively engaged in multiple responses of high value and quality. The blog dialogues offered an interactive participatory experience that was not observed in the classroom setting and continued to be absent from the classroom after the blog activities were started. No difference in classroom activity by any level of students was observed by the researchers, during or after the blog opportunity.

The researchers believe that teachers who look to encourage involvement, discussion and collaboration for reluctant students could offer the blog activity as a safe way for shy students to have a voice and make informative, high quality contributions to the class. Although the subject count was low, the testing was authentic in that it occurs in an actual classroom as a part of their learning curriculum.

Although neither of the technology-based studies offer a solution for reluctant speaking participants' lack of verbal communication in class, they do address two areas of distinct importance to the shy student. First, social interaction with peers is necessary to a person's well-being and feeling safe is vital for truly shy students to be comfortable enough to participate in classroom conversations with peers in a true and effective manner, even though it is under the guise of anonymity. Both ELLs and native English speakers would appreciate acknowledgement of these conditions and will be helped by teachers

who can make the classroom as safe as possible with different opportunities for participation.

Discussion

The studies reviewed in this paper provide some insight into the question of whether shyness in native English speakers can be compared to reluctance to speak in English language learners and how to increase participation in these two groups. Part of the literature reviewed in this paper defines the origins of reluctant participation in ELL students and students who speak English as a native language. While ELL students can be reluctant to participate in class because of the affective filter and/or for cultural reasons (McCann et al., 1986), native English speakers are reluctant to speak due to situational or inherent shyness (Lawrence & Bennett, 1992). The literature suggests that after an ELL student has been in the English speaking country long enough to develop a foundation of skill, aside from cultural reasons, remaining reluctance to participate could be compared to that of native English speakers. Similar measures to invite more participation could be adopted for both groups (McCann et al., 1986).

While situational shyness usually resolves itself through participation, inherent shyness can get in the way of learning (Lawrence & Bennett, 1992). The loss of opportunities to practice speech results in potential loss of pragmatic language (Coplan & Weeks, 2009), vocabulary and social interaction, (Cameron, 2009), as well as the loss of receiving input in learning situations due to the shutdown response of shy students who fear having to speak in class (Lawrence & Bennett, 1992). These deficits imply a need to address shyness in class to help the student reach her full potential, in literacy and in social contexts. Addressing shyness can increase pragmatic language and thus improve social interactions,

increase vocabulary, improve speech, and increase self-esteem.

Recommendations

The literature review also offered options for increasing participation in the classroom. Creating a safe classroom environment is the first measure to take for all kinds of participation, reluctant or otherwise. Other methods discussed in the literature in this paper include providing a social surrogate, group work arrangements, offering extra-credit for participation, using technology, and involving the student in sports.

The social surrogate is shown to increase the social circle of ELL students, which in turn will increase their self-esteem and verbal exchange through an increase in social interactions. The social surrogate will also help the inherently shy native student, especially in new learning environments (Souma et al., 2008). Group work arrangements which place shy students together and extroverted students together is shown to have a positive effect on for both groups and is recommended over mixed groups of shy and extroverted students. Mixing ELL students who are still experiencing the affective filter with more reserved native English speakers can allow more access to comprehensible input for the ELL student, as the extroverted groups tend to be more aggressive and loud which can overwhelm the ELL student (Nussbaum, 2002). Increase in comprehensible input results in greater language learning for the ELL student (McCann et al., 1998).

Offering extra credit, using technology and involving the student in sports are three methods which should be used with caution. Offering extra-credit for participation has been shown to increase overall classroom participation and could have a positive effect on reluctant participants. Although this study was at the college level, it could still

be generalized to the high school level because students have opportunities for one-on-one meetings with teachers between classes, at lunch and after or before school. While the data does not separate increased participation between already active participants and reluctant participants, it could be worth trying the method while tracking the participation of the reluctant individuals. It would be important to be sure that all of the extra credit was not going to the already participating students, thus creating a deficit for the reluctant participants (Sommer & Sommer, 2007).

Technology in the classroom can offer an alternate means of participation for shy students. Anonymous classroom blog discussions have been successfully used to include participation among shy students while on line, although the increase in participation did not transfer to vocal participation in classroom settings. For the shy student who will not participate in regular classroom discussions, this format could be a valuable way to add their voice to discussions (Redekopp & Bourbonniere, 2009). For the ELL student, it would add their voice to the discussion, as well as give them extra writing practice, but it would not be a substitute for speaking practice. Speaking practice would need to take place in order for the ELL student to acquire English, and thus the use of technology would only be one method of assistance and not a cure-all. It is also important to acknowledge the high correlation between shyness and instant messaging. Although instant messaging is not suggested as a classroom method, awareness of excessive instant messaging in shy students as an alternative means to social engagement may be something to look out for and work with families to try to deter (Huang & Leung, 2009).

The research involving the reluctant student in organized sports was not a sound

study and does not lead to a recommendation as a solution for shy students. If the individual student enjoys sports, then it could possibly be beneficial, as an increase in social interactions will be inevitable (Findley & Coplan, 2009). For a shy student who does not want to participate, it has not been shown that forcing the student will benefit them.

Further Research

Further research is needed to firmly connect the reluctant participation of inherent shyness in native English speakers with continued reluctance of ELL students who are beyond the affective filter phase of language acquisition. More research on methods to respectfully assist shy students to engage in spoken participation in the classroom would be helpful. In addition, research studies as to how to advance English acquisition in ELL students who experience cultural shyness would be helpful, especially when respecting cultural differences is necessary for diverse classrooms.

An area not specifically addressed in this study would be important to consider next: How much should reluctant students be required to participate? Research specific to directly positioning reluctant participants in situations where their speech is required would be beneficial. Determining how hard to push students who are reluctant before their shyness shuts down input receptors (Lawrence & Bennett, 1992) would be invaluable information to the teacher interested in setting up a safe environment. Knowing the most we can expect from reluctant participants, while maintaining a safe environment, will allow teachers to offer the best opportunity for language growth in both native English speakers and English language learners.

References

- Cameron, C.A. (2009). Associations between shyness, reluctance to engage, and academic performance. *Infant and Child Development, 18*, 299-305. doi: 10.1002/icd.626
- Cohen, E. (1994). *Designing groupwork: Strategies for the heterogeneous classroom* (2nd ed.). New York: Teachers College Press.
- Coplan, R. J., & Weeks, M. (2009). Shy and soft-spoken: shyness, pragmatic language, and socio-emotional adjustment in early childhood. *Infant and Child Development, 18*, 238-254. doi:10/1002/icd.622
- Findley, L.C., & Coplan, R.J. (2008). Come out and play: Shyness in childhood and the benefits of organized sports participation. *Canadian Journal of Behavioural Science, 40*(3), 153-161.
- Freeman, D. & Freeman, Y. (2004). *Essential English: What you need to know to teach reading, ESL, spelling, phonics, and grammar*. Portsmouth, NH: Heinemann
- Hinenoya, K., & Gatbonton, E. (2000). Ethnocentrism, cultural traits, beliefs, and English proficiency: A Japanese sample. *The Modern Language Journal, 84*(ii), 225-240. doi:0026-7902/00/225-240
- Huang, H., & Leung, L. (2009). Instant messaging addiction among teenagers in China: Shyness, alienation, and academic performance decrement. *CyberPsychology & Behavior, 12*(6), 675-679. doi:10.1089/cpb.2009.0060
- Kagan, S. (1994) *Cooperative Learning*. (2nd ed.) San Clemente: Resources for Teachers.
- Lane, C. (2007). *Shyness: How normal behavior became a sickness*. Binghamton, New York: Vail-Ballou Press.
- Lawrence, B. & Bennett, S. (1992). Shyness and education: The relationship between shyness, social class and personality variables in adolescents. *British Journal of Educational Psychology, 62*, 257-263.
- McCann, L.D., Hecht, M.L., & Ribeau, S. (1986). Communication apprehension and second language acquisition among Vietnamese and Mexican immigrants: A test of the affective filter hypothesis. *Communication Research Reports, 3*, 33-38.
- Mitchell, R & Myles, F. (2004). *Second language learning theories* (2nd ed.). London, England: Hodder Education.
- Nussbaum, E. M. (2002). How introverts versus extroverts approach small-group argumentative discussions. *The Elementary School Journal, 102*(3).
- Redekopp, R. & Bourbonniere, E. (2009). Giving reluctant students a voice. *Learning & Leading with Technology, 36*(7), 34-35.
- Sommer, R. & Sommer, B.A. (2007). Credit for comments, comments for credit. *Teaching of Psychology, 34*(2), 104-106.
- Souma, T., Ura, M., Isobe, C., Hasegawa, K., & Morita, A. (2008). How do shy people expand their social networks? Using social surrogates as a strategy to expand one's network. *Asian Journal of Social Psychology, 11*, 67-74.
- Spere, K. & Evans, M.A. (2009). Shyness as a continuous dimension and emergent literacy in young children: Is there a relation? *Infant and Child Development, 18*, 216-237. doi:10.1002/icd.621
- Tebeau, S. (1977). *Cultural factors. A guide to understanding Asian ESL students*. Bilingual Education Resource Series. Olympia, WA: State Superintendent of Public Instruction.

The Impact of Masculinity and Gender Norms on Academic Performance

There have been many research articles written over the last few years that highlight the growing gender gap between male and female academic performance. This literature review looked at studies to see how much of a gender gap exists between male and female students, and looked at how masculinity and gender norms impact that achievement gap. The literature review also focused on students in Western countries and mostly focused on secondary students. Much of the research showed that female students tend to perform better in school than their male counterparts and that among males academic success is often viewed as a feminine trait. This literature review also showed that teachers play an important part in modeling and regulating gender norms, with teachers interacting differently with students based on their gender. Research has also suggested that male students have the ability to conceptualize how masculinity impacts their lives and that group interventions have shown success in improving the behavior and academic performance of male students.

After working as a teacher-intern during the fall of 2010, I noticed that quite often the best performing students I observed in my classes tended to be females. This was not necessarily because the female students I observed were naturally smarter than the male students in my classes, but they worked harder, paid more attention in class, and generally behaved more studiously. This led me to want to pursue research that discussed if there is indeed a gender gap in education today, and what could be the root causes of this difference in academic performance. Most importantly, I wanted to know how masculinity and the pressure to conform to gender norms impacted the education of adolescent students.

A nationwide survey reported in *The New York Times* that “72 percent of the girls in the high school class of 2003 - but only 65 percent of the boys - earned diplomas” (Lewin, 2006, para. 1). Also noted was that among non-white students the gender divide was even more pronounced with “59 percent of African-American girls, but only 48

percent of African-American boys” (para. 2) earning diplomas; and among Latino students the graduation rate was “58 percent for girls, but only 49 percent for boys” (para. 2). Also noted was that “unlike differences across racial and ethnic groups, boys and girls are raised in the same households, so it's not so easy to explain the differences by their community, or their income level” (para. 3). The article went as far to state that “among educators, it is common knowledge that girls outperform boys in high school and are more likely to go on to college” (para. 7), which suggests that other educators have also noticed the same patterns in today's classroom that I have in regard to academic performance. With the data showing that there is indeed a difference in the academic performance of male and female students, educators have to consider what could possibly be the root causes of this gap. Some theorists such as Sommers (2000) have even suggested that the schools and “misguided feminism” may be to blame for the achievement gap between male and female students, and that

schools should focus more on making school more appealing to male students. Feminist critics of Sommers have pointed out that her own book shows charts that state that girls still lag behind boys in taking calculus, physics, AP/honors chemistry, engineering and astronomy at the high school level (p. 25).

As a teacher-intern I noticed that the culture of the high school also has a huge influence on the sexual identity and gender norms of its students. This was rooted in that fact that while I was teaching I noticed a large amount of gender policing, i.e., the practice of students enforcing gender norms among themselves, and homophobia, which had a negative impact on the learning environment I was attempting to create. From what I could see, when it comes to motivation among males, one of the main issues was that it was not perceived as being masculine by some to perform well in school. In fact, the way to appear more masculine in the school setting appeared to be rooted in pushing back against authority and refusing to do work, which was also a very common trait among “the lads” that Finn (2008) had described in his study of British working class youth.

In regards to sexual identity and gender policing, male masculinity is also deeply involved in those issues as well. Most of the homophobia, sexism, or gender policing I observed during my student teaching was by male students who were attempting to elevate their own masculinity by dominating those students that are either not male or are perceived to be feminine. Kehily (2002) in her research found that “the fear of being called ‘gay’ in school acted as a powerful disciplinary technique for the regulation of male behavior and embodied social practices” and that “in the context of male peer group cultures, the inner fear of being called gay and the outer fear of being called gay involved young men

in performative displays of homophobia and exaggerated forms of masculinity” (p. 145). Female students would also enforce male gender norms by highlighting when male students behaved in what were traditionally unmasculine ways. Many of the research articles that I will discuss also showed a similar perspective when it discusses the ways that males behave in order to enhance their own masculinity (e.g., Wang, 2000). This made me consider if being masculine was more important to male students than actually performing well in school.

The issues around masculinity and gender norms have huge impact on every learning community and an even greater impact on the academic performance of adolescent males. This paper will discuss how masculinity impacts learning and education and will consider how teachers can effectively deal with its presence in the classroom. Much of the research also suggests that males perceive acting aggressively towards females and less masculine males and females as a way to establish masculinity (Wang, 2000).

One of the issues of this topic involves the debate on whether social pressures to conform to masculine or feminine gender norms have a greater effect on male or female development. While much attention is given to pressure that women receive to be more feminine, research shows that the burdens of appearing to be masculine may have an even greater impact on adolescent development (Galambos, Almedia, & Peterson, 1990, p. 1905). I also looked at research that discussed how teachers impacted the development of gender norms and how their views on gender norms affect their own teaching (Garrahy, 2001).

There is also some debate over how aware students are of the impact that the expectations of masculinity and femininity have on their lives at school, and the research showed various adolescent view

points (Kehler & Martino, 2008). This is important because if the students have the ability to conceptualize gender norms, this will have a tremendous impact on how teachers deal with these issues in the classroom. If students are unable to conceptualize gender norms, then what methods can teachers use in order to highlight implications of gender norms to their students?

While I primarily aim to look at how masculinity impacts male students and their academic performance, I will also discuss femininity and how perceived feminine traits are discouraged in male students. Masculinity is just one aspect of gender roles, and it is impossible to simply discuss masculinity without discussing its counter balance. Female students are also deeply involved in gender policing as well by reinforcing to male students what is considered masculine while pressuring female students to be feminine.

Through this study, I attempted to understand more about how masculinity impacts academic performance and how teachers can use this knowledge to help male students become more empathetic individuals who do not feel the need to aid in gender policing or feel guilty about appearing intelligent or studious in front of their peers. While issues of homophobia and gender policing were discussed, all of the research I looked at focused on cisgendered students, with no mention of how masculinity and femininity impacts transgendered students, which is definitely an overlooked segment of the school population. All of the research that I looked at was also based on observations and interviews with students in Western countries, with most of the research focused on secondary students. While there is plenty of research that shows the detrimental affects of feminine gender norms on women, this study is intended to primarily be

focused on how masculinity affects the academic performance of male students.

Literature Review

These studies were gathered mostly from JSTOR and Education Resources Information Center (ERIC). The initial search terms “gender,” “learning,” “masculinity,” and “education” were used to identify potential studies for my literature review. The studies that are discussed were chosen because they represent original scholarly research, they took place in the United States or similar Western countries, and they specifically addressed how gender norms and masculinity impacted education. The paper is divided into three sections with the first section discussing how gender norms impact student learning. The second section discusses the impact that teachers have on gender norms and the third section discusses some potential solutions to dealing with issues of male masculinity in an academic setting.

Gender Norms and Student Learning

There is much research pointing out that gender has a large impact on the learning and school experience of many students. While most research seems to point at a gender gap that does in fact exist among male and female students, the rationale and the extent to which it exist is still debated among researchers. For example, gender norms are very much regulated in schools and this becomes most prevalent during adolescence due to what is known as “gender intensification”. The concept of gender intensification refers to the hypothesis that “behavioral, attitudinal, and psychological differences between adolescent boys and girls increase with age and are the result of increased socialization pressures to conform to traditional masculine and feminine sex roles” (Galambos, Almedia, & Peterson, 1990, p.

1905). Galambos, Almedia, and Peterson interviewed and conducted group assessments on 200 middle school students and correlated their responses by where they were at in terms of adolescent physical development. This research showed how “gender intensification” influences the ways in which male and female adolescents behaved as they aged and concluded that there is more emphasis placed on males to adapt masculine characteristics than there is for females to adapt feminine characteristics during adolescence. The research also stated that although differences in masculinity and sex role attitudes increased across age groups, sex differences in femininity did not increase. The researchers then concluded that although their results supported the idea of gender intensification, the idea that it is brought on by puberty may not have been as strong as they had hypothesized prior to conducting research.

One of the possible limitations of Galambos, Almedia, and Peterson’s (1990) results could come from the fact that their research was drawn solely from two successive cohorts of students at one middle school, and that the school they researched was primarily made up of white, middle to upper middle class students. If this research were done at either a lower income school or included lower income students in its sample, then it could have possibly shown very different results. The way that masculinity and femininity was measured in the study was also limited by the researchers’ measurement of the dependent variable. In the research study students were asked how they would describe themselves based on preselected adjectives that were perceived to be more feminine or masculine. One of the examples they provided was the term “yielding,” which is not a word that middle school students often use in the context presented, and could be troubling since middle school students were the group

in which the research was conducted on. Although there are various reasons why this research study’s finding might not be universal, it does highlight the perception that male students often feel more pressure to conform to gender norms than female students.

Research also showed that academic success for males can often be perceived as a feminine gender norm by other male peers. Renold (2001) stated in her research that “many boys were learning the hard way, and early on in their schooling careers, that studiousness and academic success conflict with conventional forms of hegemonic masculinity” (p. 381). Her research used data from observations and group interviews conducted with 59 6th year students at two different British schools over a year long period. During the interviews the participants were encouraged to bring up their own issues and experiences so that their responses could later be analyzed. Her research concluded that female students who performed well in school were also often mocked by male students during her research. In her research she also found evidence that shows how males who are academically successful often take on and manage “alternative masculinities” that allowed them to succeed in the classroom. Renold stated that occasionally students who performed well in school would often play down their achievements and use humor or goofing off, as a way to make sure that they are not labeled as a “square” or a “geek” by their classmates. Renold concluded that the best way to deal with issues around masculinity and academic performance was to address it at the beginning of children’s school careers, when “the discourses surrounding ‘achievement’, ‘masculinity’ and ‘schooling’ are already firmly shaping boys’ and girls’ gender and learner identities” (p. 382).

While Renold (2001) addressed the concept of “alternative masculinities” as a way of dealing with the stigma attached to being a male student who excels in school, she was not able to cite any convincing examples of what that looks like in her research. Renold gave an example of a student named Stuart who was originally teased for being a high achieving student, but later became a good goalie for the soccer team and gained the acceptance of the students that used to bully him, even though he was still performing well in school. While this story shows how a student can perform well in school and still be accepted, it suggests that Stewart adopted more traditionally masculine traits to be accepted rather than adopting an alternative masculinity. The most important thing this study does highlight is that there is definitely a perception that being a good student as a male is counter to what is considered to be masculine in many of today’s schools.

Another example of adolescent males’ resistance to learning and being labeled feminine comes from participating in video game play. Sanford and Madill (2006) researched the impact that video game play has on the masculinity of young men. During their research they observed and interviewed 2 groups of video game players over a 1 year period. One group consisted of 6 middle school students and the other group consisted of 5 young adults. The interviews were also coded using NVivo text analysis software program which mapped, searched, synthesized, and analyzed the data so that the researchers could recognize themes of significance. This research showed that video games appeal to not just to students that struggle in school, but also to those who perform well with traditional literacy. Sanford and Madill also focused on how video games reinforce traditional views of masculinity, but at the same time they

allowed young males a space to experiment with their identity by offering them a place in which they can also resist traditional masculinities. Their research found that in many ways video games are considered to be a form of resistance against the traditional learning practices of schooling which are considered to be more feminine. They also stated that videogame representations of “gender, race, and sexual orientation are generally uni-dimensional and highly stereotypical” (p. 302) and that they can “serve to reinforce societal prejudices that maintain hegemonic patriarchal power structures and understandings of the various types of resistance available to players are not recognized and encouraged” (pp. 302-303). The researchers also concluded that video game play did not lead to adolescents challenging stereotypes or becoming more aware of their privileged positions of power, and instead cemented traditional stereotypes into place.

Some of the limitations of Sanford and Madill’s (2006) research are that it only included 11 adolescent males who all lived in the same geographic area. The adolescents interviewed for their research were mostly from white, middle-class backgrounds, which makes their research limited. A bigger population and more diversity among the people who they interviewed could have had an impact on the results, but since the main focus was on video game play, the results may be similar across race and class lines. Sanford and Madill also gave very little explanation over how they arrived at their results other than their own personal interpretations of the interviews that they conducted, and what they witnessed from the males that they observed. The research does highlight where males were receiving information about gender norms and how their activities

outside of school impacted their views of other men and women.

Research shows that physicality is often used in schools by male students as a way of asserting masculinity among peers. Swain's (2003) research looked at the importance that the body of young male students had on their peers and how it is used to construct the dominant and subordinate forms of masculinity. Swain's research was conducted by observing and conducting 104 interviews over a one year period with 10 to 11 year old students in schools around London and analyzing their responses by analyzing how they utilized their masculinity. In his research Swain found that through physical interactions between males, masculinity was brought into action as a way of subordinating students. Swain also suggests that although the most common resources used by males to show masculinity are physicality and athleticism, students also use their body in order to look tough and hard. Through this process boys use the body as their main resource in constructing their masculinity and to gain peer group status. Quite often the best athletes are generally the most popular students at their school. Swain also found that students often feel that they are unable to back out of fights in school, because they fear that they will be ridiculed. One student in the study pointed out that if a boy is considered too nice, people will think that he is soft or less masculine. Swain also concluded that using the body to construct masculinity also affects the schools, when the "official practices of the school attempted to regulate and control the bodies to render them docile and receptive, the boys in this study were full of activity and agency" (p. 311).

Swain's (2008) research was conducted in 3 very different schools with different class backgrounds, but one of the limitations faced by his conclusions comes

from the fact that all of the schools researched were located in London. The research could have had potentially very different results if a much larger geographic area was covered. Much of the results that Swain received from his research are also based on his own personal interpretation as to what the data he collected meant. While the findings correlate with other research in this area, classroom observations and interviews can unconsciously be made to back the findings that the observer already believes to be true. This study does show examples of how the research participants expressed their masculinity, often at the expense of other students.

How Teachers Effect Gender Norms

In this section studies focused on how teachers allow gender norms impact their classrooms. This section also covers how teachers are very much a models and regulators in deciding how gender norms are implemented in their classes. For example, Garrahy (2001) conducted research that comparing the teachers' gender beliefs to how they acted and taught in their classrooms. The research was conducted by interviewing and observing 3 Midwestern white female teachers as they taught third grade. Garrahy's research concluded that third grade teachers occasionally diminished, but mostly contributed to, gender differentiated schooling between male and female students. Most of the teachers in the study stated that they taught from a "gender blind position," i.e., meaning that they do not take the students gender into account when teaching. Garrahy concluded, however, that those teacher's actual beliefs did not match their practices. Garrahy also makes the case that "gender blindness" is also very similar to the idea of "color blindness", in which a teacher attempts to be fair by ignoring the cultural and racial differences in students. The research

concluded that this only provided most of the teachers with a false sense of objectivity and impartiality, and that it did not lead to them to teach their students the same based on their gender. One of the examples that Garrahy noted was that many of the gender blind teachers often based their classroom activities around boys and often made accommodations to better suit their needs. Garrahy, also stated that she was surprised when the one teacher that stated she viewed differences in the way her students acted based on their gender, was later shown to not demonstrate any gender biased behaviors in her classroom, unlike her gender blind colleagues.

The results of Garrahy's (2001) research were solely based on the observations of 3 elementary school teachers in a small almost exclusively white community in the Midwest over a 15-week period. The sample is much too small to draw very broad conclusions based on its results. The results in this instance do highlight a trend in which teachers tend to be more accommodating to the educational needs of male students over female students (Jones & Myhill, 2004, p. 547).

Due to the perception of a gender gap in schools, teachers often tend to have different expectations of their students based on their gender. Jones and Myhill's (2004) research consisted of observations of 36 classes between first and tenth grade and interviews with 40 teachers and 144 students in both urban and rural settings. Their research found that teachers tended to view male and female students quite differently and that to teachers, their students often seem to conform to gender expectations such as the high-achieving girl and the low achieving boy. Their research also noted that high achieving boys were seen to challenge gender norms and that underachieving girls were often overlooked, since the perceived characteristics of the

high achieving girl are seen as describing all girls. Like Garrahy (2001), Jones and Myhill (2004) found that while over 80% of teachers stated that they expect boys and girls to get the same results in their classes, quite often their practices failed to reflect this. During the research, Jones and Myhill took a tally on comments made about boys and girls and found that 54 positive comments were made about girls with only 22 comments being negative. Boys on the other hand only received 32 positive comments with 54 negative comments. They also noted that most of the teachers' comments concerned the students' behavior, which means that gender difference is most often associated with behavior rather than in terms of academic achievement. They concluded that it is better for teachers to look at students as complex individuals rather than categorizing them together based on their gender.

Jones and Myhill (2004) based much of their results on what they saw in the classrooms they observed, which to them pointed out that under-achieving girls are overlooked. While the schools that the research was conducted at where both urban and rural, a limitation faced in their study is that all the schools were predominately white and middle class, leaving out how lower income schools are affected. This study does provide a powerful example of how the perception of boy's being lower achieving affects the ways in which male and female students are generally treated in the classroom.

Female students also have a basic understanding of masculinity and this allows them to use sexuality in order to combat the legitimacy of masculinity in the classroom. Skegg's (1991) research examined the extent in which institutionalized masculinity and gender impacts the difference in classroom interaction between teachers and students. Skaggs observed and conducted

interviews with 83 female college students over a three year period and concluded that a women's educational experience almost always involves developing tactics to deal with "institutionalized powerlessness in the form of sexual harassment from both male teachers and male pupils" (p. 129). Skaggs also found that by allowing the behavior to be normalized, females become implicated in the normalization of male masculinity. Her research also found that masculinity is often normalized and institutionalized within higher education and that often times classroom interactions are sexualized at female student's expense. This practice included innuendos about female students' sex lives. Skaggs also points out that if consent towards this type of behavior is withdrawn, than the boundaries for acceptable behavior has to be moved in a direction that is more appropriate to female students. The study also showed that the study's female participants were well aware of how masculinity affects their daily lives and understood the steps they could take to challenge it.

Since Skaggs' (2008) research was only conducted at one school, its findings are limited and cannot be considered applicable to all adolescent females. For more comprehensive research on this topic, a researcher would likely want to interview a much wider spectrum of adolescent women. While sexualized interactions may also exist among younger students to some extent, Skaggs research only covered women in their late teens that had just started college.

Potential Solutions

Because a gender gap in academic performance exists, a logical step would be asking how teachers can address it. Clark, Flower, Walton, and Oakley (2008) attempted to address this by performing a group intervention among 8th grade boys.

The researchers worked with 17 students during their study who were deemed to possess "high academic potential based on statewide test scores and teacher recommendations but had lower than expected GPAs" (p. 4). Over half of the students that were involved in the group intervention received free or reduced meals at their school and many of the students also came from single-parent homes. The group intervention consisted of a meeting once a week (for a 12 week period) with the students and discussing issues such as healthy living habits, organization, study skills, and career concerns. The issues that were discussed during the group interventions were also chosen by the students and the lessons were based around their own input. During their research they were able to significantly lessen discipline referrals and improve the student's grades. At the end of the group intervention the researchers also noted that the "perceived attitudes of the great majority of the participants toward school became increasingly positive, and they expressed more focused interest in looking toward the future, as they prepared to leave and enter high school" (p. 8).

Clark, Flower, Walton, and Oakley (2008) performed an intervention with 17 students during their research who although struggling were deemed to possess high academic potential. So while Clark, Flower, Walton, and Oakley were able to produce results with the students in their group intervention, the students who were selected because they were deemed to possess high academic potential. This means that although the researchers were successful, that does not guarantee that their intervention would produce the same results among students that do not have high academic potential. While the group interventions likely helped the students that are struggling, the results gathered only

represented 17 potentially high achieving students which is another possible limitation. Also due to the special attention that the students were receiving, the Hawthorne effect could have also caused their grades and behavior to improve. The student's in the research study's grades and behavior did improve drastically from the intervention, which means that this could potentially serve as an example of a step that could be taken to perform the academic performance of male students.

If masculinity impacts the performance and behavior of males in schools, can adolescent boys themselves reflect on the expectations of masculinity in schools and in their lives? Kehler and Martino (2008) attempted to answer this by conducting interviews and observing seven students from the United States and Australia and analyzing how they negotiated with masculinity in their daily lives. The researchers concluded that many of the boys in the study were able to reflect that they were often constrained by the expectations of masculinity. Many of the students in the study were also able to show very highly developed insight into issues around masculinity and voiced disappointment that issues around masculinity were not discussed more frequently in the classroom. For example, one of the students stated that although their school discusses issues around peer pressure, it is "nothing as deep as going into stuff about how you feel about being masculine or what masculinity is" (p. 107). The researchers also concluded that the students' "willingness to critique the norms governing displays of hegemonic heterosexual masculinity needs to be understood as driven by a desire to search for better alternatives of self-expression which they believed, would lead to enhancing their lives and relationships with other people" (p. 107), even if it meant that

they lost their privileged positions on the top of the peer group hierarchy.

Although Kehler and Martino's (2008) research focused on students from two different countries, the United States and Australia, their research was limited due to the fact that all 7 students who were interviewed came from middle class backgrounds. This is limiting because their results might have been very different if they had interviewed more students from lower income backgrounds. Another issue involves the fact that the 4 American students who were selected were identified by their teachers as "publicly expressing behaviors and attitudes toward gender that were atypical of many of their male counterparts" (p. 93). This means that although these students had great insight into issues concerning masculinity, their behaviors prior to the research helped them get selected for the study, which means their views may not be typical of most adolescent males. Fortunately, if these students can show that they can understand the impact that masculinity has on their lives, there is a chance that other students might be able to come to similar conclusions as well.

Wang's (2000) research showed how 10 Asian and White students in Canada dealt with issues of masculinity in their daily lives. Wang's research consisted of interviews that focused on the students' beliefs about masculinity, femininity, sexuality, and male violence. Wang then analyzed the results of her interviews with the students and concluded that both groups struggle with coming to terms with their masculinity and that most of the students attempted to establish their masculinity in terms of their heterosexuality. It also showed some interesting data from White students that stated that they believed that acting aggressively towards girls and other male students was a way in which they could prove their masculinity to their peers.

The research also revealed that Asian students are less likely than their white peers to identify their masculinity with their athletic ability. Wang then concluded that schools serve as a major site for producing and transmitting socially dominant notions of masculinity.

Wang's (2000) research was limited by the fact she only interviewed 10 boys during her research. Although the students consisted of various races and nationalities, the research is a very small pool to collect from. This research study's conclusions do point out some of the troubling ways in which masculinity is acted out, but it also shows that male students might possibly be able to come to terms with its effects.

Discussion

The research that I analyzed showed that there is a definite gender gap in the academic achievement of male students and that masculinity and other gender norms could be one of the biggest factors in impeding their academic performance. Galambos, Almedia, and Peterson's (1990) research showed how "gender intensification" made adolescents conform to gender roles more intensely as they got older, and Renold (2001) found that academic success among male students is often perceived as a feminine gender norm by their male peers. Both of these studies showed that gender roles have an effect on students and masculinity in particular has a negative impact on male students' academic performance.

Sanford and Madill (2005) showed that males often used video game play as a form of rebellion against the learning practices of schools which are perceived to be more feminine. Outside of videogame play and resistance to schooling, Swain's (2003) research highlighted that male students also use physical interactions as a way of asserting their masculinity and subordinating

female students or males perceived to be less masculine than themselves. This study along with other research studies shows how masculinity is often directly opposed to the mission of schools, with academic success being seen as a feminine characteristic, while being athletic or tough and intimidating other students is perceived as being a desirable masculine trait.

Garrahy's (2001) research showed that teachers also affect gender norms by modeling and regulating the gender norms that their students follow. This research also concluded that although many teachers insist that they teach from a "gender blind" position, their beliefs often did not match their practice. Research showed that teachers interacted with students differently based on their gender and often made more accommodations in their lessons for male students. Jones and Myhill's (2004) research reached a similar conclusion and noted that male students were often treated differently in class and that they also received more negative feedback than females from their teachers. Both of these research studies show that many teachers perceive male students as struggling more in school and that this belief often affects their teaching no matter how much they insist that they do not treat their students differently.

Female students are also adversely affected by gender norms as well. Jones and Myhill's (2004) research also pointed out quite often female students that are struggling are simply overlooked because they are often lumped in with their higher achieving female peers. Skegg's (1991) research also pointed out that institutionalized masculinity also impacts the classroom interaction between teachers and students, and that female students are often the victims of sexual harassment from male students and teachers. This research showed that the detrimental effects that

masculinity has on learning affects female students.

Clark, Flower, Walton, and Oakley's (2008) research showed that by performing group interventions with male students they were able to improve the grades and lessen the discipline referrals among the students that received the intervention treatment. Kehler and Martino (2007)'s research showed that male students have the ability to reflect on how masculinity affects their daily lives and that many of the students wished that issues around masculinity were more often discussed in the classrooms. Wang's (2000) research showed that students often struggled to come to terms with masculinity and that they attempt to define it in terms of their heterosexuality and by acting aggressively toward other students. These research studies suggest that male students are very aware of the impact that masculinity has on their education and that discussing its implications may actually have a positive impact on male academic performance.

All of the research I analyzed showed that a gender gap does exist between the academic performance of male and female students, with research also showing that masculinity is a root cause of male resistance to the seemingly feminizing process of schooling. The research further showed that students' views on gender norms are often shaped by popular culture and that teachers also play a role in modeling gender norms as well. The research further highlighted that male students are also capable of reflecting on how masculinity impacts their daily lives and that male students showed promising improvement when participating in group interventions that were designed to improve their academic performance and behavior.

Recommendations

The research in this literature review seems to suggest that discussions with male students about the impact that gender norms have on their lives might have the potential to positively influence male behavior and academic performance. At the same time conversations about gender norms among all students could also be beneficial and even incorporated into the curriculum of teachers. Whether these interventions or classroom discussions are done in groups based on gender, or whether they are done in a normal classroom setting, none of the research showed a detrimental impact from these conversations taking place.

Part of these conversations could also include the concept of "alternative masculinities" by presenting male figures who while appearing masculine, don't conform to the negative stereotypes often associated with masculinity. This could be modeled by teachers, professionals, or even historical figures that show how being intelligent and successful can also be considered masculine. For teachers this might involve knowing your students well enough that you can find male role models that you feel your students can relate to.

While teachers can be models for alternatives to traditional gender norms, they must also make sure that they themselves are not becoming the regulators of what is expected male and female behavior. Teachers should also try to look at each individual student as different and try not to have preconceived expectations of students based on their gender. The research also suggests that no matter how much teachers insist that they do not treat their students differently based on gender, they almost always inadvertently act differently towards students based on their sex. While this is something that may not be able to be solved

immediately by teachers, they should at least be aware of its existence and not insist that they teach from a “gender blind” position. Male teachers should also take into special consideration that they do not model sexist behavior to their students as well.

Conclusion

More research is needed that is related to how male students respond to having role models presented in the classroom that are more intellectual than the role models that are often presented in school. Additionally more research is needed into how high school sports may impact the academic performance of students, not so much as in how do athletes perform compared to non-athletes, but more along the lines of how schools that heavily promote athletics compare to schools that focus very little on athletic performance or do not have sports programs. Lastly, more research should be conducted on how gender norms impact transgendered secondary students.

References

- Clark, M.A., Flower, K., Walton, J., & Oakley, E. (2008). Tackling male underachievement: enhancing a strengths-based learning environment for middle school boys. *Professional School Counseling, 12*(2), 127-132.
- Finn, P. J. (2009). *Literacy with an attitude: Educating working-class children in their own self-interests*. Albany, NY: State University of New York Press.
- Galambos, N. L., Almeida, D.M., & Petersen, A. C. (1990). Masculinity, femininity, and sex role attitudes in early adolescence: Exploring gender intensification. *Child Development, 61*(6), 1905-1914.
- Garrahy, D. A. (2001). Three third-grade teachers' gender-related beliefs and behavior. *The Elementary School Journal, 102*(1), 81-94.
- Jones, S., & Myhill, D. (2004). 'Troublesome boys' and 'compliant girls': Gender identity and perceptions of achievement and underachievement. *British Journal of Sociology of Education, 25*(5), 547-561.
- Kehily, M. J. (2002). *Sexuality, gender and schooling: Shifting agendas in social learning*. London: Routledge Falmer.
- Kehler, M., & Martino, W. (2007). Interrogating boy's capacities for self-problematization in schools. *Canadian Journal of education, 30*(1), 90-112.
- Lewin, T. (2006, April 19th). Boys are no match for girls in completing high school. *The New York Times*. Retrieved from <http://www.nytimes.com/2006/04/19/education/19graduation.html>
- Renold, E. (2001). Learning the 'hard' way: Boys, hegemonic masculinity and the negotiation of learner identities in the primary school. *British Journal of Sociology of Education, 22*(3), 369-385.
- Sanford, K., & Madill L. (2006). Resistance through video game play: It's a boy thing. *Canadian Journal of Education, 29*(1), 287-306.
- Skeggs, B. (1991). Challenging masculinity and using sexuality. *British Journal of Sociology and Education, 12*(2), 127-139.
- Sommers, C. H. (2000). *The War against Boys: How misguided feminism is harming our young men*. New York: Simon & Schuster.
- Swain J. (2003). How young schoolboys become somebody: The role of the body in the construction of masculinity. *British Journal of Sociology of Education, 24*(3), 299-314.
- Wang, A. (2000). Asian and white boys' competing discourses about masculinity: Implications for

secondary education. *Canadian
Journal of Education*, 25(2), 113-125.

Strategies to Support Students Learning English as an Additional Language

This paper examines empirical research-based strategies to support students learning English as an additional language in the secondary public school setting. Three areas were researched: effective teaching strategies, teacher attitude, and family involvement. This paper was designed with the intent of assisting and empowering classroom teachers to better serve students in the school and classroom who are learning English as an additional language. The research participants included teachers primarily from secondary public school classrooms in the United States. The majority of participants were language arts teachers, who also happened to be native English speakers, located in the southwest or central to northeast region of the United States. The collective synthesis of the empirical articles reviewed for this paper led to three primary conclusions: (1) It is essential to powerfully involve families in the schooling process; (2) Teacher attitude and expectations influence English Language Learners' (ELLs) access to learning; and (3) Teachers lack sufficient ELL education to support students. Based on the research articles viewed, three primary recommendations for educators are made. First, teachers should ask families how they want to be involved in their child's education and honor requests by working collaboratively with families. Second, teachers should participate in teacher-led ELL book clubs to engage effective ELL teaching strategies. Lastly, educator preparation programs in the United States should be required to teach research-supported ELL pedagogy to benefit ELLs and their families. A limitation of the collective studies reviewed for this paper is that no studies investigated the intersection of teaching strategies, family involvement, and teacher attitude.

There is a question that is frequently mentioned when reading recent literature concerning the educational success of students for whom English is an additional language. The question goes something like this: Is "good" teaching the same as "good" teaching for English Language Learners too? This question cannot be answered with a definitive "yes" or "no," but rather with an ambiguous "maybe" or "it depends." The effective teaching of ELLs is complex and multidimensional and researchers directly address many components of this question. One area under investigation in recent research is what teachers deem as "good" teaching in relation to general education students and ELLs. Pass and Mantero (2009) noted, "We believe it is important that

educators ask themselves if indeed good teaching is good teaching for all of our students. More importantly, we need to reevaluate what we believe is good teaching as our classrooms and communities change and evolve" (p. 288). While "good" teaching is important to the holistic success of youth in public schools, simply having the ability to teach to the mainstreamed public school child is necessary, but not sufficient for the effective teaching of ELLs.

Demographics in the United States are changing quickly. This is especially noticeable in the public school system with the ever-increasing number of students who speak English as an additional language to their primary language(s). According to the 2007 U.S. Census, it is "projected that

students whose first language (L1) is not English will represent about 40% of the K-12 student population in the United States by the year 2030" (Chen, Kyle, & McIntyre, 2008, p. 8). As the population of students who speak English as an additional language continues to rise, there is an ever-increasing need for teachers who are prepared to effectively educate students whose first language is not English.

ELLs constitute the fastest growing portion of the K-12 student population, and it is expected that by 2025 as many as one in four students will come from a home where a language other than English is spoken (Coleman & Goldenberg, 2009). Given the fact that many school districts have experienced an increase in the number of ELLs in recent years, it will be necessary for teachers to know and use effective teaching strategies to support ELLs. While the ever-increasing ELL population is not confined to one region of the United States, in the last two decades three of the seven states that have experienced over a 200 percent increase in ELLs are located in the Pacific Northwest: Alaska, Idaho, and Oregon, making this topic highly pertinent in the Northwest.

The National Center for Educational Research found that "only 12.5% of teachers with ELLs [English Language Learners] reported having eight or more hours of training in the previous three years on how to teach those students" (Chen, Kyle, & McIntyre, 2008, p. 8). In 2011 the discussion was whether there were enough teachers within the public school system who have the education, skills, and training to effectively teach students whose first language is not English. However, a critical discussion point in this debate is that fact that it is "projected that by the year 2020 children of immigrants who will likely require ELL student services will number 17.9 million" (Araujo, 2009, p. 118). This is

a time-sensitive issue that requires immediate attention.

Many educators in the public school system in the United States do not have education or training related to the effective teaching of ELLs, yet students for whom English is an additional language are in the public school classrooms across this country. In a recent survey conducted by the National Center for Education Statistics it was found that of "approximately 3 million U.S. teachers, 41% stated that they teach students with limited English proficiency (LEP), yet only 12.5% of those teachers have participated in more than eight hours of English language learner (ELL)-related training during the past three years" (Pass & Mantero, 2009, p. 270). This statistic describes the reality that over 1/3 of educators teach ELLs, but only a fraction of teachers have engaged in ELL pedagogical training in the past three years of their career. All the more reason why it is essential that educators and schools districts begin asking this question: How can we more effectively teach ELLs and what will this take?

The focus of this paper is effective teaching strategies to support ELLs in the secondary classroom, primarily at the middle and high school levels. As a teacher intern I taught in a district and school that had very little support for students learning English as an additional language. Yet nearly all of my classes included students who had either once been labeled as an ELL or who were currently learning English as an additional language. I noticed that the educational support services in this district and school community neglected to serve students with limited English language proficiency. As many schools and communities have young people who are learning English as an additional language, it is important for educators to be attentive towards and knowledgeable of effective

strategies to assist ELLs and their families. This topic is highly relevant to my future practice as an educator because the number of students enrolled in the public school system in the United States for whom English is an additional language has been on the rise for two decades. For schools to effectively teach all students, schools will need to hire and train educators to effectively teach ELLs because there are strong links between home, school, and community (Epstein, 2001; Epstein, Sanders, Simon, Salinas, Jansorn, & Van Voorhis, 2002; Freeman & Freeman, 2001; Ovando, Collier, & Combs, 2003).

The effective teaching of ELLs is important to the whole educational community in the United States because ELLs are an ever-increasing student demographic attending public schools. At a federal level, the No Child Left Behind Act (NCLB) of 2001 impacts all public schools in the United States. One of the primary ways that NCLB impacts schools is by allocating funding resources based on students' test scores on mandatory standardized tests. However, policy and reality are not always in agreement because NCLB tests are only provided in English, which makes it challenging, if not impossible, for ELLs to pass these exams. Regardless of what one's stance on language use in the school and classroom is, for schools, districts, and states that have, or soon will have, high student populations of English Language Learners, effectively educating ELLs is essential to the stability of many public schools and the educational outcomes of students.

The themes that will be highlighted in this paper are effective teaching strategies for ELLs, powerful integration of families, and teacher attitude toward ELLs. While there are other areas of importance in the research literature, for the scope of this paper I will limit my review to the above-

mentioned areas. My paper primarily focuses on the question as to what effective, research-based teaching strategies for ELLs exist for use within the secondary classroom. Because of this narrow focus, my paper does have limits as to what can be thoroughly addressed. My paper will not go into detail about the connections of the No Child Left Behind Act, as this topic is too broad and extensive for the space allotted here. In addition, while many of the topics discussed in this paper will be presented under the context of educational school policy, I will not be discussing public policy, law, or activism related to educating ELLs. This paper has its roots in the classroom and school community and what can be done at a micro level to effectively teach ELLs, with the goal being to empower educators to make meaningful, effective changes in their classrooms to better support ELLs and their families.

Literature Review

The studies for this literature review were gathered from a search completed in January 2011 using the Educational Resources Information Center (ERIC), Academic Search Complete, JStor (Journal Storage), and EBSCOhost, as well as library books and encyclopedias obtained at The Evergreen State College and through Inter Library Loan and Summit. Initially, the search terms "effective teaching strategies," "English Language Learners," and "limited English proficiency students" were used to identify potential studies for use within my literature review. Throughout this paper I will primarily be using the wording English Language Learners (ELLs) to reference this student population; however, in many reports and articles, ELL is replaced with English as a Second Language (ESL), and English Speakers of Other Languages (ESOL). It should also be noted that the phrase used to describe students for whom

English is an additional language is political and debated. There is minimal uniformity as to the linguistic wording that most appropriately and respectfully addresses this student population and their families. The following is divided into three sections. The first section concerns guardian and family involvement, followed by effective teaching strategies, and lastly, teacher attitude.

Guardian and Family Involvement

Students are not educated in isolation from their families and their larger cultural communities. In this section, family involvement and the possible effects among ELLs will be discussed. While effectively teaching ELLs is complex, there are themes within this topic that bring the teaching community closer to an informed answer. One of those themes is the powerful participation of guardians in the public schools. Powerful guardian participation is involved and multi-communicative. In Ovando, Collier, & Combs, it was found that:

Many teachers perceived the primary functions of parent involvement to be improving such things as school attendance, discipline, and parent attitudes toward the teachers and school. To see these as principle reasons for parent involvement reflects a one-sided attitude in which teachers see parents and their children as objects that need to be changed to fit the school, rather than as individuals with interests, aspirations, expectations, resources, and skills that can contribute to the improvement of the school. (2003, p. 414)

In a school environment of powerful guardian involvement, multi-communicative processes occur between teachers and families, and guardian involvement will shift

from the commonly used one-sided teacher to parent paradigm. The communication between school officials and guardians will not be solely one-directional, such as letters home to families, and will likely take the form of multi-cultural and multi-lingual collaboration.

Research suggests that this can be effectively accomplished in many different ways, but one suggestion that is consistently present is the shift from a school-centric culture of education to one that is community-centric. School-centric guardian involvement takes the form of teacher and school administration as professionals, while students and their guardians are their “clients.” This type of arrangement takes the form of “privilege in educator discourse and practice that define parental involvement narrowly and legitimate activities such as monitoring homework, attending parent-teacher conferences, and supporting the Parent-Teacher Association” (Gates & Smothermon, 2006, p. 446). The school-centric view of education puts school policy, rules, and social status above the participation of guardians, which helps to uphold status quo schools that cyclically continue to support a school-centric culture.

Creating a community-centric school is a relatively new idea because it is an organizational concept that redistributes power into the larger community affiliated with the school, students, and their families. This is an essential step toward powerful participation for guardians of ELLs. “‘Worlds apart’ captures [the] recognition of the difference between parents and educators, particularly for marginalized families (e.g. those living within poverty whose race is other than White, whose first language is not English)” (Gates & Smothermon, 2006, p. 446). In a school environment that is community-centric, school officials may assist in the creation of a welcoming environment for families of

ELLs by making initial contact if a relationship has not already been established. First contact is important because it shows a desire on the part of the teacher for guardian involvement. Under a paradigm of community-centric values, educators reach out to families in ways that are conducive to powerful communication, such as inviting a translator in the guardian's native language, meeting at a location that is convenient for the family, and recognizing and understanding cultural differences.

In the Gates and Smothermon (2006) study, educator beliefs and practices of parent involvement for ELLs were researched. The data was collected from various school districts in the northeast region of Texas that experienced an increase in "limited-English proficient" enrollment between 1994 and 2002. Initially, the researchers engaged in observations, field note collection, semi-structured interviews, and collected artifacts. In follow-up visits, contacts were made for interviews and 62 interviews were conducted with the superintendent, directors of the bilingual/ESL program, administrators, teachers, librarians, nurses, and community liaisons. Based on the analysis of the data, the researchers concluded that "the outcomes, content, and processes of the parent involvement programs in these districts were largely under the purview of educators" (p. 468). The interview identified "numerous obstacles and limitations" that prevented parents and guardians from school involvement. Instead of creating alternative methods to involve parents, the teachers "seemed to believe that the lack of involvement justified the controlling (school-centric) strategies that they developed" (p. 468). In other words, the teachers placed the lack of parental involvement on the parents and guardians without considering the larger context of a school-centric district culture that makes it

structurally difficult for meaningful, non one-dimensional (school to home) communication to take place. While this study acknowledged the tension between school- and community-centric schools, it did not provide suggestions as to how to shift schools from school- to community-centric.

In the last two decades, categories of guardian involvement have been studied and identified, specifically six categories that label and describe the ways that families can participate in their child's education. These include "providing for children's basic needs; communicating with school staff; volunteering or providing assistance at their child's school; supporting and participating in learning activities with their children at home; participating in governance and advocacy activities; and collaborating with the community" (Wrigley, 2001, p. 176). What is important to note about this list is that category five, participating in governance and advocacy activities, and category six, collaborating with the community, are the areas in which opportunity for powerful, multi-directional participation can begin to form. However, it is essential to note that level one of this model requires that guardians meet the basic needs of their children, which is becoming increasingly difficult for families in a time of widespread poverty and food insecurity. Part of facilitating guardian involvement is working with the school counselor to provide resource information for families in need, but more importantly, to be an ally to families in need, which can take the form of working of for social justice in the local school and city community (Wrigley).

Family projects have been suggested as a way to powerfully involve guardians of ELLs in the education process of their students (Cowdery, Levi, Wells, & Blauvelt, 2010). At a recent summer camp in central Ohio projects were developed with the goal

to empower ELLs and their families through advocacy. At this camp, teachers and organizers spent time with parents and guardians for the purpose of getting to know the families and finding out what the parents felt that they or their children needed to empower their children or themselves (p. 498). Based on the discussions with families, the projects focused on music, college admissions, and the long-term empowerment of parents. This results of this study were found through interviews with the participants, which demonstrated that projects that are inclusive of children's families encourage guardian involvement in the school environment, often resulting in parental empowerment and stronger ties between families, teachers, and the larger school community.

While traditional views of parent involvement often includes conferences, raising money for schools, and helping students with homework, research suggests that this is necessary but not sufficient for the powerful participation of families of ELLs (Lee, 2006). "Parents' views of family involvement, however, seem to be much broader. First-generation immigrant parents often participate in ways that differ from traditional forms of school involvement" (p. 19). It is an essential role of the educator to build meaningful relationships with families of ELLs and ask families, "What can we accomplish together?"

A large part of inviting powerful family involvement of ELLs and their families will require a shift in the funds of knowledge held institutionally at the school district level and individually at the level of teachers. Teachers and schools will need to begin examining deficit models that label language-minority students and their families as "less than" because of the widely held White middle-class norm. According to Araujo (pp. 116-123), this will require teachers to view linguistic minority students

as whole people who are not separate from their cultural and linguistic environment.

In another study, Chen, Kyle, and McIntyre, 2008, conducted a project with classroom teachers to emphasize "positive, respectful, and necessary involvement of families in supporting student learning and academic achievement" (p.10). The goal was to conduct a professional development project that had been designed to introduce K-12 teachers to effective teaching strategies for ELLs with an emphasis on family involvement. The participants included 20 classroom teachers in one cohort and 15 classroom teachers in a second cohort. Data was obtained through observations of educators' teaching, the results of students' literacy assessment, teachers' reflections, and pre- and post-surveys concerning family involvement. Cohort one responded to a survey developed by the project directors, while cohort two completed "validated survey about parent involvement" (Chen, Kyle, & McIntyre, 2008, p. 11).

At the beginning of the project, cohort 1 reported that the majority (17 of 20) made "positive phone calls" home to 0-25% of all students; most (15 of 20) "attempted to get to know students through families; and few (3 of 20) reported making "instructions connections" from information learned about students and their families (Chen, Kyle, & McIntyre, 2008). In cohort two, 67% of participants agreed with the statement, "Mostly when I contact parents, it's about problems or trouble;" 33% of the teacher agreed that, "Teachers do not have time in involve parents in very useful ways;" and 94% of participants agreed or strongly agreed that, "Teachers need in-service education to implement effective parent involvement practices" (2008). At the end of the project, almost half of participants from cohort 1 had made positive phone calls home, seven of twenty teachers reported

asking parents to share positive information about their child, and seven had made instructional connections to their students' lives. For cohort two, "only 11% (2 of 18) of participants had conducted family visits at the beginning of the project. At the end of the project, however, 58% (7 of 12) of the teachers reported making these visits" (p. 15). While there was clear improvement on the parts of many of the participants to serve ELLs, the study neglected to describe in detail the professional development activities that teachers could partake in to support their teaching.

Effective Teaching Strategies

Teachers can utilize effective strategies to support ELLs in their classroom. McKeown and Gentilucci (2007) examined the use of a think-aloud strategy, which uses metacognition to help students reinforce their reading comprehension. In this study they note "the purpose of think-aloud is to help second-language learners develop the ability to monitor their reading comprehension and employ strategies to facilitate understanding of text" (McKeown & Gentilucci, 2007, p. 136). To analyze the think-aloud strategy, pre- and post-assessments were given to 27 English learners at three predetermined levels of English language acquisition as determined by the California English Language Development Test. Students were explicitly told how to use the think-aloud strategy and observed their teacher model the strategy, which involved reading and verbalizing what one just read for a period of two weeks during the 50-minute reading class and lasted from 20 to 30 minutes, three days each week. Students were asked to read and then provided with the prompt "what is going on in your head" to encourage them to employ metacognition and the think-aloud strategy. Students were encouraged to communicate in the language that they were

most comfortable using. This strategy was practiced independently and in pairs for a period of two weeks, at which time the post-assessment was given. The results of this study show that the use of the think-aloud strategy did not assist ELLs, and in fact, hindered the reading comprehension of advanced ELL students. While this study was strong in the method of teaching students how to use think-aloud and the amount of time students were given to practice it, this study could have been strengthened by providing more information about the participants, such as native language and number of years in the United States.

In an ethnographic study, Kibler (2010) studied four high school students located in a northern California town in which two-thirds of the residents speak a language at home other than English and almost half are foreign-born. The intent of this study was to measure the role in which a student's first language impacts oral interactions among adolescent ELLs during an extended writing activity. Participants' oral interactions were analyzed through observations and audiotape transcriptions. During data analysis, the researchers found that students used their first language to broker conversations and assert their expert and novice identities during the writing process.

The Kibler study discusses the trend of students for whom English is an additional language to be viewed under a deficit model in which students are thought of as "unintelligent" because they do not yet have mastery of English. However, a deficit model does not consider that a student may be skilled when writing in their native language. While this study acknowledges the powerful potential of a classroom environment that supports student's use of their L1 and L2 languages:

[u]sing the L1 in classrooms should not replace or challenge the importance of second language acquisition. Rather, it must be understood as an affordance that can facilitate L2 learning and assist students in meeting the demands of content-area tasks, and it is possible for peers to offer strategic guidance for each other during classroom writing activities. (Kibler, 2010, p.138)

While the use of L1 in the classroom is helpful, it may not be sufficient alone. This research did not investigate ways to create a classroom environment that supports students to use L1 in conjunction with L2.

Teacher Attitude

Teacher attitude and preconceived notions about the ability of ELLs and their families has an impact on student learning. Clair (1995) concluded a yearlong qualitative analysis was conducted to examine the beliefs, self-reported practices, and professional development needs of three mainstream classroom teachers who have students learning English as an additional language in their classes. Data was collected from grade 4, 5, and 10 teachers in the form of interviews, notes from classroom observations, and journals and analyzed for teachers' self-reported professional development needs concerning ELL students. It was noted that the participants reported that "good" teaching would be sufficient when teaching ELLs. For example, a teacher in the study stated:

For myself personally, I think I have enough experience as a classroom teacher that I know already. I build up their culture, boost their self-esteem. I think that all the things that apply to any good teacher apply to ESL. I mean as far as teaching goes, teaching is the

same not matter what kinds of kids you have. It's really true. It doesn't matter what I'm teaching. If you're a teacher, you're a teacher. (p. 191)

While this study investigated teacher attitudes toward ELLs and critiqued each teacher participant's belief that "good teaching is good teaching" regardless of the student, the study neglected to examine teacher-training strategies based on empirical research findings. However, findings suggest that teachers may be inclined to learn how to effectively teach ELLs if they realized that "good teaching" does not impact all students in the same way. Some of the participants and the researcher suggested ongoing teacher study groups as opposed to traditional one-shot staff development workshops.

In another study, Sharkey and Layzer (2000) examined how teachers' attitudes, beliefs, and practices about ELLs influenced access to academic resources and success in mainstream classrooms. This study was conducted at a high school with 2,300 students located in a predominantly White, middle-class community in Pennsylvania where 2% of students were classified as "ESL" students. To collect data about teachers' attitudes, researchers distributed surveys to all 48 teachers at the high school who had ELLs in their class (35 surveys were returned), conducted 'open-ended interviews' with 10 teachers (8 mainstream; 2 ELL), and observed 26 class periods. To analyze the data, the researchers used contextualizing strategies to find relationships between actions and statements in the data. The researchers found that teachers' attitudes, beliefs, and practices affected ELLs access to academic success and resources in three ways: ELLs placement in mainstream classes, teachers' expectations of ELLs, and classroom interaction (Sharkey & Layzer, 2000).

A key finding of this study was the “laissez-faire attitude” toward ELL classroom participation. Survey results show that teachers place responsibility on ELLs to speak in class. However, it was noted that there was a “dominate pattern” of “limited interaction” among mainstreamed ELLs (Sharkey & Layzer, 2000, p. 363). The surveys also revealed that teachers’ tend to hold attitudes of ELLs as “shy,” “timid,” “not talkative,” or “tentative in interactive,” which “place[s] the burden of interaction on the students while leaving the classroom context unchallenged” (p. 363). A result of attitudes such as these is that ELL students were often placed in lower track courses that teachers believed “reduced linguistic challenges” and would benefit ELLs. Based on the findings, the researchers determined that students were “denied access to academic success and resources (even though the denial was cloaked in a discourse of well-meaning concern.)” (p. 364). While this study acknowledged the issues impacting ELLs it did not provide in-depth suggestions as to how to change a school environment such as this.

Pass and Montero examined the self-reported strategies of “exemplary” language arts teachers in their daily interactions with students learning English as an additional language. The researchers asked, “Is there a difference in the self-reported strategies exemplary secondary language arts teachers demonstrate in their interaction with English language learners during classroom instruction and the actual strategies they use in their classrooms and school activities?” (2009, p. 270). The researchers looked at three public high schools located in the southeastern United States. The teachers who were studied had an average of 14.25 years of teaching language arts and none had received specialized training concerning effectively working with ELLs, including preservice instruction. In addition, all of the

participants were White females who were native English speakers. Data was collected from observations, interviews, and field notes, which were analyzed by coding the transcripts line by line to generate a list of emergent themes in the data.

The results of this study demonstrated that the participants “don’t think we should be responsible” for teaching ELLs, with one teacher going as far as to say, “I mean, we’ve got enough to do as a teacher, and I’m not responsible for taking care of some kid that...” (Pass & Montero, 2009, p. 283). Furthermore, the study also revealed that language arts teachers do not perceive it as their responsibly to teach the “general subject of English” (p. 283). The researchers made a recommendation that classroom teachers acquire a specific pedagogy for ELLs, and acknowledged that prescribed curriculum that districts enforce will need to change to include the effective teaching methods of ELLs.

Discussion

The purpose of this paper was to examine the following question: What are effective teaching strategies to support students learning English as an additional language? To investigate this question, I examined empirical research studies in three separate, but related, areas. I examined family involvement, teacher attitude, and effective teaching strategies. Based on the empirical studies viewed for this paper, I arrived at three primary conclusions.

First, it is essential to powerfully involve families in the schooling process. This means that communication is multi-dimensional and rarely takes the form of only a letter home or a quick meeting at parent-teacher conferences. In one study (Gates & Smothermon, 2006), powerful involvement is defined by a community-centric school, which is an environment that is open to the whole of the learning

community, including students, guardians, and families. In a community-centric school guardians are collaborative partners with teachers and administrators alike and power is evenly distributed.

Second, teacher attitude and expectations of ELLs determines access to learning and higher education. Although well meaning in many cases, the teacher participants examined in several studies had lower expectations for ELLs, which often resulted in the placement of ELLs in lower track courses. Two primary side effects were noted from low teacher expectations: ELLs become disengaged when they perceive that teachers do not value their learning, and ELLs were structurally prevented from entering college preparation courses in high school, increasing the institutional difficulty of gaining admission to postsecondary education. It should also be noted that in one study (Pass & Montero, 2009) concerning teacher attitude, the majority of teacher participants, all of whom were English teachers, did not see it as part of their job to teach the subject of English, which created structural barriers for ELLs.

Third, teachers, as a collective group, do not have sufficient ELL education to support students learning English as an additional language. At the state and federal level, ELLs could benefit from the requirement that all pre-service educators receive training and theory to support ELLs.

Recommendations

The synthesis of the examined research led me to several conclusions, as well as a policy suggestion for future implementation at the state and federal level. My first recommendation, at the federal or state level, is that educators and administrators in public school environments be required to take coursework in research-supported pedagogical practices for teaching ELLs. Part of this coursework should be equality-

based effective communication with culturally and linguistically diverse families. Second, teachers should participate in teacher-led ELL book clubs to engage effective ELL teaching strategies within their schools. Third, at the classroom level, teachers should ask families how they want to be involved in their child's education, and honor requests by working collaboratively with families. Lastly, at a state and federal policy level, teacher educator programs in the United States should be required to teach ELL teaching strategies and related pedagogy to teacher interns.

Further Research

For future research, it would be beneficial to investigate established community-centric school environments. It would be beneficial to investigate, possibly with a case study, how exactly community-centric schools support ELLs and their families. In addition, future research on the implication of state or federal policy that would require teacher educator programs to provide education concerning the effective teaching of ELLs is necessary.

References

- Araujo, B.E. (2009). Best practices in working with linguistically diverse families. *Intervention in School and Clinic, 45*(2), 116-123. doi:10.1177/1053451209340221
- Chen, C., Kyle, D.W., & McIntyre, E. (2008). Helping teachers work effectively with English language learners and their families. *The School Community Journal, 18*(1), 7-20.
- Clair, N. (1995). Mainstream classroom teachers and ESL students. *Teachers of English to Speakers of Other Languages, 29*(1), 189-196.
- Coleman, R., & Goldenberg, C. (2009). What does research say about effective practices for English learners?

- Introduction and part I; Oral language proficiency. *Kappa Delta Pi*, 46(1), 10-16.
- Cowdery, J., Levi, K., Wells, D., & Blauvelt, S. (2010). Family projects: Empowering students, parents, and teachers. *Teachers of English Speakers of Other Languages*, 1(4), 497-505. doi: 10.5054/tj.2010.234764
- Epstein, J. L. (2001). *School, family, and community partnerships: Preparing educators and improving schools*. Boulder, CO: Westview Press.
- Epstein, J.L., Sanders, M.G., Simon, B.S., Salinas, K.C., Jansorn, N.R., & Van Voorhis, F.L. (2002). *School, family, and community partnerships: Your handbook for action* (2nd ed.). Thousand Oaks, CA: Corwin Press.
- Freeman, D.E., & Freeman, Y.S. (2001). *Between worlds: Access to second language acquisition* (2nd ed.). Portsmouth, NH: Heinemann.
- Gates, G., & Smothermon, D. (2006). Leadership to connect home and school: Educator perspectives on parent involvement for English-language learners. *Journal of School Public Relations*, 27(4), 445-476.
- Kibler, A. (2010). Writing through two languages: First language expertise in a language minority classroom. *Journal of Second Language Writing*, 19, 121-142. doi: 10.1016/j.jslw.2010.04.001
- Lee, S. (2006). Using children's texts to communicate with parents of English-language learners. *Young Children*, 61(4), 18-25.
- McKeown, G.R., & Gentilucci, J.L. (2007). Think-aloud strategy: Metacognitive development and monitoring comprehension in the middle school second-language classroom. *Journal of Adolescent & Adult Literacy*, 51, 136-147. doi: 10.1598/JAAL.51.2.5
- Ovando, C.J., Collier, V.P., & Combs, M.C. (2003). *Bilingual & ESL classrooms: Teaching in multicultural contexts* (3rd ed.). Boston, MA: McGraw-Hill.
- Pass, C., & Mantero, M. (2009). (Un)covering the ideal: Investigating exemplary language arts teachers' beliefs and instruction of English language learners. *Critical Inquiry in Language Studies*, 6(4), 269-291. doi: 10.1080/15427580903313520
- Sharkey, J., & Layzer, C. (2000). Whose definition of success? Identifying factors that affect English language learners' access to academic success and resources. *Teachers of English to Speakers of Other Languages*, 34(2), 352-368.
- Wrigley, P. (2001). *The help! kit: A resource guide for secondary teachers of migrant English language learners*. Oneonta, NY: ESCORT. [ERIC Accession # ED469737].

Access to Opportunity: Some Digital Literacy Issues in Education

This literature review examines the effect of inadequate home access to computer and internet technologies on academic digital literacy and the use of digital literacies in school. Professional organizations advocate for digital literacy instruction in schools to prepare students for employment, and government standards are in place to encourage and support such instruction. Studies around the world identify correlations between student familiarity with internet and communications technologies and student accomplishments in school-based digital literacies. Other studies consider whether specific uses of technology within classrooms are effective as well as uncovering at newly-discovered, technology-specific learning disabilities. There is evidence that home access is a strong predictor for student self-efficacy and skill, however schools have the task of helping all students learn to use ICT proficiently regardless of home access. Questions about the impacts of digital literacies and various computer applications are continuing to be explored as new technologies are developed and become part of the assumed funds of knowledge of the population in the United States and around the world. Based on this research, classroom teachers might consider surveying their students' home computer and internet access and prior experience with classroom technologies before planning and conducting instruction that depends on those factors.

Access to information sources and distribution of information has long been a concern for teachers interested in social justice and literacy (Freire, 2005). Being literate has meant that a person had access to knowledge and the means to communicate and disseminate information. The power of communication was again made evident this year when cellular and internet communications were used to organize and then make public the results of large public uprisings in Egypt resulting in regime change (Olivarez-Giles, 2011). Literacy in these new technologies is demonstrably powerful.

Still, not everyone has access to these exciting and powerful communication technologies. Narcisse (2010) cited statistics from the Pew Research Center showing that 37% of lower-income households do not use the internet and that 48% of people without a high school diploma do not use the

internet. The ability to use the internet, while not the totality of digital literacy, is nevertheless considered a key component of modern computer literacy. A mixed-methods study supports these data and asserts that adolescent familiarity with digital literacies is a predictor of adult employment opportunities (Robinson, 2009). The Partnership for 21st Century Skills (2011) promotes knowing how to use various technologies as important for workplace success. It seems clear that this is an important content area for today's students and teachers.

To reduce confusion, in this paper the term "digital literacy" will be used to denote the ability to efficiently find, critically use and independently create content transmitted by Information and Communications Technologies (ICT), including computer and cellular systems. "Digital divide" refers to the gap in access and opportunity created by

economic realities that constrain lower-income families' decisions around purchasing technology or engaging in fee-based technology services. "Home access" refers specifically to student home access as explored in studies; where a study also considered library and internet-café access points "out-of-school access" will be used.

Widespread use of Internet and Communications Technologies (ICT) is less than three decades old (German, 2011; Computer History Museum, n.d.), but has become so important to the economy and modern life that in the most recent State of the Union address President Obama promised, "Within the next five years, we'll make it possible for businesses to deploy the next generation of high-speed wireless coverage to 98 percent of all Americans" (2011). This could particularly impact rural residents. In 2010 the chairman of the Federal Communications Commission reported that only 50% of rural locations have internet access (as cited by White, 2010), only a slight increase since 2000, when 38.9% of rural households were estimated to have access (Mineta, 2000, p. xv). The importance of such access was highlighted in a speech by Secretary of State Clinton (2011) who said that the "internet can serve as a great equalizer. By providing people with access to knowledge and potential markets, networks can create opportunity where none exists."

Although Secretary Clinton (2011) was advocating for freedom of access in other countries, the same holds true in the United States: opportunity is advanced for all when information is made available to all. According to the Washington State Superintendent of Public Instruction (n.d.(a)), "One of the goals of Title II, Part D of the No Child Left Behind Act of 2001 (NCLB) is to assist every student in crossing the digital divide by ensuring that every student is technologically literate by the time

the student finishes the eighth grade, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability." The importance of digital literacy and of student access to technology was made clear to this author during a student teaching experience in the autumn of 2010.

As a 7th grade Language Arts teacher, I expected students to use word processing to produce a final product, a digital literacy skill that is generally expected to be used by the 4th grade (Washington State Superintendent of Public Instruction, 2008). As products came due, I learned that many students' homes did not have computers, printers, and/or internet access; others had only passing familiarity with the computer systems in the school. Some students didn't understand how to interpret formatting instructions, nor how to save their work for later retrieval. Thus the assigned task was out of their reach. Clearly, even at the level of word processing, the digital divide was in play for my students. Recognizing that other educators face similar issues, I chose to explore the effect of inadequate home access to computer and internet technologies on academic digital literacy and the use of digital literacies in school.

Digital literacies are considered part of the modern set of skills in which students will need to engage both during their school years and once they are employed (Partnership for 21st Century Skills, n.d.; Washington State Superintendent of Public Instruction, n.d.(b)). The National Council of Teachers of English (n.d.) recommends as a goal that "students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge" (Standard 8).

Other organizations that include digital literacies as fundamental to a modern

education are the Washington State Superintendent of Public Instruction (OSPI), the United States Department of Education (ED), National Education Association (NEA), and the International Society for Technology in Education (ISTE). The International Reading Association (2009) has placed ICT as driving the “new literacies” connected to modern technologies, and which are constantly undergoing modifications. The Washington State Superintendent of Public Instruction has defined technology literacy as including the ability to create as well as to critically consume information using ICT and states, “at the basic level, we know that computers help students improve their performance on basic skills tests, and is a powerful tool for problem solving, conceptual development and critical thinking” (n.d.(b)). Additional descriptions and uses of digital literacies or analysis of the digital divide can be found in the websites in Appendix 1, A Few Education and Digital Literacy Websites.

Despite the implementation of digital literacy instruction and computer training in schools, lack of adequate home access can negatively impact student readiness for certain tasks and thus limit academic progress (Greenhow & Robelia, 2009; Hargittai, 2010; Margaryan, Littlejohn, & Vojt, 2011; Robinson, 2009; Ward, & Wasson-Ellam, 2005; and Zhao, Lu, Huang, & Wang, 2010). In addition, not all technologies are equally valuable for instruction nor equally accessible (Kühl, Scheiter, Gerjets, & Gemballa, 2011; Sins, Savelsbergh, van Joolingen, & van Hout-Wolters, 2010; Thorvaldsen, Egeberg, Pettersen, & Vavik, 2010; Vos, van der Meijden, & Denessen, 2011; and Zhao, Lu, Wang, & Huang, 2011). These inequities can lead to poor outcomes for students, and maintain or increase the digital divide.

Research was conducted through the Evergreen State College's Daniel J. Evans

Library “MetaSearch,” and focused on locating electronic copies of peer-reviewed journal articles relating to digital literacy. Search terms included “digital literacy” and “technology education” and later expanded to explore the terms “computer, access and academic.” References from some sources were used to find others. To get a sense for current trends, online sources such as professional and government websites were consulted and search engines were used to locate additional resources. Sources that were primarily commercial in nature were not used. While the focus was adolescent use and access, where data was lacking research on adjacent age groups was used. Unexplored in this paper were examinations of computer software developed for classroom and home use or for assistive technology. Neither obsolete technology nor limited workstations in classrooms have been addressed in this paper.

Access to the Digital Age: A Digital Divide

As a person's income increases, access to amenities increases. In the years 2009 and 2010, the Pew Research Center collected user and usage data on many of the newer technologies such as cell phones, internet and computers, and revealed that while up to 95% of affluent persons (income greater than \$75,000) use the internet at least occasionally, usage drops to 57% for people earning less than \$30,000. The number of people with broadband (high-speed) internet access at home is greater than 87% in the high-income households but only 40% for people earning less than \$30,000. (Jansen, 2010). Income was isolated from race or ethnicity for this analysis. However, there is a correlation between race and income level in the United States.

Denavas-Walt, Proctor and Smith (2010) provide an historical view of incomes based on race. The United States Census tracked poverty levels over a 50-year period

from 1959 to 2009 which revealed a consistent trend with Hispanic, Black and Asian/Pacific Islander families experiencing higher rates of poverty than White families. Native Americans were not represented. Thus, it is reasonable to assume that a higher percentage of non-White individuals are at lower income levels, and therefore have more limited access to technologies.

In 2000, the internet access rate among Black and Hispanic households was approximately 18 percentage points lower than the national average, only partly due to income. Additional groups that experienced diminished internet access were people with disabilities, specifically vision and dexterity-impaired people, and single-parent households (Mineta, 2000, p. xvii). At the same time, use of computer-based assistive technologies for specific disabilities is well established in schools (Mckenna & Walpole, 2007). Teachers of students in grades K-12 who wish to make instructional decisions for out-of-school tasks might consider student demographics (income, race, disability and location) as potential predictors of access to necessary technologies.

Digital “Natives”

Many researchers are interested in the connections between income, race, and location and inequities in education and digital literacies. The concept of “digital natives” or individuals born after 1980 who have grown up in a world surrounded by technology and who therefore easily engage new technologies is generally accepted. As will be explored here, not all students have equal access and experience, nor do all students with access and experience necessarily know how to use digital literacies for learning.

Margaryan, Littlejohn and Vojt (2011) tested the concept of digital natives in a study of college students in the United Kingdom. The study took place on two

campuses and addressed only engineering and social work students. Their findings appeared consistent with other studies cited in their article. Specifically, they discovered that ownership of all types of devices was higher among engineering students and those termed “digital natives” compared to social work students and older students. Academic use of technologies depended in large part on the attitudes and support of the university lecturers (teachers) rather than on student ownership. Margaryan et al. suggest that rather than spontaneously taking advantage of digital literacies for studying that students more passively wait for instructors to require it. A teacher who wants to support the use of digital communications for schoolwork may want to provide additional scaffolds and encouragement for students who would not spontaneously know how or when to use digital communications for studies and coursework despite having apparent prior knowledge.

Reflecting the concern for access within the United States, Hargittai's (2010) survey-based study focused on computer use among first year students at a university in the United States in 2007. This study specifically examined the effects of race, gender and socioeconomic status on student access to and use of Internet skills. Students were asked about a number of habits of internet use and their time spent online. This study found positive correlation between higher parental education and increased computer skills and ownership. Some gender differences were found in time online, skills and the numbers of types of websites accessed. African Americans and Hispanics had lower incidence of computer use than whites and Asian-Americans in most measures. Overall, however, a positive correlation was found between ownership of computers, number of internet access points and skill levels for students. Hargittai

concluded that while there is potential for the internet and computer use to make education more equitable, access issues instead further increase the digital divide. It is reasonable, then, to consider how the digital divide affects opportunities and in what contexts students are actually using the Internet.

Robinson's (2010) longitudinal study of teenage students in a central California community revealed the role of home internet access in student use of search engines, and explored the very different outcomes that result when a student has time and opportunity to engage in "serious play" and when they don't. Both general internet use and the ability of students to conduct efficient, high-quality research using search engines were affected. This study was carried out with high school students from a community in the central valley of California who resided in an urban area with a high poverty rate and a high minority student rate (9% white, 82% Hispanic, 64% receiving free lunch based on low family income), which allowed some correlation of findings to low income and minority students.

Robinson (2010) found that students experienced difficulty as they attempted to meet the requirements of academic demands dependent on use of computer, coupled with their limited ability to gain access to internet-connected computers. According to the survey results, in that community one-third of the students reported consistent access to high-quality internet access from home, one-third had low-quality access and one-third had no home access. Only six percent of the students without home access spent more than seven hours online in a week, while 81% of the students with high-quality home access spent that seven or more hours online. Home access affected use for these students.

Robinson (2010) reported a further

correlation between the amount and quality of home internet access with a person's attitude and habits of use. Low-quality and limited access users tended to view internet and computer time with specific goals in mind and therefore didn't take time to enhance peripheral skills, such as trying different web search engines or experimenting with ways to use search functions. Robinson suggested that time constraints put pressure on students to perform in more limited ways. Additional studies cited by Robinson support the conclusion that access and familiarity with technology are important factors in student performance on tasks that require the use of that technology. The findings of this study suggest teachers may wish to consider community habits of use and accessibility issues for students, and be ready to provide additional instruction and/or access for students who lack home access.

These three studies pointed to a lack of academic digital literacy among students who fit the stereotypical digital native profile. Not surprisingly, students who had better access to technologies and increased experience online appeared to be more highly skilled, although even the most skilled students benefit from additional attention from their instructors. All three studies referenced personal ownership, home access or prior experience as important for student familiarity and use of digital literacy.

Home Access Supports Digital Literacy

The issue of access is found worldwide. Zhao, Lu, Huang and Wang (2010) conducted a study on Internet use using over 3,000 middle and high school students in China. The focus was on the connection between student use and self-efficacy and the location(s) where students accessed the internet. Zhao et al. found that the more time students spent using the

internet in unstructured ways, the more capable the students perceived themselves as well as the more competent their work. A major finding by Zhao et al. (2010) was that the Internet Self Efficacy (ISE) score is highest for the students with home access and home in combination with other access points. "Self-efficacy" is defined as "people's judgment of their capabilities to organize and execute courses of action required to attain designated types of performances" and is predictive of actual performance (Bandura, and Roca & Gagné as cited in Zhao et al., 2011, p. 348). Urban high school students had greater numbers of access points to the Internet and higher ISE scores than those in rural areas, and higher parental education level corresponded with home access and support for use of the internet. Zhao et al. explained that there is a correlation between the ability to use the internet both at home and at school, with academic performance boosted when students use the internet to study at home and for exploration while at school. This study did not account for the effects of race, a factor of importance to teachers in the less-homogeneous schools of the United States. Zhao et al.'s results point to the need for teachers to be direct and thoughtful when assigning internet-based tasks. Teachers may want to ask how students access and use required technologies outside of the classroom in order to help set up learning opportunities.

As noted by Zhao et al. (2010), home access is only one potential out-of-school access point for students. In a small ethnographic study of computer use in a neighborhood library in Canada, Ward and Wason-Ellam (2005) investigated the socially mediated literacies of library users. During observations and interviews, the research team documented use of the urban library as well as how people thought about their use of the literacy opportunities

available there. The authors described the difficulty of getting to the library being an impediment to access. Though the focus of this study was on literacy practices, the authors noted how the availability of computers at the public library affected patrons who used the internet as simply one more node to access information, situated within other, print-based and multi-media literacies. The placement of computers as one of many literacies students engaged in outside of school supports the idea of access to technologies as being valuable enough to go out of one's way. Teachers who are aware of these possible non-home access points outside of school as well as reasons that students might not be able to use those locations may be able to adapt expectations for use of digital literacies.

The issue of where access to technologies is available as well as the quality and duration of that access is tied to student familiarity and comfort with digital literacy. For some students, while out-of-school access may be available it might be neither reliable nor sufficient for conducting academic tasks outside of school, thus increasing a digital gap for education. Teachers whose students lack quality home access may wish to incorporate additional, less-structured time in class to allow those students to develop their skills. The next section addresses student experience with digital literacy tasks.

Student Experience and Academic Success

Researchers are beginning to explore how factors such as out-of-school digital literacies relate to in-school practices. The studies in this section review some factors that can be considered when planning digital literacy instruction or considering how students support and augment schoolwork through digital communications outside of school.

Greenhow and Robelia (2009) asserted that “to engage in an increasingly Internet-mediated and participatory culture, students need a solid understanding of traditional print-based literacies, 21st century skills (Partnership for 21st Century Skills, 2008) and digital literacies of online reading, writing, and communication (Coiro, Knobel, Lankshear & Leu, 2008; Greenhow, 2008; Greenhow, Robelia & Hughes, 2009; Leu, O’Byrne, Zawilinski, McVerry & Everett-Cacopardo, 2009; Thurlow, 2004)” (page 1131). Their study of 11 low-income high school students from the United States followed out-of-school engagement in a social network site (MySpace) and looked at the students' perceptions of their interactions online and how they related to in-school literacies. Although a small study, it suggested that students who engage in out-of-school literacies successfully, as measured by self-efficacy, are able to enhance their in-school work as well. In discussing social networking specifically, Greenhow and Robelia posited that using social media allowed students to establish their status and expertise outside of school through the use of a somewhat public forum. “Status” refers to the placement of a person in a situational hierarchy, based in part on self-concept and partly on their performance of tasks within the community (Cohen and Lotan, 2004). The multiple literacies involved in social networking thus not only afford out-of-school practice in traditional literacies such as reading and writing, but establish students in the wider community as producers of content and ideas.

In order to focus on students who had significant experience, Greenhow and Robelia's (2009) study specifically excluded students who did not have internet access from home. Students were all from the same large metropolitan area. While participants were all low-income, issues that might apply to rural students or students without home

internet are not addressed. However, along with many other benefits reported by students, a specific school-related effect of social networking was to enhance support for schoolwork by allowing out-of-school communications with between 50 and 150 others in the students' extended networks.

One conclusion reached by Greenhow and Robelia (2009) was “communicative performances within MySpace demonstrated aspects of ‘academic’ literacy practices as well as unconventional practices” (p. 1151). Some of these practices included awareness of audience and subsequent modification of voice, tone and content, skills that are taught in Language Arts classrooms on a regular basis. Interestingly, students were unaware that such skills were directly related and applicable to school literacies. Teachers who survey their students early in the year might be able to tap these hidden skills and help students take stock of their areas of expertise, thus raising their sense of self-efficacy as well as their status within the classroom. The impact of self-efficacy and student perception of status can be useful for predicting skill level for academic tasks as the researchers in the next study described.

Zhao, Lu, Wang and Huang (2011) considered the idea that students who are “happy and curious when online” (article title) would see an increase in self-efficacy and effective use of the internet. Due to the difficulty of assessing actual online skills, they looked at Internet Self-Efficacy (ISE) which in this case stands in as a measure of student competence in using the internet. This study also investigated the specific impacts that parents, peers and teachers have on internet use. Limitations noted in this study were a possible lack of generalizability from the specific growing mid-level city they took their sample from and the difference in access to computers by high school students relative to younger children. They also noted that there are

differences between China and the United States in how computer use is perceived and supported. Some conclusions they were able to derive included the importance of teacher support and encouragement to use digital literacies.

Zhao et al. (2011) found that teachers have greater influence than parents, perhaps because they assign tasks that require the use of exploratory practices. They suggest that as teachers are more familiar than parents with uses of the Internet and more aware of the need for students to experiment, teachers can support and motivate students to engage in exploration. They recommend that schools provide additional time with less-structured but still supervised access for students who lack access at home. Students will be better prepared to accomplish academic internet-based tasks if they are encouraged by teachers and parents to engage in some exploration and unstructured internet use and are given opportunities to access the internet freely. Such use can increase students' ISE and skills performance. The impact of regular access to appropriate technologies in creating prior knowledge and interest agrees with the work of educators through more than a century, underlining the basic human need for repetition and engagement when learning (Dewey, 1997; Bruner, 1977; and Bransford, Brown & Cocking, 2000).

An intriguing connection between digital literacies and more traditional academic success was made by Plester and Wood (2009). They conducted a sequence of studies that explored how student familiarity with digital literacies transfers to traditional literacies. They investigated the effects of cell phone texting by pre-teen children in the United Kingdom. Their research focused on the way that student cell phones and text messaging fit into the overall idea of literacy and shed light on a

way that teachers can increase student self-efficacy and performance. At the same time, concerns exist that written language in academic contexts might be negatively affected by the instantaneous, simultaneous, and casual contexts of chat communications. "Texting" and "chat" both refer to somewhat informal internet or cellphone-based written communications that can take place in real time, much as face-to-face conversations do.

Plester and Wood (2009) looked at the need for phonological awareness, considered a foundation for traditional literacy. They noted a sense of playfulness that is found in children's spontaneous exploration of technology. Their research revealed that spelling errors in traditional literacy tasks did not increase markedly for students who used cell phones for text messaging relative to students who did not use text messaging. It also indicated that students who were more fluent texters scored higher on a verbal reasoning skills test. In the first two studies, "those who used the most phonologically based textisms were the best at spelling" (p. 1120). They also had fewer errors interpreting text messaging. Students demonstrated and articulated awareness of the differences between writing in a texting context and in more formal academic contexts. A third study indicated that the earlier a child received a mobile phone for texting, the better the student's overall performance on standard spelling and texting tasks. Plester and Wood suggested a beneficial effect on traditional literacy in the study is a likely result of student proficiency in texting. They were careful to point out more research is needed to be clear what needs to be addressed, when, and by whom, as well as how to support students with specific learning disabilities.

Despite promising results seen in student academic progress when digital literacies are used, teachers may wish to keep in mind that new technologies need

thorough investigation before deciding to use or reject any specific application. In the classroom, a teacher might choose to adopt a promising technology gradually, while supporting those students whose prior knowledge is limited. Thorough evaluation of the benefits of using technologies is warranted before wholesale adoption, as can be seen in the following set of studies.

Do Digital Literacies Support Student Learning?

Dewey (1997) wrote, “The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative” (p. 13). This is perhaps especially true of the use of technologies in classrooms. Digital literacies, though highly promoted by both state and national organizations are not universally accessible for a variety of reasons, some of which have been explored above. While word processing, spreadsheets and internet research are common in many classrooms, and are expected components of technology education in Washington State (Washington State Superintendent of Public Instruction, 2008), other uses are still developing. As noted by McKenna and Walpole (2007), in-classroom use of assistive technologies in reading for students with disabilities is one use for digital technologies. The purpose of this section is to explore a few ways digital literacies might – and might not – support learning.

A common use for technology in education is in supporting initial acquisition of information. Kuhl, Scheiter, Gerjets, and Gemballa (2011) studied university students in Germany to explore whether learning is easier and more effective when text is combined with dynamic (moving) images as opposed to static (still) images. Participants answered some questions of prior knowledge to eliminate results for those who

already had significant experience, and later reflected on how difficult tasks seemed. A control group received instruction using text alone, without any images. Relative to the control, verbal recall was not improved in the two groups using imagery, however recall of pictorial information was enhanced. No significant difference was recorded between the two visualization groups perhaps because students using still images viewed them several times. It appears that, depending on the learning outcome desired, the use of dynamic images such as can be found on various websites and other video technologies might be useful to enhance recall of graphics. A classroom teacher might choose to enhance learning with either video or static images if the content to be learned involves visualization rather than fact recall.

Another proposed use for technology is to support recall through review activities. Vos, van der Meijden, and Denessen (2011) have studied the way that being actively engaged in using information to create a product can support learning. They cited Kim, Park and Baek whose studies indicate “game-based learning, when using meta-cognitive strategies can be an effective learning environment for increasing students’ performance” (p. 128). Based on studies by these and other researchers, Vos et al. postulated “games could thus enhance students level of deep learning, by appealing to critical thinking skills, problem solving skills, decision making, knowledge transfer and meta-analytic skills (Gee, 2003; Kirriemuir & McFarlane, 2004; Wideman et al., 2007)” (p. 128). Traditional game-play has been used in classrooms for this purpose for a long time.

Vos et al. (2011) studied students ages ten to twelve to determine how construction of computer games affected learning relative to students who merely played educational computer games. The specific task for

students was to memorize unfamiliar proverbs. All students were engaged with “drag and drop” games, some as players others as creators. The students were screened for factors such as motivation, interests and perceived competence (related to self-efficacy). A pre-test of student knowledge was given to determine interest levels and whether students generally engaged in “deep learning” strategies, and a post-test was given to check for changes in those strategies. Simple game play by itself was less engaging than constructing the game, and students who constructed games did better on a post-test of proverb learning than those who merely played the game. Vos et al. did not study more complex game-play or construction, and they noted a clear correlation cannot be established between the learning and game play in this study. Still, the research cited in this article and the authors' findings support the idea that more complex game-play and game construction may be useful tools in helping students learn material as they become producers of knowledge. Given time and access to appropriate technology teachers might encourage students to create interactive, even on-line games as a way to help them think deeply about the content they are learning.

A different use of technology has been explored for communications in classroom learning communities. Sins, Savelsbergh, van Joolingen, and van Hout-Wolters (2011) explored how chat communication can benefit partner communication for school partner-based tasks. This study focused on discovering “whether chat comprises an appropriate communication channel in a collaborative inquiry learning environment, or whether face-to-face collaboration should be preferred to enable deep reasoning during collaborative inquiry” (p. 380). The study of 44 sixteen to eighteen year-old 11th graders centered on a collaborative task

requiring communication between students who were placed in mixed-ability dyads with identical tasks and instructions. Some students were asked to communicate verbally, others using only texting. The results indicated that the quality of reasoning was high for both groups, but off-task communications were higher for verbal interactions. Explicit language appeared to be enhanced when using chat or texting rather than verbal communications. Chat communications took more time than verbal. A teacher might consider using chat or texting if more explicit communication is a necessary component of the learning and when there is sufficient time.

As intriguing as studies that suggest benefits to the use of digital literacies may be, there is a growing awareness that as new types of cognitive demands and performances enter classrooms, some students who are skilled in traditional academic literacies struggle. Thorvaldsen, Egeberg, Pettersen, and Vavik's (2010) study pointed toward learning disabilities that inhibit people from using digital literacies in effective ways. Inhibitions from “computer anxiety” are well documented in the literature cited, as is a medical diagnosis called dyspraxia which the authors describe as “an immaturity in the way the brain processes information and this results in messages not being properly or fully transmitted” (p. 313). Thorvaldsen et al.'s small study of 144 children in Norway (grades 5 and 6, ages 10 to 12) followed a pilot of 17 students of the same age. Students filled out questionnaires, test scores were obtained in core areas as were teacher grades for arts, and interviews were conducted with some participants. Specifically, Thorvaldsen et al. investigated social use, computer efficacy (skill in use), and language tools. The authors noted some limitations of the study, including the exploratory nature of the study, the removal

of students who scored very low in appreciation of digital tools and the small sample size. Still, their results point toward useful areas to consider when teaching.

Thorvaldsen et al. (2010) found digital literacy was not significantly correlated with traditional subjects, with the exception of language skills. Interestingly, the students with the lowest skills who were not anxious about computer use were not affected by lack of access. Of the 144 students, three low-performing students functioned normally in school and had no other identified reasons for low digital literacy skills. The authors suggested this is a reasonable indicator that digital dysfunction is real and measurable, separate from other learning disabilities. For a classroom teacher, knowing that some students may struggle with computers even when there are no apparent barriers offers support for planning for differentiation in this area.

Digital literacies and computer technologies are well positioned in classrooms to support student learning when thoughtfully used. There are questions that deserve consideration, such as whether specific learning disabilities will emerge as students engage digital literacies, and when to use which technologies.

Teachers' Dilemma

This paper has explored some issues of the inequities normally called the “digital divide” and the growing field of digital literacy in schools. Professional organizations and government regulations now advocate for or require inclusion of digital literacy skills in K-12 education (see for example the Partnership for 21st Century Skills and the Washington State Superintendent of Public Instruction web pages). The idea of “digital natives” which is often applied to students, is only not supported by the research, but students who lack adequate home access are at a

disadvantage with digital literacy tasks in the classroom (see Robinson, 2009; Zhang, Lu, Huang & Wang, 2010). There are also indications that even students who have extensive prior knowledge of digital literacies need careful guidance when being asked to perform similar tasks for academics (see Margaryan, Littlejohn & Vogt, 2011; Zhao, Lu, Wang & Huang, 2011). Possibilities for enhanced learning when digital literacies are part of instruction and potential risk of harm are noted (see Sins, Savelsbergh, van Joolingen & van Hout-Wolters, 2010; Thorvaldsen, Egeberg, Pettersen & Vavik, 2010). Teachers have much to consider when designing instruction which includes digital literacy components.

Three categories can help teachers think about pedagogical use of digital literacies: access, experience, and application. Student access to current technologies varies widely, student prior experience is predictive of self-efficacy and skill level, and successful integration of technologies in classroom instruction requires planning. Classroom teachers can make effective use of technologies within the classroom when they are ready to pre-teach, re-teach or provide additional instruction for students with disadvantages (Leu, Castek, Henry, Coiro & McMullen, 2004). When possible, teachers might wish to find ways to provide students who lack home access with more time to informally explore digital literacy tasks.

What Isn't Said

Studies that made clear connections between in-school digital literacies and later employment opportunities were not found, although several non-empirical sources asserted that school preparation must include these putatively essential employment skills. The studies are not well clustered around a specific age group. The issue of rapidly changing technologies has

not been addressed except in passing. No single study clearly provided support for or against inclusion of digital literacies in classroom instruction. Computer-specific learning disabilities is an area of concern but still in its infancy in terms of research. While no clear link was made between modern communications technologies and academic success, this area of investigation is likely to continue yielding interesting data.

References

- Bransford, J.D., Brown, A.L. & R. R. Cocking. (Eds.). (2000). *How people learn: Brain, mind, experience, and school*. Washington, D.C.: National Academy Press.
- Bruner, J. (1977). *The Process of Education*. Cambridge, MA: Harvard University Press. (Original work published 1960).
- Clinton, H. (2011). *Internet Freedom*. Retrieved from: http://blogs.state.gov/index.php/site/entry/internet_freedom
- Cohen, E. & Lotan, R. (2004). Equity in heterogeneous classrooms. In: J.A. Banks (Ed.), *Handbook of Research on Multicultural Education. Second Edition*. San Francisco, CA: Jossey-Bass, pp.736-752.
- Computer History Museum. (n.d.) *Internet history*. Retrieved from: http://www.computerhistory.org/internet_history/
- DeNavas-Walt, C., Proctor, B.D. & J.C. Smith (2010). Income, poverty, and health insurance coverage in the United States: 2009. *U.S. Census Bureau, Current Population Reports, pp 60-238*, Washington, D.C.: U.S. Government Printing Office. Retrieved from: <http://www.census.gov/prod/2010pubs/p60-238.pdf>
- Dewey, J. (1997). *Experience and Education*. Indianapolis, IN: Kappa Delta Pi. (Original work published 1938).
- Freire, P. (2005). *Teachers as cultural workers: Letters to those who dare teach*. (Macedo, D., Koike, D., & A. Oliveira, trans.). Cambridge, MA: Westview Press (Kindle Edition).
- German, K. (2011, January 24). *A Motorola retrospective*. Retrieved from: http://reviews.cnet.com/2300-6454_7-10006345.html
- Greenhow, C., & Robelia, B. (2009). Old communication, new literacies: Social network sites as social learning resources. *Journal of Computer-Mediated Communication, 14*, 1130-1161. doi:10.1111/j.1083-6101.2009.01484.x
- Hargittai, E. (2010). Digital natives? Variation in internet skills and uses among members of the “net generation.” *Sociological Inquiry, 80* (1), 92–113. doi: 10.1111/j.1475-682X.2009.00317.x
- International Reading Association. (2009). *New literacies and 21st-century technologies: A position statement of the International Reading Association*. Retrieved from: <http://www.reading.org/General/AboutIRA/PositionStatements/21stCenturyLiteracies.aspx>
- Jansen, Jim. (2010). Use of the internet in higher-income households. *Pew Internet & American Life Project*. 11.24.2010. Retrieved from <http://pewinternet.org/Reports/2010/Better-off-households.aspx>
- Kühl, T., Scheiter, K., Gerjets, P., & Gemballa, S. (2011). Can differences in learning strategies explain the benefits of learning from static and dynamic visualizations?. *Computers &*

- Education*, 56, 176-187. doi:10.1016/j.compedu.2010.08.008
- Leu, Jr., D. J., Castek, J., Henry, L. A., Coiro, J., & McMullan, M. (2004). The lessons that children teach us: Integrating children's literature and the new literacies of the internet. *The Reading Teacher*, 57(5), 496-503.
- Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education*, 56(2), 429-440. doi:10.1016/j.compedu.2010.09.004
- Mckenna, M.C. & S. Walpole (2007). Assistive technology in the reading clinic: Its emerging potential. *Reading Research Quarterly*, 42 (1). pp. 140-145. Retrieved from: <http://0-www.jstor.org.cals.evergreen.edu/stable/4151708>
- Mineta, N.Y. (2000). Falling through the net: Toward digital inclusion: a report on Americans' access to technology tools. *National Telecommunications and Information Administration*. Retrieved from: <http://search.ntia.doc.gov/pdf/ftn00.pdf>
- Narcisse, D. (2010, November 8). Disconnected, disenfranchised, and poor: Addressing digital inequality in America. *Working-Class Perspectives | Commentary from the Center for Working-Class Studies*. Retrieved from <http://workingclassstudies.wordpress.com/2010/11/08>
- National Council of Teachers of English. (n.d.). *NCTE / IRA Standards for the English Language Arts*. Retrieved November 30, 2010, from <http://www.ncte.org/standards>
- Obama, B. (2011). *State of the Union address*. Retrieved from <http://www.whitehouse.gov/the-press-office/2011/01/25/remarks-president-state-union-address>
- Olivarez-Giles, N. (2011, Feb 14). *Wael Ghonim, Google exec, says Egypt's revolution is 'like Wikipedia'* Los Angeles Times. Retrieved from <http://latimesblogs.latimes.com/technology/2011/02/wael-ghonim-google-exec-says-egypts-revolution-is-like-wikipedia.html>
- Partnership for 21st Century Skills. (n.d.) *Overview: Information, media and technology skills*. Retrieved from http://www.p21.org/index.php?option=com_content&task=view&id=61&Itemid=120
- Robinson, L. (2009). A taste for the necessary. *Information, Communication & Society*, 12(4), 488-507. doi:10.1080/13691180902857678
- Sins, P. H., Savelsbergh, E. R., van Joolingen, W. R., & van Hout-Wolters, B. H. (2010). Effects of face-to-face versus chat communication on performance in a collaborative inquiry modeling task. *Computers & Education*, 56, 379-387. doi: 10.1016/j.compedu.2010.08.022
- Thorvaldsen, S., Egeberg, G., Pettersen, G. O., & Vavik, L. (2010). Digital dysfunctions in primary school: A pilot study. *Computers & Education*, 56, 312-219. doi:10.1016/j.compedu.2010.07.008
- Vos, N., van der Meijden, H., & Denessen, E. (2011). Effects of constructing versus playing an educational game on student motivation and deep learning strategy use. *Computers & Education*, 56, 127-137. doi:10.1016/j.compedu.2010.08.013
- Ward, A., & Wasson-Ellam, L. (2005). Reading beyond school: Literacies in a neighborhood library. *Canadian Journal of Education*, 28 (1/2), 92-

108. Retrieved from
<http://www.jstor.org/stable/1602155>
 Washington State Superintendent of Public
 Instruction. (December 2008).
*Washington State K-12 learning
 standards: Educational technology.*
 Retrieved from
[http://www.k12.wa.us/CurriculumInstr
 uct/pubdocs/EdTechStandards/K-12-
 EdTech-Standards-Dec2008.pdf](http://www.k12.wa.us/CurriculumInstr

 uct/pubdocs/EdTechStandards/K-12-

 EdTech-Standards-Dec2008.pdf)
- Washington State Superintendent of Public
 Instruction. (n.d.(a))
Defining Education Technology.
 Retrieved from:
[http://www.k12.wa.us/EdTech/TechLit
 eracy/ExpandedTechLitDef.aspx](http://www.k12.wa.us/EdTech/TechLit

 eracy/ExpandedTechLitDef.aspx)
- Washington State Superintendent of Public
 Instruction. (n.d.(b)) *What Does the
 Research Say About Technology
 Integration?* Retrieved
 from:[http://www.k12.wa.us/EdTech/Re
 search.aspx](http://www.k12.wa.us/EdTech/Re

 search.aspx)
- White, J. (2010, July 22). *Department of
 Education Hosts National Rural
 Education Technology Summit.*
 Retrieved from:
[http://www.whitehouse.gov/blog/2010/
 07/22/department-education-hosts-
 national-rural-education-technology-
 summit](http://www.whitehouse.gov/blog/2010/

 07/22/department-education-hosts-

 national-rural-education-technology-

 summit)
- Zhao, L., Lu, Y., Huang, W., & Wang, Q.
 (2010). Internet inequality: The
 relationship between high school
 students' internet use in different
 locations and their internet self-
 efficacy. *Computers & Education*,
 55(4), 1405-1423.
 doi:10.1016/j.compedu.2010.05.010
- Zhao, L., Lu, Y., Wang, B., & Huang, W.
 (2011). What makes them happy and
 curious online? An empirical study on
 high school students' internet use from
 a self-determination theory
 perspective. *Computers & Education*,
 56(2), 346-356.
 doi:10.1016/j.compedu.2010.08.006

Understanding Student Engagement: Contexts for Teacher Interventions

This paper explores factors that inhibit engagement as well as measures that teachers can enact to support engagement for their students. Six dimensions of engagement (academic, behavioral, cognitive, affective/emotional, psychological, and social) are described and analyzed for common factors to increase the accuracy of how information is synthesized across studies. The studies that were analyzed examined students in the United States with ages ranging from elementary to high school and incorporated a variety of existing student characteristics that influence engagement such as race, age, socioeconomic status, gender, and previous school performance. A comparison of the recommendations from all 11 studies analyzed shows that student engagement is supported by specific types of instructional methods and classroom cultures. Positive and supportive teacher-student relationships, a sense of community and ownership, acceptance and respect from peers, family involvement, belonging in the classroom, positive emotional experiences at school, and honest discussions around issues of racial equity and discrimination are all teacher-controlled methods that improve engagement by creating a classroom culture that supports it. Meaningful and authentic curriculum, opportunities for self-directed learning, high teacher expectations, mastery goals that emphasize personal growth, opportunities for cooperative learning, and activities that address issues of status are all instructional methods that support higher student engagement. It is recommended that to address as many factors that influence engagement as possible, teachers employ pedagogical methodologies that support multiple factors in a holistic manner. Culturally Responsive Teaching, complex instruction, and democratic and constructivist classrooms are all examples of pedagogical methodologies that teachers can adopt which will address multiple needs in regards to student engagement.

Engagement is defined as the state of being occupied, involved, or committed to an activity; often there is the association that engagement in a task includes enjoyment or a sense of fulfillment. In education student engagement is a sought after condition that teachers and schools strive to induce. High student engagement in school had been strongly linked to better learning outcomes and higher school completion rates. When students are engaged in their studies they become invested in their learning, are more persistent in the face of difficulty, and are more likely to take independent initiative when it comes to their work. This paper seeks to identify ways in which teachers can respond to factors that influence student engagement within their classroom practice.

During my time teaching in a second

grade classroom, it was usually very apparent when my students were not engaged with the material. Disengaged students would fidget, converse with or poke at their neighbors, their eyes would drift, they would interrupt with off-topic information, and make direct or indirect statements to indicate that they found the subject matter irrelevant. Engaged students were focused, they faced towards me during instruction, and when they interrupted or talked to neighbors it was with connections or questions about the material. With a quick visual and audio sweep of the room I could identify the signals of procedural engagement in my students fairly reliably.

Certain aspects of behavioral and academic engagement are highly visible, but many signs of engagement are subtle and easy to miss. To comprehensively understand

engagement involves exploring it as a multidimensional construct. There is not a clear consensus on how to define engagement in educational research circles. It is agreed that engagement is multidimensional, but there is disagreement over what these dimensions are. Various studies look at dimensions such as behavioral, academic, emotional/affective, cognitive and psychological in various combinations. Nearly all of these studies acknowledge more than one dimension as part of engagement, for example, researchers might examine ways to influence behavioral engagement while acknowledging that psychological and academic engagement are also important. Other studies, especially older ones, might look at behavioral and academic engagement only, without considering other dimensions. Because not all dimensions of engagement are readily apparent, teachers who wish to increase student engagement need to know what dimensions they will be addressing and how they will know if they have been successful.

It is also important to consider the quality of engagement and to define the difference between motivation and engagement because the two are often considered in tandem with inadequate distinctions made. “[M]otivation has been thought of in terms of direction, intensity, a quality of one’s energies” while “[e]ngagement reflects a person’s active involvement in a task or activity” (Appleton, Christenson, & Furlong, 2008, p. 370). Some theorists consider motivation to be a sign or result that indicates engagement. It is possible for students to be highly motivated without being substantively engaged in their studies. When students are substantively engaged they are invested in their learning and gain emotional and cognitive fulfillment from their studies. Students who are only procedurally engaged might be on-task when it comes to paying attention, doing their work, and answering questions, but they do not necessarily find the work engaging in and of itself (Woodward & Munns, 2006).

I first developed an interest in the purpose and presence of student engagement when I taught secondary school English as a Peace Corps Volunteer in the Republic of Georgia in 2007. I noticed that students who showed outward signs of engagement during class were usually much higher performing in English skills than their classmates who showed signs of disengagement. While I recognized some of the factors that might be acting as barriers to student engagement, I had a limited idea of what I could do to intervene. During my student teaching experience in the fall, I entered the classroom with a much clearer picture of how engagement and success in school are related to one another. Engaged students are more motivated and authentically interested in their school work and as a result, are often more successful academically. Inequality can arise when it comes to engagement and success because traditional school structures tend to favor students who are naturally engaged by the classroom setting without making accommodations to reach students who are not automatically engaged in the schooling process. Through this paper I want to expand my knowledge of school and background factors that influence engagement and consider what methods of intervention can be implemented at the classroom level.

During the early years of education, a student’s ability to engage with school can be a strong predictor for his or her future relationship with education. Teaching young students in a way that encourages them to engage from an early age is a way to give them a positive and powerful relationship to their own schooling (Marks, 2000; Perdue, Manzeske, & Estell, 2009). Research has shown that students who are engaged in school are more likely to be successful during their time there and eventually graduate. These students have more positive feelings about their educational experience and, when they do graduate, they are more likely to seek out higher education (Marks, 2000). As early as elementary school, engagement can be used as

an indicator of whether or not a student will drop out later in life. Dropout risks are shown to be mitigated by preschool engagement intervention programs over a decade after the programs took place (Perdue et al., 2009). The evidence that engagement and school success are linked is compelling; programs and measures to increase engagement are a priority for many school districts.

The multidimensional nature of barriers to engagement is another consideration that poses a difficulty when addressing students' need for engagement support. Studies have discovered that student engagement can be affected by a variety of factors, many that are not under the direct control of schools and teachers. Relationships with peers, family, and school, as well as the individual traits of the child can all have an influence on engagement. Levels of engagement have also been linked to gender, socioeconomic status, age, developmental level, mobility, ELL status, disability status, social skills, prior achievement, future goals, and many other factors (Perdue et al., 2009). A classroom is like a very individualized ecosystem, the composition of which will inevitably change, sometimes gradually over the course of an entire year, but sometimes very rapidly. At any one time, a teacher might have students with hundreds of varied environmental or social factors working against their engagement. The most realistic way a teacher can raise engagement for one student is to be aware of the methods that most efficiently raise engagement for all students and implement classroom practices that support engagement for all their pupils.

Because engagement can be influenced by so many factors which are not within the control of a teacher, it is important to consider what factors are under teacher control. District and state policy, mandated curriculum, building resources, funding, standardized testing, student and family background, and class size are all factors that teachers cannot directly influence. It is important for teachers to discover when these barriers to engagement exist and attempt

to address them in a positive way. Teachers can discover which engagement interventions are likely to have the highest positive return so that they can counterbalance some of the factors that are out of their control. Teachers can control aspects of curriculum, classroom set-up, classroom culture, and classroom management systems, and it is important that teacher-controlled aspects be as influential as possible.

The multidimensional aspect of engagement adds to the complicated nature of improving engagement in the classroom. Teachers must decide which dimensions they believe make up substantive engagement and decide what they feel will be the most effective way to address these dimensions in their classroom. The situation-specific engagement barriers that are not within the teacher's control must be accounted for and addressed as well. When all these things are accounted for, it is still important to remember that engagement does not stand alone, and increasing engagement will not always solve academic problems. Just as engagement is multidimensional, engagement itself is just one dimension of school success.

Definitions of Engagement

The issue of educational engagement only began to surface in the research over the last few decades. "In 1985, a review by Mosher and MacGowan found only two studies that actually used the term 'engagement'" and these two studies defined engagement in very different ways (Appleton et al., 2008, p. 369). Under the current definition of engagement, educational theorists recognize that engagement is not one-dimensional, but there are different schools of thought about how engagement should be divided into dimensions. Engagement is described as consisting of two to four dimensions, but there is a great deal of variance in how these dimensions are combined. In 23 articles that discussed engagement there were eight dimensions of engagement described, with two studies that did not define which dimensions they were working with, and

another two that only defined it in terms of substantive and procedural without looking at specific dimensions. Overall, 13 articles mentioned behavioral engagement, 10 mentioned affective/emotional engagement, nine mentioned cognitive engagement, six mentioned academic engagement, three

mentioned social engagement, one mentioned motivational engagement, one mentioned operational engagement, and four did not define engagement dimensions (Table 1; Studies used in the creation of this table are listed in references).

Table 1 *Dimensions of Engagement*

| Dimension | Possible Descriptors/Indicators |
|-------------------------|--|
| Academic | Attendance, Effort, Grades, Grade Point Average, Interest, Involvement, On-Task, Overt (observable), Participation, Performance, Persistence, Credits, Graduation, Learning Behaviors, Task Completion, School Completion |
| Behavioral | Attendance, Cooperation, Effort, Follows Rules, Grades, Grade Point Average, Involvement, On-task, Overt (observable), Participation (Extra-curricular and School), Performance, Persistence, Attention, Appropriate Interaction, Concentration, Decision Making, Enthusiasm, Extra-Credit, Finishes Homework, Infractions, Initiative, Observable Actions, (Extra-Curricular), Preparation, Positive Conduct, Seeking Help, Test Scores, |
| Social | Belonging, Bonding, Cooperation, Following Rules, Identification, Values School, Acceptance, Aggression, Behaviors (Pro- & Anti- Social), Collaboration, Commitment, Contribution, Positive Interaction, Quality of Friendship, Social Support, Supporting Others |
| Cognitive | Autonomy, Competence, Feeling That Teachers And Peers Care, Motivation, Self-Efficacy, Self-Regulation, Value, Aspirations, Assessments, Beliefs, Comprehension, Connections, Evaluation, Expectations, Investment In Learning, Learning Goals, Mastery, Metacognition, Perceptions, Processing, Relevant, Self-Concept, Skills Mastery, Strategic Thinking, Thinking, Usefulness |
| Affective/ Emotional | Autonomy, Belonging, Feelings That Teachers And Peers Care, Identification, Interest, Motivation, Values School, Affect, Anxiety, Attachment, Attitudes, Bonding, Control, Dignity, Enjoyment, Happiness, Likes School, Membership, Ownership, Positive Feelings About Learning |
| Psychological | Belonging, Competence, Identification, Performance Goals, Self-Efficacy, Self-Regulation, Achievement Goals, Emotionally Supported, Peer Relationships, Respect, Teacher Relationships |

Overall, there was a lack of consistency about the definition of engagement, sometimes even in regards to the same researchers. Finn is considered to be a seminal researcher when it comes to issues of engagement and his work was cited in many studies and literature reviews. In a 1993 study, Finn considered engagement to be emotional and behavioral, and then in a literature review from 2003 and a

study from 2004, he shifted his dimensional descriptors for engagement to academic and social. Older studies on engagement are more likely to consider fewer dimensions and to focus more often on academic and behavioral engagement, which are considered to be more overt dimensions, meaning that they are simpler to observe and record (Reschly, Huebner, Appleton, & Antaramian, 2008). Furthermore,

some articles state that engagement dimensions need to be integrated and considered together for researchers to gain an accurate picture, while others believe that researchers should look at dimensions in isolation for the purpose of study (Perdue et al., 2009)

To help highlight the different ways that dimensions have been described by theorists I have organized a table that integrates various descriptors, measures and examples that articles used for each of the six common dimensions (Table 1).

Descriptors that appear under more than one dimension are in bold. While there are patterns to be seen, a review of the various ways that different theorists have chosen to describe dimensions of engagement makes it clear that there is not a consensus. It is common for two different research groups to define engagement with different dimensions but use many descriptors and indicators in common. For example the characteristics that Finn (2003) uses to describe social and emotional dimensions of engagement are all very similar or identical to the characteristics that Harte (2010) uses to define behavioral, emotional, and cognitive dimensions of engagement. Researchers are using the same characteristics to measure engagement, but they are organizing them under different dimensional labels. Using the information in Table 1, I have created my own definitions for each category of engagement. In order to maintain clarity in regards to my discussions of engagement research, I will be using these definitions in my discussion. Therefore, if a study labels a dimension as academic, but uses indicators that match the definition of cognitive engagement that I have given, I will consider the findings in terms of cognitive engagement.

The characteristics used to describe behavioral, academic, and social engagement tend to be concrete and quantifiable. Behavioral engagement is characterized by on-task behavior, attendance, participation in class, and rule-following. Academic engagement is indicated by students' grades, whether or not

they complete and return assignments, meeting academic requirements, and graduation. Students' social engagement can be measured by their relationships with teachers and peers, whether they identify as members of the school/learning community, and whether they display pro-social or anti-social behaviors.

Affective/emotional, cognitive, and psychological engagement are harder to clearly define, partially because they are usually measuring characteristics that are not easy to quantify such as feelings and beliefs, but also because there is a significant overlap in the signifiers that researchers use to define them. Affective engagement and psychological engagement are somewhat interchangeable when their characteristics are examined. None of the articles used both psychological and affective engagement as dimensions together or made a distinction between the two. They are measured by students' feelings about school, the value they place on school, their feelings of belonging and identification with the school environment, their sense of self-efficacy, the feeling that they are valued, and their relationships to teachers and peers. Cognitive engagement is indicated by students' use of learning strategies, their investment in their learning, their sense of competence and motivation, their ability and interest in making personal goals, their ability to be metacognitive, and their sense of autonomy.

Literature Review

For the purpose of this paper, reviews of the studies have been organized under four subheadings: classroom and environment factors, student-teacher relationships, peer relationships, and common factors that influence engagement. The first section describes studies that explore how engagement is increased or decreased in relation to the environment of the school and the methods of instruction used. The second section considers how student engagement is influenced by relationships with teachers and the third looks at how the qualities of peer relationships

intersect with levels of engagement. The final section investigates how class sizes, the race of students, and student mobility factor into engagement.

Classroom and Environment Factors

This section discusses three studies which considered how school environments and methods of instruction interacted with levels of engagement for students. The first considers how overall school structures designed to increase engagement affected students across all age groups. The second and third examine how specific types of curriculum and school participation affected engagement among middle school students.

Marks (2000), defines engagement as consisting of affective and behavioral dimensions. In the course of her research she examined 3,669 elementary, middle, and high school students (fifth, eighth, and 10th grades) in math and social studies classrooms and attempted to determine whether there were patterns of engagement that could be identified across grade levels. Marks also considered how students' personal backgrounds influenced their engagement, how engagement differed based on subject matter, and whether or not schools were actively engaged in implementing reforms that have been suggested to increase student engagement. The study found that as students rose in grade level, their engagement decreased, but there were several interventions that could be used to support continued engagement.

Because the study looked at effective interventions, participating schools were selected based on the reforms they had initiated; therefore, schools were not sampled randomly. Restructured elementary and high schools also had a much higher proportion of minority students than the national average, which could influence generalizability to more homogenous populations. The study was also not longitudinal; it looked at students in different age groups, but did not follow individual students and track their patterns of engagement. Still, the study gives useful

information on the kinds of instruction and reform that influence student engagement in school.

The study examined the interventions of authentic instructional work and social support systems. Marks (2000) defined authentic instructional work as schoolwork that students felt was connected to the real world and found cognitively challenging. Social support systems were considered to be in place if the school encouraged a learning culture of collaboration, high expectations, and parent involvement. Authentic instructional work, a supportive school environment, and parental involvement, all led to higher levels of engagement in elementary and high school. Interestingly, parental involvement did not enhance engagement for middle school students, who also showed the greatest drop in engagement due to feeling alienated from school. Girls showed a tendency to be more engaged than boys, but the study found no difference in engagement due to racial or ethnic background.

Marks (2000), is not the only researcher to look at authentic instruction and support structures. Jennings (2003), examines the relationship between what he terms Meaningful Participation in School (MPS), caring adult and peer relationships, and students levels of academic and affective engagement. Jennings defines MPS as “the involvement of the student in relevant, engaging, and interesting activities with the opportunities for responsibility and contribution” (p. 45). The study targeted 229 seventh grade students from a diverse urban school system. Of the students surveyed almost equal numbers identified as Asian American, African American, Latino, and White.

Students were rated on their MPS through a survey that asked them about whether they felt that they did meaningful activities in school, had ownership of rules and activities in school, and made a difference in their school community. Interestingly the results of the study showed that high MPS was not correlated to higher academic standing, but moderate MPS was. Jennings (2003) concluded that this might

be due to students with moderate MPS having opportunities that lead to meaningful participation in activities outside of school in their personal cultural communities. These students might be less actively engaged in MPS because of opportunities for meaningful participation in the community, but this meaningful participation could still support high academic standing. Students with high MPS did show more positive peer relationships and caring adult relationships, though only caring peer relationships had a significant correlation with academic achievement. A weakness is that the study did not clearly examine how students' self-concept as learners was influenced by community resources and support outside of school. The information on adult and peer relationships further supports the findings by Marks (2000) that middle school students' engagement is more influenced by their peers than by adults.

The way that a teacher presents curriculum to students is not without influence, as Doppelt, Mehalik, Schuun, Silk, and Krysinski (2008) explore. This study looked into the influence Design-Based Learning (DBL) had in science classrooms as opposed to scripted inquiry. DBL is defined as instruction that "provides a reason for learning science content by engaging the student in design and using a natural and meaningful venue for learning both science and design skills" (Doppelt et al., 2008, p.23). DBL is a student centered model that relies on groupwork, with the teacher acting as a guide rather than a dispenser of answers. Students participate in hands-on, creative projects that can be applied to real life situations and questions, and they are assessed in multiple ways including written tests, oral presentations, and portfolios of their work. Problematic aspects of DBL are that it requires teachers to be able to plan comprehensive design-based units and teachers must also be willing to allow students to create their own activities as a way to construct their understanding. If these two aspects of DBL are not present it becomes another type of scripted, teacher-centered

curriculum.

Examining cognitive and academic engagement, Doppelt et al. (2008) worked with two eighth grade science classes, one considered low-achieving, the other high achieving. At the end of the unit the achievement gap for African American students and students with low socioeconomic status had narrowed, and the teacher rated the low achieving class as being more engaged than the high achieving class. Though the low-achievers did not do as well on the knowledge test at the end of the unit, in all other indicators they showed a greater gain in understanding. The teacher shared that he noticed that high-achieving students were more dependent on teacher instruction and less willing to take risks in the portfolio portion of the unit, while previously lower-achieving students were more generative, employed better groupwork, and were more thorough than the high-achieving group.

Factors such as age, grade level, gender, curriculum, race, socioeconomic status, and previous success in school can be initial determinants of whether students will have high or low engagement in school. Research has shown that collaboration, meaningful and authentic instruction, high expectations, student-centered approaches, a supportive school environment, family involvement, and positive peer relationships are all interventions that can increase engagement for students regardless of their characteristics.

Student-Teacher Relationships

The following section explores three studies which seek to examine the relationship between student-teacher relationships and engagement. The first examines engagement among middle school students in relation to teacher attitudes. The second looks at how teacher goals influenced elementary school students' engagement and the third explored how middle and high school students' emotional experiences at school influenced their engagement.

Eccles et al. (1993), looked at student motivation, as driven by cognitive and affective engagement, among 3,248 middle school students over the course of two years. Instructional practices such as a rise in ability grouping, fewer chances for students to make decisions, and teachers who had lower expectations for students all had a negative effect on student engagement. On average, teachers were shown to have a more negative perception of their students and a stronger desire for strict control than elementary school teachers. The more a teacher displayed negative perceptions and controlling behaviors, the more their students' motivation dropped. A lack of positive relationships with teachers had a negative effect on students. This is interesting in light of the information from Marks (2000), and Jennings (2003), which indicated that positive teacher-student relationships in middle school years did not create an appreciable difference in engagement. One reason for this might be that Marks and Jennings were both looking at schools where reform measures were already in place, while Eccles et al. (1993) are looking at traditionally structured schools. It could also be that middle school students are not as receptive to interventions from adults, but are still vulnerable to negative relational structures.

Hughes, Wei, & West (2011), looked at the behavioral engagement of 497 academically at-risk students in grades two through five. Researchers examined how the classroom structures created by teachers had an impact on engagement based on whether the teacher created mastery goal structures or performance goal structures. Mastery goal structures are those that emphasize substantive engagement in learning. They encourage students to show effort and measure their progress by their own progress not the progress of their classmates. Performance goals involve comparing student performance to hard standards and their peers and they emphasize correct answers over growth. The study found that not only did student engagement fall in relation to

performance goals; it found that performance goal orientations among teachers became more common as students rose in grade levels. Because the study was looking at at-risk students, the researchers wondered if these students might be particularly vulnerable to negative impacts from performance oriented goals as compared to students who are not considered at-risk.

Reschly et al. (2008), examined the cognitive and psychological engagement of 293 students, grades seven through 10, in a rural area of the U.S. The researchers found that positive emotional experiences at school led to increased engagement, while negative emotional experiences at school led to lower engagement. They also found that students who reported regularly experiencing positive emotions were more likely to implement coping strategies such as problem solving and seeking support when it came to difficulties at school. The researchers highlight the fact that often engagement studies explore how engagement is negatively influenced by barriers rather than examining how positive school experiences can be related to increased engagement. They acknowledge that the results of their study are limited by the fact that the effectiveness of interventions on student emotion will be dependent on the individual personality, interest, and ability of each student. They also note that there could be a selection bias due to the return of consent forms possibly being an indicator of students who had a higher tendency to actively participate in school. This is a limit that can be applied to many studies that require students to return consent forms in order to participate.

According to the studies above, teachers can directly influence the engagement of their students in several ways. Controlling behaviors, performance goals that encourage ability comparisons between students, and a lack of emotionally positive experiences can lead to decreased engagement. On the other hand, engagement is fostered when teachers have high expectations for their students, focus on

mastery and improvement over competition, seek to foster positive emotions in their classroom, and provide students with emotional support.

Peer Relationships

This section explores two studies centering on student engagement and how it relates to relationships with peers. The first looks at individual relational patterns while the second examines the overall emotional orientation of a group of students. Peer relationships have been shown to be of primary importance to middle school students, but they have value for students at all age levels. Perdue et al. (2009) conducted research into how the peer relationships of students in third grade would relate to their school engagement as fifth graders. The study recorded data on academic achievement, social skills, family relationships, family income, overt aggression, relational aggression, and peer relationships when students were in third grade. Students were then surveyed about their affective, behavioral, and cognitive engagement in fifth grade and the earlier data was used to control for factors other than peer relationships. Both urban and rural populations were present in the study population, and the racial breakdown was roughly proportional to that of the United States. A limit to the study is that the researchers did not examine whether peer relationships might have a different level of influence depending on whether students had other factors that placed them at a higher risk for disengagement such as low socioeconomic status or a disability.

Researchers discovered that high levels of friendship quality and social support led to higher levels of engagement, while overt aggression such as oppositional behavior, was associated with lower levels of engagement. Students who employed higher levels of relational aggression, defined as controlling and teasing types of behavior towards peers, were more likely to have high engagement. This suggests that engagement can be tied in some

ways to social status, since relational, but not overt, aggression is linked to popularity and social influence. Students who engage in relationally aggressive activities such as “seeking to harm individuals by negatively affecting either their relationships with others or their sense of belonging” are usually students who their peers rate as being popular or high status (Perdue et al., 2009, p.1086). While the higher status perpetrators of relational aggression showed increased engagement, the lower status students who were on the receiving end of that relational aggression showed lower rates of engagement. This suggests that students' engagement in class can be influenced by their social status within the classroom or school.

In general, peer relationships are just as, if not more important than, student-teacher relationships, especially among middle school students. Conner (2009), conducted a study on the relationship between student engagement and cohort cultures by examining groups of International Baccalaureate (IB) students from eight different schools. Conner measured students' feelings about the extended essay assignment required for an IB diploma and found that the highest and lowest levels of engagement were predicted most strongly by collective student attitudes towards the assignment. For the most part, students in a cohort held similar levels of engagement towards the assignment. The school with the lowest level of engagement among students was described as having a culture of complaint. Students said that they felt the assignment was pointless and shared feelings of frustration and annoyance. The school with the highest level of student engagement was described as having a culture of commitment. Students described the assignment as valuable and interesting, and students who were considered to be high-status by their peers were ones who placed an emphasis on academic achievement. At the high-engagement school high-status students were those that most embraced the assignment and its use, while at the low-engagement school

the highest status students were the most vocal about disliking the assignment. While the study looks at peer influences, it does not record or describe differences in the teaching methods between the two types of cohorts. It is possible that the presentation and structure of the classrooms differs in some ways.

Engagement can be affected by peer relationships, especially those that relate to status. High-status students are more likely to be engaged than low-status students. The engagement displayed by high-status students is also a litmus for the whole group. If high-status students show a strong, meaningful engagement with class activities, it is more likely that their peers will also be more engaged. It is unclear whether this is because students are following the example of high-status peers, if in an environment of higher engagement those with the highest engagement become high-status, or if it is a combination of these factors.

Common Factors That Influence Engagement

This section includes three studies that highlight common student characteristics that impact engagement. The first looks at student mobility and the second at whether race and class sizes impact engagement. The third examines racial socialization and the impact that positive parental relationships have on engagement for African-American youth.

Gruman, Harachi, Abbott, Catalano, and Fleming (2008), examined the ways in which frequent moves put elementary students at risk for school disengagement, and what factors alleviated some of that risk. The study looked at academic and affective engagement in 1,040 students grades two through five. Fifty percent of these students stayed in one school over the period, 33% moved once, 13% moved twice, and 5% moved three or more times. There are several limitations to how generalizable the results of this study are. Firstly the population examined was 82% White, 7% Asian/Pacific Islander, 4% Hispanic, 4% African American, and 3% Native American so it was not

proportional to the general U.S. population. Also, the population was a suburban one and the results might be different in a more diverse, urban population, especially one with a higher rate of student mobility.

Results showed that moving had a cumulative negative effect on students' academic engagement and achievement, though for the most part frequent moves did not decrease a child's positive attitude towards school. A decrease in engagement following a move was mitigated when students had positive and supportive relationships with peers and teachers. Students who felt that they were accepted by their peers and supported by their teacher were more likely to maintain engagement even after a move. In counterpoint to Marks (2000) and Jennings (2003), who found that middle school students' engagement was more dependent on peer relationships, this study found that during the elementary school years, strong teacher support was more powerful than peer acceptance.

Finn is considered to be a seminal researcher on issues of engagement and he was one of the first to consider whether minority students were at a higher risk for disengagement than their White peers. In 1993, Finn & Voelkl published a study that looked at 6,488 at-risk students in eighth grade. African American students made up 28% of the sample, Hispanic students 33%, and 39% were White students with low SES. Finn measured behavioral and affective/psychological engagement and examined how they interacted with student-teacher relationships and school structures. The study found that when minority students were enrolled in schools with a higher minority population they were more engaged and felt more supported by the school environment. The greatest engagement factor uncovered was school size, with results indicating that small schools and class sizes led to a greater sense of belonging and engagement for all students.

A study conducted by Smalls (2010) also took a detailed look at the relationship between

race and engagement. Smalls examined the interaction between the academic engagement of African American youth (Ages 11 to 14), and their relationships with their primary caregiver mothers. Smalls examined the child-centeredness of parenting practices, messages of racial pride (being African American is a positive thing), and messages of racial barriers (meant to prepare adolescents for adversity stemming from their race) that characterized the adolescents' relationships with their mothers. The study did not look closely at the relationship between examined variables and participants' socioeconomic status (SES) and Smalls makes a point that further research should more carefully examine engagement and racial socialization in relation to SES.

Results showed that adolescents who received messages of racial pride had higher engagement, but that racial socialization in general, even messages about racial barriers, were linked with higher engagement. A positive parental relationship was also a strong indicator of enhanced engagement. The implications of this research for intervention are twofold. Firstly, it highlights the importance of family involvement as a way to help engage students in learning. Secondly, it suggests that conversations that acknowledge and examine race can benefit student engagement.

High student mobility, large school/class size, a lack of racial socialization (racial pride and preparation for adversity), and being a racial minority in the classroom can put students at a heightened risk for low engagement. A supportive classroom environment, authentic and honest discussions about race, strong student-teacher relationships, parental support, and peer acceptance can all act to mediate environmental factors and increase engagement.

Recommendations

There are factors that influence student engagement which are not under the control of teachers or schools. Characteristics that students bring to the classroom with them such

as race, socioeconomic status, gender, and previous school performance are associated with levels of engagement. This does not mean that teachers cannot heavily influence student engagement to the point that the effects of these characteristics are mitigated or largely eliminated. I have split these teacher interventions into two groups of action, classroom culture and instructional methods. Each section will describe what factors the research identifies as important for engagement and identify specific teacher practices that can address these factors

Classroom Culture

The elements that support an engaging classroom culture are well supported when teachers practice democratic classroom management and Culturally Responsive Teaching (CRT). CRT and democratic classroom management are structures that incorporate a variety of engagement supporting practices.

Democratic classrooms are ones where teachers treat their students as capable and valuable individuals who should have ownership and authority when it comes to creating classroom norms and structures (Jennings, 2003). Students in democratic classrooms are encouraged to participate in a community that values learning and knowledge (Connor, 2009). Students who feel supported and valued by their teachers show a higher level of engagement than students who do not (Gruman et al., 2008; Finn & Voelkl, 1993; Eccles et al., 1993). The classroom is seen as a community of learners who should be supported in becoming active citizens in a democratic society. The teacher shows respect for the individual rights of students and students are expected to respect the rights of their classmates. Peer relationships are valued and students are supported in creating positive connections with their classmates. The creation of a community of learners supports students with characteristics that put them at greater risk for disengagement (Perdue et al., 2009; Gruman

et al., 2008). Family involvement is linked to higher school engagement for students and teachers in democratic classrooms that treat families as partners in the educational process. They keep lines of communication open and find opportunities to include family members in the school community (Landau, 2004; Marks, 2000; Smalls, 2010). Democratic classrooms take student feelings and perspectives into account. This is important because students who feel as if they are valued members of the learning community and who have positive emotional experiences in school show higher engagement (Perdue et al., 2009; Reschly et al., 2008).

While democratic classrooms involve fostering an appreciation for diversity and a respect for cultural differences, CRT is a powerful tool that can address equity issues related to a student's cultural background, race and ethnicity. CRT is based on the application of democratic classroom ideals, but specifically focuses on issues of equity in classrooms that are linguistically and culturally diverse. Teachers who employ CRT not only actively acknowledge concepts such as White privilege and institutionalized racism, they create learning opportunities for their students to grapple with issues of oppression and how it influences their lives. When properly applied, CRT honors and includes multiple cultural perspectives in all aspects of the curriculum (Vavrus, 2010). Teachers who employ CRT support student engagement in several ways. By responding to diversity and acknowledging issues of inequality these teachers support positive emotional experiences and a sense of belonging and ownership for all students in the classroom (Reschly et al., 2008; Finn & Voelkl, 1993). They are also creating opportunities for minority students to discuss and consider their feelings about racial pride and racial barriers in a supportive and safe environment. African American students show higher levels of engagement when they are able to discuss issues of racism and feel that they are members of the community (Smalls, 2010; Finn &

Voelkl, 1993).

Instructional Methods

Student engagement is supported by instructional methods that incorporate the following:

- Meaningful and authentic curriculum;
- Opportunities for self-directed learning;
- High teacher expectations;
- Mastery goals that emphasize personal growth;
- Opportunities for cooperative learning; and
- Activities that address issues of status.

These methods of instruction are all addressed by a constructivist classroom (Brooks & Brooks, 1999) where a complex instruction model of cooperative learning is applied (Cohen & Lotan, 2004; Cohen, 1994).

Constructivist teaching philosophy emphasizes relevant and authentic instructional activities that are centered around the desire to help students develop a deeper level of understanding. When instruction is relevant and meaningful, students display an increased level of interest in their education (Doppelt et al., 2008; Connor, 2009). Personal growth and effort are given emphasis over correct answers and comparative performance and teachers' approach learning with the view that all students are capable of meeting high standards. The individual interests of students are taken into account and they are seen as having ownership of their own learning process (Brooks & Brooks, 1999). Hughes, Wei, & West (2011) and Eccles et al. (1993) both describe how the expectations and goals that teachers set for students will help determine their engagement.

Cooperative learning fits very well into a constructivist pedagogy and the complex instruction model of groupwork specifically targets issues that can lower student engagement. In complex instruction teachers

take the perspective that each student has valuable skills, knowledge, and insights to contribute to the larger group. Certain expressions of skill and knowledge are not given greater importance than others and tasks are designed so that no single student will have all of the skills necessary to complete the task (Cohen & Lotan, 2004; Cohen, 1994). Tasks that are student centered, assess growth not comparative accomplishment, and involve multiple ways to display information have been shown to increase engagement (Doppelt, et al., 2008; Eccles et al., 1993). It is important to recognize that students who feel that they are lower status in the classroom will often disengage (Perdue et al., 2009). Complex instruction involves addressing issues of status in the classroom by working to equalize it.

Future Research

Engagement is an important predictor of student success, but it is not an easily defined concept. While there is some evidence that educational journals are working to create a consensus about how to define engagement, currently there are many different ways it is defined in regards to students. It is possible for two different studies to define engagement with completely different dimensions and criteria, this means that when referring to engagement there is a need for a specific description of the author's personal definition. This disparity among definitions also makes a clear comparison of many studies challenging. The conclusions of a study that defines engagement as behavioral (on-task, attendance, grades, and rule-following) will be very different from a study that defines engagement as cognitive (investment, comprehension, self-concept) even if the intervention is exactly the same. To create a body of research that can be accurately compared or synthesized a more consistent definition of engagement needs to be implemented in research.

Conclusion

Within this paper I sought to examine a

broad range of factors that can influence engagement and identify interventions for these factors that can be directly implemented by classroom teachers. Students enter the classroom with personal characteristics, beliefs, and backgrounds that will affect their level of engagement. These diverse barriers however, do not have to be addressed in isolation. Peer and teacher support are helpful for all students in the class, not just those who struggle to engage. Curriculum that incorporates design-based, student-centered learning is helpful for all students, not just those who are at-risk. By examining multiple ways in which teachers can support student engagement as a whole, a picture can be created of what types of classroom practices and environments are most likely to increase engagement for all students. Culturally Responsive Teaching, complex instruction, and democratic and constructivist classrooms are teacher-controlled pedagogical measures that enact multiple supports to engagement through their practice. It is my belief that when used in concert, these practices have the potential to create opportunities for every student in the classroom to experience what it means to be substantively engaged in schoolwork.

References

- Appleton, J.J., Christenson, S.L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools*, 45(5), 369-386. doi: 10.102/pits.20303
- Brooks, J.G., & Brooks, M.G. (1999). *In search of understanding: the case for constructivist classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Chien, N.C., Howes, C., Burchinal, M., Pianta, R., Ritchie, S., Bryant, D.M., Clifford, R.M., Early, D.M., & Barbarin, O.A. (2010). Children's Classroom Engagement and School Readiness Gains in Prekindergarten. *Child Development*,

- 81(5), 1534-1549.
- Conner, J. O. (2009). Student engagement in an independent research project: the influence of cohort culture. *Journal of Advanced Academics*, 21(1), 8-38.
- Cohen, E. G. (1994). *Designing groupwork: strategies for the heterogeneous classroom*. (2nd ed.). New York, NY: Teachers College Press.
- Cohen, E. G., & Lotan, R. A., (2004). Equity in heterogeneous classrooms. In Banks, J. A. & McGee Banks, C. A. (Eds.), *Handbook of research on multicultural education* (736-750). San Francisco: Jossey-Bass.
- Decapua, A., & Marshall, H. W. (2010). Serving ELLs with limited or interrupted education: Intervention that works. *TESOL Journal*, 1.1, 49-70.
- Doppelt, Y., Mehalik, M. M., Schuun, C. D., Silk, E., & Krysinski, D. (2008). Engagement and achievements: a case study of design-based learning in a science context. *Journal of Technology Education*, 19(2), 22-39.
- Eccles, J. S., Wigfield, A., Midgley, C., Reuman, D., Iver, D. M., & Feldlaufer, H. (1993). Negative effects of traditional middle schools on students' motivation. *The Elementary School Journal*, 93(5), 553-573.
- Finn, J.D., Pannozzo, G. M., & Achilles, C. M. (2003). The "why's" of class size: Student behavior in small classes. *Review of Educational Research*, 73(3), 321-368.
- Finn, J.D., Pannozzo, G. M., & Achilles, C. M. (2004). Classroom organization and student behavior in kindergarten. *The Journal of Educational Research*, 98(2), 79-92.
- Finn, J. D., & Voelkl, K.E. (1993). School characteristics related to student engagement. *Journal of Negro Education*, 62(3), 249-268.
- Filippatou, D., & Kaldi, S. (2010). The effectiveness of project-based learning on pupils with learning difficulties regarding academic performance, group work and motivation. *International Journal of Special Education*, 25(1), 17-26.
- Furlong, M. J., Whipple, A. D., St. Jean, G., Simental, J., Soliz, A., & Punthuna, S. (2003). Multiple contexts of school engagement: moving toward a unifying framework for educational research and practice. *The California School Psychologist*, 8, 99-113.
- Gruman, D. H., Harachi, T. W., Abbott, R. D., Catalano, R. F., & Fleming, C. B. (2008). Longitudinal effects of student mobility on three dimensions of elementary school engagement. *Child Development*, 79(6), 1833-1852.
- Guardino, C. A., & Fullerton, E. (2010). Changing behaviors by changing the classroom environment. *Teaching Exceptional Children*, 42(6), 8-13.
- Harte, H. (2010). The project approach: A strategy for inclusive classrooms. *Young Exceptional Children*, 13(3), 15-27.
- Hughes, J.N., Wei, W., & West, S.G. (2011). Teacher performance goal practices and elementary school students' behavioral engagement: a developmental perspective. *Journal of School Psychology*, 49, 1-23. doi: 10.1016/j.jsp.2010.09.003
- Jennings, G. (2003). An exploration of meaningful participation and caring relationships as contexts for school engagement. *The California School Psychologist*, 8, 43-52.
- Jimerson, S.R., Campos, & E., Greif, J. L. (2003). Toward an understanding of definitions and measures of school engagement and related terms. *The California School Psychologist*, 8, 7-27.
- Kelly, S. (2008). What types of students' effort are rewarded with high marks?. *Sociology of Education*, 81, 32-52.
- Landau, B. M. (2004). *The art of classroom management: building equitable learning communities*. (2nd ed.). Columbus, OH: Pearson Prentice Hall.
- Marks, H. M. (2000). Student engagement in instructional Activity: Patterns in the

- Elementary, Middle, and High school years. *American Educational Research Journal*, 37(1), 153-184.
- Munns, G., & Woodward, H. (2006). Student engagement and student self-assessment: the REALframework. *Assessment in Education: Principles, Policy & Practice*, 13(2), 193-213. doi:10.1080/09695940669
- O'Farrell, S. L., & Morrison, G. M. (2003). A factor analysis exploring school bonding and related constructs among upper elementary students. *The California School Psychologist*, 8, 53-72.
- Perdue, N.H., Manzeske, D.P., & Estell, D.B. (2009). Early predictors of school engagement: exploring the role of peer relationships. *Psychology in the Schools*, 46(10), 1084-1097. doi: 10.1002/pits.2044
- Reschly, A. L., Huebner, E. S., Appleton, J. J., & Antaramian, S. (2008). Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and with learning. *Psychology in the Schools*, 45(5), 419-431. doi:10.1002/pits.20306
- Smalls, C. (2010). Effects of mothers' racial socialization and relationship quality on African American youth's school engagement: A profile approach. *Cultural Diversity and Ethnic Minority Psychology*, 16(4), 476-484. doi: 10.1037/a0020653
- Van Deur, Penny. (2008). Assessing the effect of explicit teaching on high reasoning primary students' knowledge of self-directing learning. *Gifted and Talented International*, 23(1), 141-152,

Reconstructionist Multicultural Art Education

This paper conducted a meta-analysis of peer-reviewed, empirical research regarding the possibilities and limitations for education in multicultural visual arts to affect social reconstruction. The research studies mainly included participants from public schools ranging in age from 9 years through adulthood. The participants also varied in race, ethnicity, and socio-economic backgrounds. The studies originated from the U.S., Portugal, and Israel. Predominant themes of empowering oppressed communities and students labeled at risk became evident in approaching social reconstruction through art education. Developing intercultural and pluralistic attitudes in students as well as understanding different cultural perspectives concerning the value of art and arts participation were also central goals in the research. In addition, conflicts in value between some reconstructionist-minded teachers and the widespread economic growth orientation of society, administrators, and students served to inhibit art education for the purpose of social change. Due to the scarcity of research pertaining to art education for social reconstruction, these studies only offered some general patterns and relationships that can guide art instruction in K-12 public schools. The findings did suggest that many current public school policies and practices regarding funding, support, and partnerships in the arts must be reconsidered and that the definition of artists, art forms, and aesthetic standards need to be broadened and reconceptualized to effectively implement reconstructionist multicultural art education.

During this tumultuous time in the United States there is growing disparity between the rich and the poor, escalating hostility amid different groups in an increasingly diverse nation, and grossly disproportionate investments for military expeditions in contrast to funding towards public welfare. Schools have been targeted as the source for blame as well as sites to remedy social ailments. Educational reform as a panacea for the nation's problems has been practiced since the founding of the common school (Spring, 2008). Yet, education has failed to remedy systemic causes of social inequity. Students of color, those from poor/working class backgrounds, and other marginalized groups continue to fair least well in school performance and on standardized tests (Au, 2009; Nieto, 2004; Spring, 2008). As a tool for social

efficiency, these tests are used to separate students along a spectrum in which those who under-perform are less likely to realize social and economic success (Au, 2009; Finn, 2009).

Education in the arts has not been exempt from reproducing the achievement gap along racial, economic, and gender lines (Keiper, Sandene, Persky, Kuang, & National Assessment of Educational Progress, 2009). If closing these achievement gaps and eliminating educational and social inequities are desirable goals of the arts, it is in the interest of the teachers and schools to re-evaluate current art policies and practices to meet the diverse needs of students.

Greene (1995) as well as Nussbaum (2010) advocated an arts education that will nurture the human development of students

and exercise the imagination to cultivate empathy towards others rather than one that will exclusively prepare them as human resources for the workplace. This objective has a potential to transform students as well as society in ways that are unique to art education so that all students can experience equity and success throughout their education and lives. The question that this literature review seeks to answer is: How can art education for social transformation be implemented to support all students in U.S. schools to become empowered and active agents of positive social change?

When I was a teacher intern, the results of written assessments of visual arts concepts and terminology yielded divisions in outcomes that mimicked the national achievement gap. Upon further investigation, I found that the disposition survey that I conducted revealed that many students recognized the importance of art education mostly as preparation for work in art fields. However, only 2 of the 32 students indicated that they were interested in art related careers. With this perception, meeting state art standards and training for careers were not relevant enough for these students to learn about the arts. The purposes for art education needed to be broadened and made relevant to these students to increase their access to learning artistic techniques, concepts, and processes that can serve to transform their lives and support them in becoming agents of change in the world.

Eisner (2002) explained that “[t]he arts liberate us from the literal; they enable us to step into the shoes of others and to experience vicariously what we have not experienced directly” (p. 10). The imagination offers new possibilities and alternate ways knowing and being in the world that transcends reality, creating openings for change (Greene, 1995; Nussbaum, 2010; Zinn, 2003). Currently,

multicultural education serves as a plausible framework in the arts to reduce academic disparities, connect art to the lives of students, and to bring about social change.

Several issues in regards to reconstructionist visual arts education must be scrutinized to effectively produce the intended positive results. Multicultural education and reconstructionist art education are both deeply political and can incite opposition from teachers, administrators, and policy makers who guard a perceived neutrality of education (Desai, & Chalmers, 2007). Delacruz (1995) addressed a number of misconceptions about the aims and methods of multicultural art education that can result in misguided practice that operate to further stereotypes and the “[erosion of] the role and value of art education” (p. 60).

Other matters would help to inform and further contextualize this study. However, given the resource constraints, the scope is limited to a brief description of the history of art education and multicultural education as they converge in reconstructionist art education. The selection of research represents a sample of extant studies not meant to be a comprehensive analysis. The objectives of this paper are to describe patterns and relationships in research characteristics, to make recommendations to policies and practices, and to suggest future research avenues.

An explanation terminology is necessary to support the clarity of this paper. The terms “the arts” and “arts education” refer to the visual arts. Additionally, the term “multicultural” encompasses race, gender, class, and other distinct groups. Because there are varying understandings and uses of multicultural education and of social reconstruction, reconstructionist multicultural art education is defined as the critical examination of social, political, and economic hierarchies by disenfranchised as

well as dominant groups in creating less social and economic stratification (Stuhr, 1993) through the arts. Finally, description of the following participants as “marginalized” and “at risk” will be modeled after Bamford’s (2006) definition:

[A]ny children or young people for whom the established or regular patterns or offerings of formal education may be irrelevant, inappropriate and/or insignificant. Marginalized or ‘at risk’ children may feel unimportant, excluded and/or peripheral to education. (p. 22)

Literature Review

This literature analysis derived from texts and databases available through The Evergreen State College library. Sources used to establish content and direction included books on the history of education, educational research, and theoretical literature in the arts and literature on multicultural education. The studies were drawn from EBSCOhost, ERIC, and JSTOR databases. Articles were limited to peer-reviewed journals. Initial key words that guided the inquiry were “art education,” “visual arts,” “multicultural education,” and “social justice.”

The meta-analysis of these sources begins with a discussion of the various schools of thought in art education. Then a description of multicultural education and its confluence with the reconstructionist paradigm of art education is given. Presented after this overview are research studies involving the effects of art-based education and community partnerships on self-concept and self-efficacy variables for marginalized students. The studies that ensue address arts-based education in promoting democratic intercultural attitudes. Afterwards, research concerning African American youths and the development of

their artistic identities and how that might affect their learning and participation in the arts will be addressed. The final studies pertain to teachers’ perceptions of art education for social-reconstruction. In conclusion, the trends found in these studies are evaluated as a whole to identify implications for teaching and learning in reconstructionist multicultural art education and offer avenues for further research.

Paradigms in Art Education

Principles for teaching and learning in the arts around the world have been guided by cultural, economic, historic, and socio-political milieu (Bamford, 2006; Desai, & Chalmers, 2007; Efland, 1990). As these aspects change in communities, so does the purpose, quality, and value of art education. Within the last century, the prevailing paradigms in art education, as identified by Efland (1990), were visible in the expressivist, scientific rationalist, and reconstructionist movements. The *expressivist* school of thought promotes child art and individualism. It espouses few restrictions in the production of art and freedom of expression. *Scientific rationalism* is a conservative approach that emphasizes accountability and establishing art as a structured discipline. The *reconstructionist* school of thought is founded on the principle that the arts can affect social transformation.

The debate between scientific rationalism and expressionism has dominated the discourse in modern art education (Efland, 1990). However, increasing attention to growing diversity in schools and persistent academic and social inequities has reinvigorated the reconstructionist art movements in the schools particularly through a multicultural framework (Adejumo, 2002; Chalmers, 1992; Lippard, 1990).

The Reconstructionist Movement and Multicultural Framework

Reconstructionist ideology emerged after the feminist and Civil Rights movements during the latter half of the 20th century. Mounting discontent from inequitable treatment of marginalized groups in America led to the birth of multicultural education and the adoption of its tenets in reconstructionist art. Multicultural art education sought to diversify curriculum through the representation of multiple cultures for the promotion of educational equity and cultural pride for the reformation of school and society (Adejumo, 2002).

Multicultural art education as modeled after Banks' (2004) five dimensions of multicultural education consists of content integration, knowledge construction, equity pedagogy, prejudice reduction, and empowering school culture and social structure (Chalmers, 1992, p. 16). However, its application in schools mainly focuses on the first few approaches in generating cultural pride and intercultural harmony (Adejumo, 2002; Chalmers, 1992). These are assimilationist positions that do not fully accomplish the social transformation objectives of the highest level of multicultural education nor a reconstructionist approach. How, then, can art education for social transformation be implemented to support all students in U.S. public schools to become empowered and active agents of positive social change? The following discussion looks at the effects of art education and community partnerships on transforming the self-concept and self-efficacy variables for students labeled at risk.

Empowering Students at Risk

Catterall and Peppler (2007) used a mixed method approach in their research consisting of comparison group analysis, data collected from structured observations,

and pre- and post- treatment surveys to inform their research on the effects of high quality visual arts education (HQVAE) on the worldviews of students. There were 103, 3rd grade, art program participants and an additional 76 non-art program participants. Students involved in the Inner City Arts (ICA) in Los Angeles were 99% Latino. Those at the Center of Contemporary Arts (COCA) in St. Louis were all African American. Students in the experimental groups were provided with HQVAE that offered rich interdisciplinary development of artistic techniques and processes using community building instructional strategies for 20 weeks in ICA and 30 in COCA.

A 7-item survey, using a 4-point Likert scale to measure levels of agreement or disagreement was read to all participants by trained assistants. Pre- and post-test scaled responses were first compared within treatment and control groups to assess any significant gains defined as $p < .05$. Chi-square comparisons of these results were used to establish whether the proportion of treatment group gainers were higher than those in the control group. Of the 7 items that were surveyed, results from the motivation statements regarding self-efficacy showed that over 50% of art students made significant gains compared to about 33% of students in the comparison group. The proportion of treatment group gainers was significantly higher than the control group on this item. Similar results were found in the area of originality under creativity. 55% of art students made significant gains on this item while 33% made gains in the comparison group. Catterall and Peppler emphasized that the originality questions were not specific to the art program and referred to the general capacity to generate novel ideas and solutions to problems. They saw this as a self-efficacious characteristic that enabled

children to be confident in conceiving new pathways when confronted with obstacles (Catterall, & Peppler, 2007, p. 559).

Observation rubrics were created to guide observer ratings for the purpose of complementing survey findings. Noteworthy observations of improved focus, attention, and engagement were of art students during the ICA and COCA programs. Students participating in the programs also became more attentive in their general education classrooms when compared to non-participating peers. Previously disengaged, unsuccessful, and ostracized students experienced success in the art programs and became more engaged and were treated more inclusively by their general education classroom teachers and peers. Using these observations to support the survey data, researchers concluded that HQVAE contributed to the students' sense of self-efficacy. Their exposure to HQVAE gave them more opportunities to feel more confident with their skills that led to a greater sense of agency which researchers deemed important for underprivileged children.

The results of this research offered important insights into the possibility for HQVAE to promote the development of positive worldviews through developing a greater sense of self-efficacy and agency in all students especially those at risk. However, HQVAE was described as a combination of art education and social learning instructional components. Catterall and Peppler's ascription of gains in self-efficacy and originality of participants to exposure to HQVAE as a whole did not clearly distinguish the benefits of reconstructionist art instruction from those of community-building instructional strategies. In addition, the researchers recognized that "[n]ot all arts programs [were] as well positioned or as well endowed as ICA and COCA" (p. 546).

These factors must be taken into account when considering implications for public school art classes that might be poorly funded and supported and do not use social learning instructional strategies.

Wallace-DiGarbo and Hill's (2006) and Gasman and Anderson-Thompkins (2003) reports were based in constructivist and transformative paradigms in their case studies that used participatory, observational research and action research respectively. Each study investigated the impact of community-based art programs on the development of self-efficacy and resiliency in small samples of students of color considered at risk. The children worked in groups with local artists to learn a variety of art media in creating various products. They were taught to show respect for each other, instructors, the classroom, and the materials. Exposure to a diversity of artwork and new ideas were common in both studies. Wallace-DiGarbo and Hill mentioned the use of cultural masks and mandalas. At the end of each program, the participants' artworks were exhibited and recognized publicly to friends, families, and the community.

The art program in Wallace-DiGarbo and Hill's study took place over the duration of 6 weeks with 10, 1-hour sessions. Several collaborative art activities helped students to build art as well as life skills. A mural depicting multicultural images representing themes of pride, friendship, freedom, and power developed as the culminating project.

A pre-test of students was conducted over a 4-day period using the self-reported, 225-item Adolescent Self-Assessment Profile (ASAP) reporting data on risk factors with substance abuse. Internal reliability information on the ASAP subscales that were used in the data analysis were as follows .86 for family adjustment, .88 for psychological adjustment, .79 for peer

influence, .74 for school adjustment, .92 for deviancy, and .83 for attitude. A post-test Outcome Inventory (OI) was used towards the end of the project and 6 months later that retested for changes in risk factors.

The analysis of baseline data revealed lower than hypothesized levels of risk for most participants leaving little room for improvement. There were no statistically significant changes found in any outcome variables. However, comparison of survey data over the 3 periods indicated students' psychological adjustments and attitudes were towards positive change in the directions of improved functioning and adjustment. For individual cases, the greatest improvements were seen in students who were found to be the most at-risk. Importantly, these improvements lasted 6 months after the program had ended.

Qualitative summary of observations noted that students developed trust for the artists acting as program facilitators. The participants also engaged in teamwork that required sharing responsibilities and collaboration. At the programs conclusion a reception was given in which community members demonstrated respect for the students and their work. Overall, the researchers concluded that even short-term art intervention can have sustained impact on the attitudes and psychological adjustments of students labeled at risk.

Gasman and Anderson-Thompkins' (2003) research posited that community-based art programs have intrinsic value in fostering resiliency in youth through education in the arts (p. 431). Their study involved an after school community art program entitled Artists in the Making (AIM) that enrolled students attending public schools in San Antonio, Texas receiving Title I funding. 40 Participants created artwork, interrogated multiple definitions of beauty, engaged in artistic risk taking in developing "multiple ways of

seeing the world" (p. 446), and eventually selected pieces to display and sell at a museum exhibition.

The researchers used 10 open-ended questions pertaining to interests, participation, relationships, and self-perceptions in relation to the AIM program, school, and home as well as drug temptations and future aspirations. The participants' experiences were gathered from interviews in which they self-described "life histories" (p. 433) over 6 sessions, twice per session, over the course of 2 years. A summary of interview notes in which participant reactions and comments as well as researchers' initial thoughts on developing themes were recorded immediately after each session. Participatory observational data of students in the art classroom and their interview comments, use of language, pauses, and body language were also documented, evaluated, and coded for analysis.

Gasman and Anderson-Thompkins' summary of the interviews showed themes of improvement in self-perceptions, anger management, and capacities to separate from challenging situations. The researchers did not directly correlate participation in the AIM program to the outcomes of these children nor did they claim that it was the singular cause for improvement. However, they did acknowledge that the children themselves drew connections with their involvement in the program to the changes in their attitudes, self-perceptions, and self-esteem. Gasman and Anderson-Thompkins interpreted this as a development of protective factors occurring during the program that helped participants to become resilient in the face of adversity.

This study provided important longitudinal data concerning the genesis of positive risk taking and concepts of self and self-efficacy in students from developing awareness of numerous aesthetic standards

and a variety of routes to success indicative of multicultural art education (Delacruz, 1995, p. 58). This could also be said of Wallace-DiGarbo and Hill's work. However, there were shortcomings from both Wallace Di Garbo and Hill and Gasman and Anderson-Thompkins' research designs. The lack of a control group, pre- and post-tests, randomization of participants, and very small sample sizes decreased the validity and likelihood for generalizability for both studies. Wallace-DiGarbo and Hill also acknowledged the brevity of their study and the fact that other interventions at the youth center were being conducted at the same time as the study and that the measured improvements in these students may not have resulted exclusively from the art-intervention program.

Hutzel's (2007) research was comparable to the previous 2 studies in that community-based art research was employed in a short time span (9 weeks) and public recognition of participant work marked the end of the project. However, her transformative case study design of participatory action research positioned her as both researcher and equal participant with individuals in her own community. Hutzel applied case study, ethnographic, and phenomenological methodologies in her examination of data collected from participants' reflections and drawings, her observations, and personal interviews. She then generated critical interpretations of the effects of an asset-based community art project on the development of participants' perception of community and their ability to affect social change.

Ten to twenty-five youths collaborated in the selection of places within the neighborhood and themes for 2 murals. In initial interviews and early drawings depicting community, the participants revealed idealized visions paired with fears and problems that they experienced in their

real living conditions. By focusing on resources and positive social networks, participants were able to develop an "asset-based mindset" of themselves and their community (Hutzel, 2007, p. 309).

The youths expressed pride in their accomplishments in the planning and painting process. It was perceived that the amount of criminal presence at the playground diminished and children and families came more frequently. Hutzel (2007) concluded that art education may seem trivial in schools of oppressed communities, but by incorporating the lived experiences of these students into the art curriculum, art education that acts "toward change can incite active engagement in art and community development" (p. 313).

Hutzel's (2007) research focused on transforming not only the perceptions of community and self-concepts of children, but empowered them to directly improve their own living conditions. Her involvement as researcher and participant gave unique insights into the possible benefits of teachers who invest in understanding and learning from students in undertaking socially transformative endeavors through the arts. However, her personal investment in this research produced results that were particular to her situation and may not be applicable in public school settings in which art instructors do not reside in the same community as their students. The fluctuating involvement by participants also limited the validity of her claims

Design weaknesses in the 4 studies above ranged from brevity of the research to lack of control groups. Their focus was narrowed to programs that were supplemental to public school offerings and the empowerment of students of color, those labeled at risk and living in oppressed communities. These limitations minimized the generalizability of the research findings

to public schools that have conventional art programs and greater socio-economic, cultural, and academic diversity. Even so, meaningful patterns and relationships that contributed to social reconstructionist goals in art education were evident in the uniform employment of community resources and instructional strategies involving social learning, additional public and private funding, collaborative involvement of practicing artists and other professionals. However, more studies need to be conducted that make clear the distinct benefits of multicultural art education in the development of self-efficacy in students.

The next studies expand from self-empowerment themes of “victimized minorities” (Delacruz, 1995) to changing the concepts of diversity and others in all students to promote intercultural harmony in school settings. They examine the effects of arts-based education on the cultural perspectives of all students including those belonging to dominant groups.

Transforming Concepts of Diversity

In this quasi-experimental study conducted in Portugal, Lopes da Silva and Villas-Boas (2006) explored how arts-based education can serve as a tool to increase the intercultural attitudes of students. The researchers’ defined the goals of art education to be for the “global development of a person and not the education of future artists” (Lopes da Silva, & Villas-Boas, 2006, p. 95). The experimental as well as control groups were asked to complete a pre- and post-test using a “Draw-Two-People-Test” (DTPT) in which researchers measured the distance around and between each drawn person, analyzed the position of each figure, and examined ethnic facial and garment features that were captured to conduct cross-cultural comparisons. Participants also completed an anonymous, open-ended questionnaire at the conclusion

of the experiment that investigated the extent to which students from the minority culture had integrated into the majority. Analysis of the answers to the open questions and differences between the pre- and post-drawings were used to measure the amount of attitudinal changes towards diversity that the students showed after 10 weeks.

Within that time, researchers exposed the experimental group to various slides, videos, original artifacts, and music from different regions of the world. The art and culture of world regions that were the “most important” were given to students for analysis (Lopes da Silva & Villas-Boas, 2006, p. 98). Families of students were also asked to participate. Some came in wearing traditional clothing from their ethnic backgrounds.

Comparison of the pre- and post-test DTPT results showed that the experimental group drawings did not show any differences between the area used to draw persons in the pre- and post-test measurements, which were interpreted by researchers to show people of equal importance. Unlike the control group whose drawings of non-Europeans had indistinct and fewer ethnic characteristics, this group highlighted ethnic features throughout their post-test drawings of non-Europeans. The researchers accounted for these changes as products of the artistic process that led to respect and understanding of cultural diversity. The questionnaire was analyzed and organized by themes in which data was gathered in a frequency and crossed mode. The results revealed that 90% of all participants valued the arts-based program, 60% had prior misconceptions of different cultures that were changed after the program, and 65% perceived improvements in classroom interactions. An evaluation of combined results led researchers to conclude that the experimental group increased

intercultural attitudes. No discriminatory attitudes and openness to diversity were observed. However, there were unexplained negative impacts on students from non-Portuguese heritage regarding lowered self-esteem and increased perception of ethnic differences.

The design and methods of the experiment in this respect were not highly detailed. The procedures seemed to only address one dimension of multicultural education – content integration (Banks, 2004). Reasons for these results may have been due to misdirected instruction explained by Delacruz (1995) as “culture-hopping” and “the exclusion of problematic subject matter” (p. 60). Also, Lopes da Silva and Villas-Boas’ sample group was derived from two 5th grade classes from a city in Portugal. Due to the small sample size and the foreign location, the results of may only be minimally applicable to art education in the U.S.

In response to increasing diversity within the student body, Seltzer-Kelly, Westwood, and Pena-Guzman’s (2010) conducted a qualitative, mixed-method study in an art appreciation course at the University of Nevada that focused on generating cross-cultural awareness and solidarity among students. Of the 81 students that were included, over 30% identified themselves as belonging to groups of color. Researchers used a time series design of 5 surveys given throughout the study consisting of scaled as well as open-ended responses. The data was compared and analyzed to make connections in attitudinal changes about diversity in participants. Autoethnographic observations of student discussions, exams, and understandings also contributed to the findings.

Students were expected to use artistic terminology and concepts to analyze, discuss, write about, and imagine

themselves as creators or consumers of a variety of art examples from popular and non-traditional artworks (e.g., tattoos, graffiti, krumping/street dancing). They then transferred their analytical skills to evaluate more traditional canonic works. Students also engaged in artistic acts on a personal level, i.e., imagining themselves as users of artifacts from various cultures. This pattern of aesthetic study was repeated throughout the course.

The pre-course survey exposed racially divided attitudes between participants of color and those from the majority group. Participants of color made statements expressing that their experiences were more trying than those from the majority group. Responses from majority group participants were inclined to suggest that there was equality of opportunity for all in America. In a subsequent survey after viewing popular films on cultural stereotypes, students’ showed gains in their acquisition of artistic vocabulary and aesthetic capacity. However, their views on diversity showed little change. Instead, they adopted “color-blind” and post-racial sentiments making statements in praise of America’s progress and the equal treatment of everyone regardless of race (Seltzer-Kelly et al, 2010, p. 447).

At the end of the course when contemporary popular urban music and krumping were critically examined, students showed movement towards re-examination of their ability to relate to diversity and pluralism. Students were able to critically analyze the stereotypical portrayal of women and people of color in the media and understand the negative effects that these limited depictions had on perspectives concerning diversity. Nevertheless, many comments made by the students throughout the course did not exhibit a growth towards solidarity unifying the us/them dichotomy as researchers had expected. Researchers did

return to theories that reconceptualized pluralist education. In doing so, they abandoned the concept of harmony and adopted goals for heightening awareness of differences, conflict management, and violence prevention (Weinstein as cited in Seltzer-Kelley et al, 2010, p. 453). Through this framework, researchers re-evaluated the data and believed that the comments and dispositions of the participants were promising in developing a different understanding of pluralism that will “embrace the uncertainty of the Other and the Other’s worldview” (p. 454) and prompt democratic negotiation of relationships.

Despite the powerful amendments to the research, there were limitations that made this study less generalizable in public school art classrooms. The sample size was small and particular to post-secondary students at one university. Participation was conducted anonymously and on a voluntary basis. Due to absences and irregularity in contribution of responses to open-ended questions, it was not possible to track individual student results over the duration of the course.

Nonetheless, the reconceptualizing of pluralist education is reminiscent of Bank’s (2004) prejudice reduction dimension of multicultural education. In light of growing diversity throughout the nation, students may benefit more from this latter notion of pluralism in art education. This approach to managing diversity is not aimed towards assimilation. Instead, the cultivation of more democratic attitudes towards diversity is supported through using the arts as a tool for acknowledging differences, addressing conflict, and averting violence between all cultural groups. The following studies delve into the relationships between ethnic identity and learning in the arts for African Americans.

African American Identity and Artistic Identity

Salient aspect of identity formation particular to African American youths and how these influence their participation in the visual arts as an area of study and their pursuits of it as potential career goals were central to Charland’s (2010) research. 58 students from four urban Midwestern high schools were interviewed. They engaged in small group discussions conducted by an African American female with a background in art, education, and youth culture. Responses were recorded, transcribed, analyzed, and coded for categorical patterns.

The findings revealed that most informants recalled having participated in art production as children but that this quickly diminished with entry into late elementary and secondary school. For those who did continue with art production, many recalled that they were acknowledged for following directions more than their ability to be creative and expressive. Art creation became a private activity. The participants were indifferent about studying art in college and pursuing art as a career. Most participants feared disapproval from their families and communities who considered the art field to be financially fruitless.

The discussions showed that no participant knew of any African American artist and that none had relatives who made art. However, upon further prompting, 90% of students referenced family members partaking in various art activities such as quilting, cartooning, and landscaping. They also revealed that most African American students held stereotypical concepts of artists as White males. None described artists as women. Artists were also characterized as moody, unkempt, poor, not smart, worthless, drug users, weird, and lonely. These latter attributes paralleled negative personality and behavioral stereotypes held of African Americans.

Charland (2010) noted the ramification of added social stigma acting as a deterrent in art participation for African American students who held these conventional concepts of artists. Charland also discussed the foreclosure of art aspirations as a strategy to adapt to the dominant cultural model of art was presented as a means for these students to indulge in creative visual expression while denying participation (p. 128). These findings underscored the need to introduce artists of color into the arts classroom to challenge the Western canon as a means for these students to move their understanding of art and artists beyond stereotypes and to broaden their career and life opportunities. Charland also suggests that reducing the conflict between ethnic identity and artist identity by changing culturally embedded concepts of visual art can encourage artistic African American youth in developing an artistic identity. This could serve to increase African American representation in the arts. Although Charland's deductions are important to consider in implementing multicultural art education, a study that actually tests these theories would help to fortify them.

DiMaggio and Ostrower (1990) used a multivariate analysis of survey data from 17,254 African American and non-Hispanic, White participants 18 years of age or older concerning differences with participation in, creation of, and consumption habits of the arts in their research. Several independent variables were considered in the study: race, gender, income, age, and educational attainment. The researchers also weighed the influence of historic racial exclusion of African Americans from traditional Eurocentric art forms and the cost or benefit of their investment in cultural capital. Sociodemographic data from all participants was collected from the survey that was given in all 12 months of 1982.

The research findings were viewed through two theoretical frameworks. Under the convergence theory, intergroup contact and decline in some social barriers contributed to acculturation and assimilation in which African Americans abandon traditional African American art forms for Euro-American forms. Conversely, the resistance theory postulates intergroup competition with an increase in upwardly mobile groups of color in which black Americans exhibit more favor towards traditional African-American art forms.

The results of the research revealed little support for either theories but showed patterns for African Americans that resulted in a theory of dual engagement in which there is participation within both cultures. The insight into possible reasons for what might be viewed as lack of interest and participation in some groups of color, especially within the growing diversity in U.S. schools, can help art teachers motivate and engage students in the creation, production, and consumption of art in ways that acknowledge their cultural heritage and support their artistic development towards a more inclusive disposition. DiMaggio and Ostrower suggest that in addition to supporting the multicultural interests of students, fostering an appreciation and participation in the arts would also serve to meet reconstructionist goals.

Teachers' Perception of Art for Social Reconstruction

In Cohen-Evron (2002) and Spohn's (2008) longitudinal case study research of art teachers, a theme of conflict emerged between the values of art teachers and those of the educational system. Cohen-Evron's gathered data from 7 art educators in their development of teacher identities in Israel for 3 to 6 years. The data was constructed from the teachers' tales, which were translated by the researchers from formal

and informal interviews, letters, personal communication, and information taken from school visits and classroom observations.

Spohn gathered data from the district's art education budget; reported time spent in math, science, and reading; and interviews and surveys of 6 educators from elementary through high school in various arts and non-arts fields in Ohio. Interviews were analyzed in multiple readings, identified for themes, and coded. Spohn triangulated of data and shared findings with participants as a measure to ensure validity.

Neither Cohen-Evron nor Spohn's study stated funding or program reductions as a consequence of institutional pressures and expectations. However, both noted a de-emphasis in the arts as a result of mandated testing and problems in art education relating to low-status and discord between institutional expectations and teachers' beliefs. Each also referred to time constraints in school schedules that reduced access to and instruction in the arts and minimal art provisions to effectively teach and carry out projects that perpetuated the devaluation of art education in the minds of students and their caregivers.

One high school art history teacher in Cohen-Evron's study valued reconstructionist pedagogy but felt unable to adequately teach her students to become "critical viewers of their own society" (p. 89). The school expectations of her were to teach Western art history content for her students to pass matriculation exams. This took precedence over her broader goals. Conflict with the values of a pragmatic society that undervalued art led some participants to abandon their own beliefs to become "technocratic teachers who survived in the system" (p. 91). Cohen-Evron explained this as the worldviews of these art teachers being in conflict with those of society in general and the educational system.

In response to the low-status of art education and conflicting views of its goals, Cohen-Evron (2002) recommended creating a more integrated curriculum involving collaboration to facilitate movement of the arts discipline from the periphery of education to its core. Spohn (2008) suggested alterations in current testing policies such as freeing local schools and districts to determine the teaching and testing of students. To address the conflict between the pragmatic values of the educational system and the values of art education for the global development of students, both studies recommended the need for space to negotiate instructional content.

Although these research studies derived from a small sample of participants, the detail offered in the evidence gathered through surveys, observations, and teacher interviews served to focus on the particular difficulties that teachers encounter in their attempts to teach art content that is contrary to the schools and to society in general. However, these studies also pointed to the variability in policies and practices of schools towards art education that can vary the teaching conditions that would make multicultural art education a successful endeavor.

Discussion

The studies that were examined in this literature review related to the purposes and principles of multicultural art education and other cultural factors that can influence the application of social reconstructionist art education in public schools. Patterns and relationships were identified that might illuminate future direction for teaching and research in the visual arts that would promote movement towards accomplishing socially transformative goals.

The initial studies that were considered were a representative sample of research

results regarding multicultural art education. They focused on the effects of visual art education on the improvement of self-concept and self-efficacy for students labeled at risk. The perspectives taken by researchers in these studies limited their focus on the empowerment of “victimized minorities” (Delacruz, 1995) living in oppressed communities. These changes were aimed at improving the participants’ attitudes, behaviors, and resiliency in the face of adversity as a means to affect social reconstruction rather than to critically examine the dominant culture. Although they also served to influence others to alter their perceptions of these students, prejudice reduction and changes in school-wide culture and social structure was absent. The aims of these studies promoted assimilation of at risk students into mainstream expectations (Delacruz, 1995).

These programs were also atypical of public school offerings. AIM, ICA, COCA were external organizations that supplemented art education at these schools. They were financed or supported to some degree through partnerships with other public and private organizations. Because funding for the arts is not as robust within public schools and the level of training that teachers have vary, this must be taken into account in considering the outcomes of these studies.

Da Silva and Villas-Boas (2006) and Seltzer-Kelly, Westwood, and Pena-Guzman’s (2010) expand from self-empowerment themes of to changing the concepts of diversity and of others in all students to promote intercultural harmony. They explored the effects of arts-based education on the cultural perspectives of all cultural groups represented in the classroom. Lopes da Silva and Villas-Boas (2006) concluded that their experimental group increased intercultural attitudes showing openness to diversity with no discriminatory

attitudes as a result of introducing various cultural images into the curriculum. However, there were negative impacts on students of non-Portuguese heritage regarding lowered self-esteem and increased perception of ethnic differences that were not accounted for. One explanation might be that the researchers’ procedures seemed to operate on “culture-hopping” and “the exclusion of problematic subject matter” (Delacruz, 1995, p. 60) which neglect the highest dimensions of multicultural art education: prejudice reduction and empowering school culture and social structure.

Similar shortcoming in developing growth towards solidarity and unifying the us/them dichotomy were also noted in Seltzer-Kelly, Westwood, and Pena-Guzman’s (2010) study. Yet, their promotion of intercultural harmony did attend to the transformative dimensions of multicultural art education: prejudice reduction and empowering school culture and social structure. Ultimately, Seltzer-Kelly et al reconceptualized pluralist education and developed a different understanding that embraced heightened awareness of difference and the democratic negotiation of relationships.

Charland’s (2010) study discussed the added stereotype stigma of artist identities to those already associated with African Americans. Discouragement from some parents who considered the art field to be financially fruitless, limited definition of art to Western canonic standards, and a lack of awareness of African American artists also prevented sustained participation for African American students in the discipline.

DiMaggio and Ostrower’s (1990) study considered variables that affected African Americans participation in the arts. Their insights revealed some possible reasons for what might be viewed as lack of interest and participation in some groups of

color such as historic exclusion of African Americans from traditional Western art forms and dual engagement in both African American and White American cultures. These dispositions were seen as possible deterrents or impediments for learning in the arts for this group of students.

In Cohen-Evron (2002) and Spohn's (2008) studies of art teachers, a theme of conflict emerged between the values of art teachers and those of a pragmatic society and educational system. The studies referred to time constraints in school schedules that reduced access to and instruction in the arts and minimal art provisions to effectively teach and carry out projects that perpetuated the devaluation of art education in the minds of students and their caregivers.

Recommendations

Art educators can implement each of Banks' (2004) five dimensions of multicultural education in the discipline to support the empowerment of students from all backgrounds as active agents in affecting positive social change. It is necessary for students from all races, cultures, backgrounds, and experiences to participate in multicultural art education in order to affect transformation in numerous groups in ways that reduce discrimination, social injustice, and educational inequity. Through routine exposure to a diverse array of cultures, ideas, and practices in cultivating heightened awareness of differences, all students can gain understanding, appreciation, and respect for differences in other people as well as notice and value their own distinct qualities.

Moreover, emphasizing the dimensions of empowering school culture and social structure and prejudice reduction can foster democratic attitudes towards diversity. In conjunction with multicultural art education, social learning strategies that

are community based and that promote collaboration and cooperation between students can serve to augment the development of greater self-esteem, self-efficacy, agency, and creativity in students.

Other recommendations are to broaden the definition of art forms and aesthetic standards and to introduce artists of color into the arts classroom to challenge the Western canon and move students' understanding of art and artists beyond stereotypes in order to increase both career and life opportunities. Reducing the conflict between ethnic identity and artist identity by changing culturally embedded concepts of visual art can also encourage artistic youths of color in developing an artistic identity and serve to increase their representation in the arts.

These recommendations can operate more efficiently and effectively with adequate funding and support. Amendments to art education policies and practices should work to ensure ample provisions and sufficient administrative and community support to achieve social reconstructionist goals in multicultural art education. Furthermore, creating more integrated curricula and encouraging interdisciplinary collaboration within schools can shift the arts discipline from the periphery of education to its core. This can serve to make the value of multicultural art education more visible to students, caregivers, and teachers of other subjects. Through proper funding, administrative support, and changes in educational policies and practices, the generation of a school culture and social structure that values the art discipline will facilitate the implementation and effectiveness of multicultural art education.

Further Research

Although examination of the above research studies offered important patterns and relationships concerning multicultural

art education in affecting social reconstruction, there were many aspects of the research findings that would benefit from more studies. Additional inquiry devoted to the impact of multicultural art education on a broader array of disenfranchised students such as sexual minorities and students with special needs at various grade levels in the United States would serve to enrich the understanding of the various needs of diverse students. Additionally, the misconception that multicultural art education being for “victimized minorities” (Delacruz, 1995) was evident in the disproportionate amount of research devoted to empowering marginalized students. Future research needs to focus on the impact of reconstructionist multicultural art education on the outcomes of all students. And finally, the level of value, participation and interest in art and art education was not identical for White Americans and African Americans, which influenced attitudes towards learning in the arts. More research on the perspectives of art and art education in various student groups would be useful for art teachers to differentiate art education in ways that are culturally meaningful and relevant to their students.

References

- Adejumo, C. O. (2002). Considering multicultural art education. *Art Education*, 55(2), 33-39.
- Au, W. (2009). *Unequal by design: High-stakes testing and the standardization of inequality*. New York: Routledge.
- Bamford, A. (2006). *The wow factor: Global research compendium on the impact of the arts in education*. Münster: Waxmann.
- Banks, J. (2004). Multicultural education: Historical development, dimensions, and practice. In J.A Banks & C.A.M. Banks (Eds.), *Handbook of research on multicultural education* (2nd ed.) (pp. 3-29). San Francisco: Jossey-Bass.
- Catterall, J. S., & Peppler, K. A. (2007). Learning in the visual arts and the worldviews of young children. *Cambridge Journal of Education*, 37(4), 543-560.
- Charland, W. (2010). African American youth and the artist’s identity: cultural models and aspirational foreclosure. *Studies in Art Education: A Journal of Issues and Research*, 51(12), 105-133.
- Chalmers, G. F. (1992). D.B.A.E. as multicultural education. *Art Education*, 45(3), 16-24.
- Cohen-Evron, N. (2002). Why do good art teachers find it hard to stay in the public school system? *Studies in Art Education*, 44(1), 79-94.
- Delacruz, E. M. (1995). Multiculturalism and art education: Myths, misconceptions, and misdirections. *Art Education*, 48(3), 57-61.
- Desai, D., & Chalmers, G. F. (2007). Notes for a dialogue on art education. *Art Education*, 60(5), 6-12.
- Dewey, J. (1980). *Art as experience*. New York: Penguin Company. (original work published 1934)
- DiMaggio, P., & Ostrower, F. (1990). Participation in the arts by black and white Americans. *Social Forces*, 68(3), 753-778.
- Efland, A. (1990). *A history of art education*. New York: Teachers College Press.
- Eisner, E. W. (2002). *The arts and the creation of mind*. New Haven: Yale University Press.
- Finn, P. (2009). *Literacy With an Attitude: Educating Working-Class Children in Their Own Self-Interest*. Albany: State University of New York Press.
- Greene, M. (1995). *Releasing the imagination: Essays on education, the*

- arts, and social change*. San Francisco: Jossey-Bass Publishers.
- Hutzel, K. (2007). Reconstructing a community, reclaiming a playground: A participatory action research study. *Studies in Art Education*, 48(3), 299-315.
- Keiper, S., Sandene, B., Persky, H., Kuang, M., & National Assessment of Educational Progress, P. (2009). *The nation's report card: Arts 2008--music & visual arts*. National Assessment of Educational Progress at Grade 8. NCES 2009-488. National Center for Education Statistics, Retrieved from <http://www.eric.ed.gov/PDFS/ED505664.pdf>
- Lippard, L. (2000). *Mixed blessings: New art in a multicultural America*. New York: The New Press.
- Lopes da Silva, J. L., & Villas-Boas, M. A. (2006). Research note: Promoting intercultural education through art education. *Intercultural Education*, 17(1), 95-103.
- Nieto, S. (2004). *Affirming diversity: The sociopolitical context of multicultural education* (4. ed.). Boston: Pearson.
- Nussbaum, M. C. (2010). *Not for profit: Why democracy needs the humanities*. Princeton, N.J.: Princeton University Press.
- Seltzer-Kelly, D., Westwood, S. J., & Pena-Guzman, D. M. (2010). Deweyan multicultural democracy, Rortian solidarity, and the popular arts: Krumping into presence. *Studies in Philosophy and Education*, 29(5), 441-457.
- Spohn, C. (2008). Teacher perspectives on No Child Left Behind and arts education: A case study. *Arts Education Policy Review*, 109(4), 3-11.
- Spring, J. H. (2008). *The American school: From the Puritans to no child left behind* (7th ed.). Boston : McGraw-Hill.
- Stuhr, P. (1994). Multicultural art education and social reconstruction. *Studies in Art Education*, 35(3), 171-178.
- Wallace-DiGarbo, A., & Hill, D. C. (2006). Art as agency: Exploring empowerment of at-risk youth. *Journal of the American Art Therapy Association*, 23(3), 119-125.
- Zinn, H. (2003). *Artists in times of war*. New York: Seven Stories Press.

Strategies to Encourage Student Agency Through Addressing Intelligence Beliefs, Metacognition, and Autonomy Support

Participation, engagement, and agency are all factors that contribute to deep learning in students. Yet students are increasingly disengaged from their education and have lower motivation to participate in or take charge of learning opportunities. This literature review of empirical studies addresses the question: what are effective strategies to encourage students to be active agents in their own education? The three perspectives examined in the studies are intelligence beliefs, metacognition, and autonomy. The studies were based in a range of communities, used participants from elementary school through university, and one approached the question through the perspective of teachers. The results of the studies suggested that there were four strategies that contributed to creating a mastery climate in the classroom, showed positive effects on academic achievement, and were positively related to student engagement and intrinsic motivation: (i) helping students understand and endorse the incremental theory of intelligence; (ii) using evaluative methods that showed progress over time; (iii) teaching metacognitive skills; and (iv) using approach-oriented implementation plans

Teachers often encounter the challenge of trying to work with students who are not engaged, don't participate, or who take a passive role in their education. In my experience working in a high school social studies classroom, I had many students who exhibited these traits. For some students a lack of engagement meant they would not do the work, either in class or as homework. Other students wouldn't participate in class activities or discussions, especially when it required collaboration with peers. Even many of the students who did participate or did some of the work did so passively, putting a minimal amount of effort and attention into the task without taking the steps needed to internalize the lesson. In talking with a number of these students I found that they held the perspective that school is something being done to them, rather than an opportunity they can actively take part in for their own benefit. Research has also corroborated this decline in student engagement, showing decreased levels of

“intrinsic motivation and personal valuation of academic activities” (Lepper & Henderlong, 2003, p. 1698). Students are not finding education to be a useful endeavor, and therefore do not take an active role in their education. If students don't utilize agency in their education, they will miss out on the key factors that empower people to succeed in our society, and they will not have access to the tools and opportunities to set their own course and decide what they would like to do with their lives (Finn, 2009, p. 197).

Education has to be more than a teacher handing down information because learning doesn't happen without effort on the part of the student (Sungur, 2007, pp. 127-128). Deep learning requires active student engagement (Zull, 2002, pp.33-34). Consuming information is only one aspect of the learning process, where testing and retesting are also critical to forming students' understanding of a subject (Zull, 2002, pp. 39-40). Through prolonged

engagement and exploration in learning opportunities students will develop the understanding necessary to gain proficiency as learners and can move from being novices to expressing higher levels of mastery and expertise (Bransford, 2000, p. 31). At this level, students are able to “move from passive to active and become creators of knowledge” (Zull, 2002, p. 33). This requires students to be more than passive participants -or active resisters- in their education, but rather to take control and exert agency in their learning.

There are various explanations why students resist being engaged in their schooling. Finn (2009) explains that students are not able to engage if they do not see any relevance or connection between what they see in school and what they experience in their lives outside of school (p. 118). Others contend that students are disengaged or passive because they don't understand the benefits that an education can provide, often because the type of schooling they're exposed to does not grant the same level of opportunity for student engagement as other schools (Assor, Kaplan, & Roth, 2002, p. 261; Finn, 2009, pp. 126-127, 160-161). The Deficit model explains student disengagement as a lack of preparation for the types of thinking and activities required in school on behalf of the student's family and culture (Finn, 2009, p. 164, 259; Rogoff, 2003, pp. 16-17). Another explanation is that students either actively or passively resist being involved in education because they view it as an oppressive force (Au, 2008, pp. 97-99; Finn, 2009, pp. 42-43, 47, 55). If students' involvement in their education is so critical, and yet many students are encountering these reasons not to be involved, then this leads to the question: what are effective strategies for encouraging students to become active agents in their own education?

Prompting students to take an active role in their education is an expansive topic with numerous avenues of approach. It would be impossible to review every strategy connected with this goal, and therefore there are bound to be perspectives and approaches that are not included in this review. I do not subscribe to the Deficit Model as an explanation of why students are disengaged from their education, and therefore will not be exploring the topic from that perspective. Additionally, while an investigation that includes multicultural perspectives would be ideal, the initial studies I reviewed did not address potential cultural differences. This literature review surveys a small sampling of potential strategies aimed at enhancing student agency in education through the lenses of intelligence beliefs, metacognition, and autonomy. The empirical, peer-reviewed studies were gathered in the fall of 2010 using searches through Educational Resources Information Center (ERIC) and PsychInfo. Initial keywords included active participation, agency, motivation, intelligence beliefs, metacognition, autonomy, student ownership, empowerment, and choice.

Literature Review

There are differing ideas on how to achieve active participation and agency in education, and as learning is a complicated process, and students themselves are complicated individuals, this review considers multiple types of strategies. In compiling the research collected for this review, three pathways of access to student agency emerged: theories of intelligence, metacognition, and autonomy. Each of these topics can influence a students' ability to establish and maintain agency in their education.

Intelligence beliefs refer to how people perceive intelligence and its acquisition, and

the beliefs students' hold about intelligence can be predictors of students' perception of school and learning. The entity theorist believes that intelligence is fixed, and that each person has a certain level that they cannot change (Blackwell, Trzesniewski, & Dweck, 2007, p.247). Incremental theorists believe that intelligence can be developed, and that it can be cultivated and expanded through individual effort and practice (Blackwell, et al., 2007, p. 247). Both of these implicit theories affect how students engage in a classroom, and whether their purpose is to learn, described as mastery goals, or to prove their skills, described as performance goals (Butler, 2006, p. 596). Students' perception of the purpose of schooling affects how, and if, they engage in their education. Without the implicit incremental beliefs about learning and intelligence that will support students in becoming active agents in their education, students risk subscribing to a form of education that reflects neither true learning nor empowering competencies (Zull, 2002, p. 234; Finn, 2009, p. 133)

Metacognition refers to what a person knows about their own thinking, their cognitive processes and strategies, and about how they learn (Masui & De Corte, 2005, p. 352). This is an important concept and skill when considering student agency, because the more students understand their own thinking and learning processes, the greater control they can exert over their education. There are three key components to metacognition: first is the knowledge of one's own thinking process, the second component is knowledge of a task, and the third is a person's ability to use this knowledge to regulate their cognitive processes (Thiede, 2003, pp. 1470-1472; Sungur, 2007, p. 129). Some characteristics of metacognition include reflection, orienting to tasks or learning, monitoring cognitive processes, monitoring and

evaluating the use of strategies, and planning based on cognitive knowledge (Masui & De Corte, 2005, p. 353). While many researchers have shown the academic benefits of fostering metacognition in students, there is also debate about whether metacognition alone is beneficial or whether it requires the use of additional learning strategies to achieve academic success (Mok, Fan, & Pang, 2007, p. 83).

Autonomy is defined as when students are able to pursue their "personal goals, values, and interests" (Assor, Kaplan, & Roth, 2002, p. 262). When applied to a more academic context, this means students have some choice over their academic goals and how they go about pursuing them (Stornes, Bru, & Idsoe, 2008, p. 317). Some have interpreted this to mean a decrease of the teacher as an authority or of the teacher's role in a classroom overall, while others believe this means the teacher should not diminish their role but rather shift it to support student generated goals (Assor, et al., 2002, p. 273).

Intelligence Beliefs

The beliefs that students hold about their intelligence and ability to learn have a strong influence on their active participation and agency in their education. Without a feeling of efficacy or self-confidence in their ability to learn, students will be afraid to take educational risks or actively engage with their education (Bruner, 1960, p. 29, 65; Dweck, 2003, p. 1693). Additionally, intelligence beliefs affect whether or not students think they can get anything from school; if they think their intelligence can grow they are more apt to put effort into developing their education to further their personal goals (Butler, 2006, pp. 607, 609-610; Rogoff, 2003, p. 264). Based on this, intelligence beliefs could be an important way to promote active participation and agency in students.

Students' competency beliefs were examined in relation to motivation in a study by Wong, Wiest, & Cusick (2002). They used a sampling of sixth and ninth grade students who completed questionnaires on their perceptions of competence and self-worth. The questionnaires were then compared to students' standardized test scores to look for correlation. The researchers looked for relations between students' perceptions of self-worth and competence, and their academic achievement. The study did not test variables in the controlled environment of an experiment; therefore it only shows relations and does not specifically attribute a cause to increased student competency. Additionally, it should be noted that the researchers used standardized test scores to reflect students' academic achievement, and not everyone in the field of education agrees that these scores accurately portray student learning or academic success (Bigelow, 2009, pp. 57-59; Stoskopf, 2009, p. 50).

Among their findings the researchers noticed that both students' individual feelings of competency, as well as their perception of a classroom environment that supports competency, were related to higher academic achievement. The results suggested that the more competent students felt, or the higher their self-efficacy, the more motivated they were to be engaged in academic learning. And higher levels of engagement and motivation are related to increased academic success. Wong, et al (2002) felt this implied that teachers need to find ways to foster students' sense of self-worth and feelings of competence in class, specifically through how they respond to student performance, by providing optimal challenge, and by supporting students in setting personal goals.

Stornes, Bru, & Idsoe (2008) conducted a study to investigate the relationship between students' perceptions

of three factors in a classroom (teacher involvement, teacher autonomy support, and classroom regulation) and the motivational climate of the class. The motivational climates were a mastery climate, which focuses on learning and students' individual growth, and a performance climate, which focuses on students' demonstrating their skill and knowledge in comparison to their peers. The participants, 1,171 eighth-grade math and Norwegian language students in Norway, were all given a questionnaire that measured their perception of their teacher on the three factors as well as their perception of the motivational climate of the class. The participants were given the questionnaire during a regular class period, and were asked to base their answers on the teacher for that class. The researchers described teacher involvement as being invested in the students' whole well-being, and providing them with both academic and emotional support. Autonomy support was defined as providing students with choice and control in their learning. Regulation in the classroom was measured by whether or not there were clear rules and structure, but did not specify what kind.

With each of the variables, the specific actions and practices of the teacher were not specified. This could affect the generalizability of the study because it doesn't narrow down practices that can be replicated. However, the study is meant to measure students' perception of the three variables, and therefore students' perception of these categories might be more important than which specific practices the teacher uses. Additionally, the study took place in Norway, and the Norwegian school system may promote different values than other educational systems, which means the responses provided by participants may not generalize to students in other countries.

Stornes, et al. (2008) compiled the results from the questionnaires and analyzed

them on an individual and also on a class-wide level to check the validity of individual responses. They found that teacher involvement had the strongest positive correlation to a mastery climate and the strongest negative relation to a performance climate. Autonomy support had similar results but the relations between the factor and the motivational climates were not as strong as teacher involvement. The researchers proposed that the relations might seem weaker than teacher involvement because autonomy support and its relation to motivation is more complicated. They also found that high regulation had a significant relation to a mastery climate, but that it did not have a negative relation with a performance climate. The researchers felt this showed that regulation is needed for either type of motivational climate. Overall, the researchers felt the results indicated that teachers could create a mastery climate in their classroom by fostering empathic involvement with students, providing autonomy support, and by providing clear structure, though they did not define specific practices that would meet these criteria.

A study by Butler (2006) examined how different forms of evaluation anticipated by 7th and 8th grade students could affect their motivation and intelligence beliefs. Students were broken into three groups: (i) normative evaluation, which was a percentile evaluation based on comparison with their peers; (ii) temporal evaluation, which charted their individual progress over time; and (iii) no evaluation. The students were first informed of which type of evaluation they would receive for their work, then they were asked to answer questions on their mastery and ability goals. Ability goals are when students focus on demonstrating their ability or proving they can accomplish a task. Mastery goals are when students focus on individual learning and gaining mastery of a task or topic. They

were then given directions to work on a series of problems. Once students finished, the researchers had them answer questions on their perceived performance, intrinsic motivation, and intelligence beliefs, and then provided them with the experiment description.

The study checked students' goals (either ability or mastery) for the specific task based on the evaluation they knew they would receive, but the study did not test to see if those goals changed when students found they would receive a different type of evaluation, which would further inform if the type of evaluation affects students' goals. The groups were also assigned by row in each class that participated, and it was unclear if this meant the groupings in this study were random or diverse; if they were not grouped as random or diverse, then differences in ability in the groupings could skew the results.

Butler (2006) found that students who anticipated a normative evaluation were more likely to endorse ability goals and entity beliefs, while those who anticipated temporal evaluation more often endorsed mastery goals and incremental beliefs. Students who expected no evaluation endorsed both to similar degrees. They also found that students in the temporal evaluation group reported higher levels of intrinsic motivation, followed by those in the no evaluation group, with the students in the normative evaluation group reporting the lowest levels of intrinsic motivation. The researcher also unexpectedly found that participants who self-reported low competency on the task also tended to endorse entity beliefs over incremental beliefs. These findings suggest that students' intrinsic motivation and task goals are tied to the type of evaluation they expect. Evaluation by comparison to their peers led students to focus on demonstrating superior skills, whereas an individualized measure of

progress led students to focus on learning and developing their understanding, as well as fostered their intrinsic motivation for being involved in their learning.

Blackwell, Trzesniewski, & Dweck (2007) conducted a two-part research study that looked at students' intelligence beliefs and measured the impact that these can have on their academic achievement. In the first part of the study, they spent five years following four waves of students through junior high, with a total of 373 participants overall. The students took a questionnaire on their intelligence beliefs at the beginning of 7th grade. These were related to their math grades from the end of sixth grade through the end of 8th grade, with new grades added at the end of each term. The results could be limited by the fact that this study was only conducted at one school, where the particular school climate may have affected results so they would be different than if they were compiled from multiple schools, and that it only measured math, a subject that requires cumulative skill building to be successful. The researchers found a relation between intelligence beliefs and academic achievement in that, at the end of their time in junior high, the students who had reported incremental beliefs were outperforming the students who had reported entity beliefs.

The second part of the study was conducted at a different school with 91 7th grade students who were considered low math achievers (in the 35th percentile nationally). The researchers followed students' math scores and gave all students a questionnaire on their intelligence beliefs, similar to the first part. The students were broken into two randomly assigned groups, a control group and an intervention group. The intervention group participated in several workshops to learn about incremental theory, and then all students were tested to see if the workshops were effective. Students in the intervention group

endorsed incremental beliefs more than the control did, so the researchers continued to follow their math scores and compare them to their intelligence beliefs for the rest of their 7th grade year. The effect size of the second part of the study was small, and it only lasted for one year, so further long-term research would be beneficial. In the second part, the researchers found that all of the participants had decreasing grades in math until the intervention. After the intervention, the grades in the control group continued to decline, while those of the intervention group stopped dropping and began to improve. This suggested to the researchers that learning about intelligence theories and informing students' perceptions of their own intelligence and competency can have a positive effect on their academic achievement.

Combined, the results from these studies showed that the intelligence beliefs students hold play a crucial role in their engagement with and active participation in their education. When students subscribe to the incremental theory, they understand learning as a process. The study by Blackwell, et al. (2007) showed that teaching students about incremental theory helped them understand the nature of intelligence and their ability to learn, which in turn could help their academic achievement. Butler's (2006) study revealed that using evaluation methods that gauge individual progress over time helped students understand that their learning is what's being valued, rather than their ability to perform a task. This focus on development over time was shown to support incremental beliefs and mastery goals in students. Wong, et al. (2002) added that other ways in which teachers responded to student work were also associated with students' feelings of competency. Both of these can contribute to establishing a mastery climate in the classroom, which can

support intrinsic motivation and foster students' active participation and agency in their education. The study by Stornes, et al. (2008) added that teachers' empathic involvement, their support of student autonomy, and the clear use of regulation in the classroom were all methods of working to establish a mastery climate. When students understand that learning or mastery are the goals of education, and that learning is an incremental process that incorporates challenges and growth, they feel more competent in their own learning abilities and will be more empowered to take ownership of their learning.

Metacognition

Metacognition is another important category when considering strategies to encourage student agency. Students who use metacognition are able to understand their own cognitive processes, reflect on them, evaluate their use of strategies in learning, and use this information to regulate their cognitive processes (Dewey, 1972, p. 64; Masui & De Corte, 2005, p. 352; Theide, 2003, pp. 1470-1472; Sungur, 2007, p. 129). This is a critical piece to fostering student agency, because in order for students to be able to take responsibility for, and assert autonomy in their education, they need a solid understanding of how they learn and how they can make an education work best for them.

In a study by Mok, Fan, & Pang (2007) the researchers investigated the developmental trends in the cognitive and metacognitive competencies of 8,948 student across 8 grade levels in Hong Kong through the use of self-reporting on a questionnaire. They found that students' scores on these variables did not increase in the later grades with students' age. The researchers noted that this finding contradicted previous studies in controlled environments, which showed that

metacognition developed in relation to age, and felt a possible explanation for this difference might be that in this study students were reporting their perceptions of their metacognitive abilities, whereas previous studies used the researchers' measurements of metacognition through controlled settings. They also found that across the grade levels male students scored higher in self-efficacy while female students scored higher on knowledge and use of metacognitive strategies. This matched other findings that higher self-efficacy doesn't necessarily lead to greater use of metacognition.

The study used a questionnaire in which students self-reported their metacognitive competencies, and therefore may not reflect their actual metacognitive abilities. There can be a difference between what students think they know about their use of metacognition, and their actual use of it in their education. Additionally, the authors note that the cultural setting of the study may have influenced its results. They explain that Hong Kong is highly competitive in regards to education where students must compete for a quality education, and students have been previously found to have high achievement and low self-efficacy. The socio-cultural climate of education in Hong Kong may affect the results of this study and make it less generalizable to other countries.

Another study, by Masui & De Corte (2005), also looked at metacognition. They worked with 141 first-year business students at a Flemish university to study the effects of teaching students about metacognition on their academic achievement. The participants were broken into two control groups and one experimental group based on several characteristics the researchers felt were important, including: gender, prior knowledge, their score on an intelligence test, study skills, attribution of results from

studying, and self-assessed regulation abilities. The experimental group's interventions took place within the framework of two of their normal courses. They received instruction on four metacognitive skills- orienting, planning, self-checking, and reflecting- and four related affective and conative skills- self-judging, making choices or valuing, coping with emotions, and attributing. The researchers' found that students in the experimental group received higher scores in both their intervention-related and non-intervention related classes than students who were part of either control group. They also found that students' participation in the experimental group improved their regulation behavior, the application of metacognitive knowledge.

The setup of this study presented a potential issue with validity. The researchers did not describe the importance of the characteristics that were the basis of how students were assigned to the groups, nor how this information was used in making those selections. Without more information on this it's unclear if the assignment to groups may have led to differential selection, or if the researchers used this information to create groups that might reflect the diversity of a general class population. Additionally, while the intervention taught students eight different cognitive and metacognitive skills, only two of these were measured. Further study on this topic would be beneficial for understanding the generalizability of the findings; this sample consisted only of university students and there may be developmental differences that could affect the results of this same type of intervention with younger students.

In another study, Sungur (2007) examined the role that consequential tasks had in students' use of metacognition. The participants were 58 college students

enrolled in an elementary education course. All participants took initial questionnaires that measured their self-efficacy and metacognitive awareness. All participants were also given two tests, one of which they were told would count towards their grade and one that wouldn't. They were broken into two groups, one group took the consequential test first and the other took the non-consequential first. The results from their tests were compared with the results from the questionnaires and analyzed. This study is limited in that it used a small sample and relied on self-reported questionnaires to measure students' metacognition, which may not reflect their actual use or understanding. Additionally, the participants were college students involved in courses in the Department of Elementary Education, and therefore may have a more advanced knowledge of learning and metacognition than the average adolescent student.

The researcher found that on the consequential test, students' use of metacognition was the best predictor of higher test scores, whereas on the non-consequential test this was replaced by motivation and mastery goal orientation. The researcher felt the results indicated that the use of metacognition affected students' academic achievement on consequential tasks, while motivation, measured as mastery goal orientation, was the key factor in non-consequential tasks. However, the researcher also noted that motivation, either as mastery or performance goal orientation, played an important role for both consequential and non-consequential tasks, and that even if students had well-developed metacognitive strategies, they weren't likely to use them without motivation to do so. In some cases that motivation might be because the task is consequential, but if teachers can work to use the motivation expressed on the non-consequential test, a mastery

orientation, then students would be more likely to bring their metacognitive strategies to bear in the pursuit of learning in general, and not simply to pass a test.

These studies have important implications for the development of metacognition in students. The study by Mok, et al. (2007) showed that educators cannot assume that metacognition will develop automatically in students as they continue to get older. This requires active involvement of the teacher to help foster metacognitive skills in their students and to provide space for students to practice, reflect, and regulate their cognitive processes. The study by Masui & De Corte (2005) showed that teaching students about metacognition and expanding their awareness and use of it can positively affect their academic achievement. The study by Sungur (2007) revealed the important role that motivation plays in promoting the use of metacognitive strategies. Students used metacognitive skills and strategies when they were motivated to do so, either through intrinsic motivation in the form of mastery goal orientation or through extrinsic motivation and the teacher designating tasks as consequential. Fostering metacognitive competence in students can help them to understand and assert autonomy over their cognitive processes and learning, thus enabling students to take ownership of their education.

Autonomy

Autonomy is a critical component to student agency in education. It takes students from the role of a passive consumer of education to an active participant in and director of their education (Bruner, 1960, p. 72). Autonomy fosters independent learning abilities in students that allow them to turn any occurrence into a learning experience; a foundation of understanding is then developed through the continuous cycle of

reflective learning experiences (Dewey, 1963, p. 43, 71).

Koestner, Otis, Powers, Pelletier, & Gagnon (2008) conducted a three-part study on the effects of autonomous and controlled motivation on goal pursuit and progress. They define autonomous motivation as based on personal interests and values, whereas controlled motivation is based on a feeling of compulsion by internal or external factors. The first part of the study used a sample of high school students and had them answer a questionnaire on their academic and leisure goals, as well as whether their goal motivation was autonomous or controlled. This was followed by a second questionnaire a month later to gauge their goal progression. The second part of the study used undergraduate students who were all given a questionnaire on their academic goals and motivations. These participants were divided into either a control group or an implementation group. Participants in the implementation group were given a further questionnaire that prompted them to form plans, or implementation intentions, for their stated goals. All participants were sent a follow up questionnaire to gauge goal progression. The third part of the study involved female undergraduate students. In this portion of the study, the researchers designed three groups to which participants were assigned; the approach implementation, the avoidance implementation, and the control group. All participants were given a questionnaire about nutrition and body weight, and asked about goals for these. Participants in the approach implementation were further prompted to form plans, or implementation intentions, which focused on actively working toward their goals. Participants in the avoidance implementation were prompted to form implementation intentions that focused on avoiding behaviors that wouldn't help meet their goals.

There are several concerns about the generalizability of this study. The sample sizes were small, and the last part consisted of only female participants. The second and third parts used college students, who may have more experience with autonomous motivation than middle or high school students. The last part studied autonomous motivation and goal progress in the context of weight loss, a topic where the results may not be applicable to educational goals and motivation.

The researchers found that goal progress was greater with autonomous motivation, or when participants were pursuing their own interests and values, but that controlled motivation, or being compelled toward a goal, didn't negatively affect it. Therefore, increasing student's autonomous motivation helped them meet goals. Additionally, they found that helping students learn to use implementation plans for their goals can help them achieve further goal progress with autonomous motivation. However, they found that the implementation plans would need to be approach-oriented rather than avoidance-oriented. Additionally, the study did not address ways to foster autonomous motivation in students for academic tasks that are controlled and mandated by the educational system.

In another study, Assor, Kaplan, & Roth (2002) studied 862 Israeli elementary students in regards to teacher behaviors that support or suppress student autonomy. The researchers gave all participants a questionnaire that asked about teacher behaviors, their feelings while studying with that teacher, and their behavioral and cognitive engagement in the subjects taught by that teacher. They then compiled and analyzed the results. This study is limited because it is a single questionnaire and does not actively test any variables. Additionally, it relies entirely upon students' self-

reporting, which may not be an accurate measure.

In analyzing their results, the researchers found that both children and early adolescents were able to distinguish between behaviors that are autonomy-enhancing or autonomy-suppressing. Teacher behaviors that fostered relevance had a positive relation to students' positive feelings and behavioral and cognitive engagement, while suppressing criticism had a negative relation to engagement. The researchers also noted that in terms of fostering autonomy, freedom of action is less critical than making sure student actions align with student goals, interests, or values. In other words, students don't mind being told what to do if it lines up with their goals, interests, or values. Results also showed that teacher behaviors that create space for students (providing choice, avoiding intrusion, and tolerating criticism) were not necessarily viewed as supporting students' autonomy. This might be because students didn't see connections between schoolwork and their personal goals, because they hadn't clarified their personal goals, or they just weren't sure what to do with the space. The researchers proposed the idea that supporting autonomy in a classroom isn't so much about giving students the space to do what they like, but is rather about structuring an environment that aligns with student goals, interests, and values, and works to help them build the skills they need for self-directed learning.

Leroy, Bressoux, Sarrazin, & Trouilloud (2007) led a study on how teachers' implicit theories of intelligence and the pressures they perceived themselves as facing could affect the autonomy support in a classroom. The researchers used questionnaires from 336 French 5th grade teachers that asked about perceived pressures (from parents, student performance, colleagues, student

satisfaction, school curricula, and administration), teacher perception of their autonomy support for students, their implicit theories of intelligence, and their self-efficacy. The researchers then compiled and analyzed the data. The results are limited because they were all self-reported from a single questionnaire, and the study does not use any controlled testing to measure variables. Teachers' reports of their activity may differ from their actual activity, but it does at least shed light on their intentions and the direction that teachers want to head.

The researchers found that higher self-efficacy had a strong positive relationship to a teacher's use of autonomy support. They also found that when teachers held incremental beliefs it had a positive effect on their self-efficacy, while entity beliefs had a negative effect on teacher support of autonomy. They also found that seniority, how long a teacher had been in the profession, had a positive effect on autonomy support and self-efficacy, while perceived pressures had a negative effect on them. Additionally, teachers who held to the incremental theory were more likely to support autonomy. These findings suggest that in understanding the processes that support their ability to use autonomy supportive pedagogical practices, teachers can be aware of how their teaching might be influenced and even work to address these factors. The results showed that incremental beliefs are related to increased self-efficacy, and that higher self-efficacy is associated with more autonomy support. Teachers can work to increase their self-efficacy by understanding their own learning process as teachers, and therein affect the practices that influence student autonomy.

Together these studies give some interesting insights into autonomy. Providing support for student autonomy is more than just giving students space or freedom of action. Assor, et al. (2002)

showed that it requires aligning tasks and learning opportunities with student goals, interests, and values. They also showed that suppressing criticism has a negative relation to engagement, so not only do teachers need to take student goals, interests, and values into account, they also need to accept student opinions about learning in the classroom. Koestner, et al.'s (2008) findings complemented this by showing that students make more progress when they pursue goals based on their own interests and values, rather than feeling compelled by someone or something else. Assor, et al. (2002) also showed that fostering relevance is important to helping students feel their autonomy is being supported. Fostering relevance in teaching practices had a positive association with engagement, and student engagement is critical to active participation and agency in their education. The results from these studies further suggested that structuring learning opportunities in ways that build student capacity for autonomy can help make the learning relevant to students, especially if they value increased autonomy, and this in turn can help their engagement. Koestner, et al. (2008) also showed that implementation plans can have a positive effect on goal progress, so long as they encourage students to consider ways to approach their goals. Leroy, et al. (2007) took the teachers' perspective on the subject and showed that there are several factors that affect a teacher's support for student autonomy in a classroom. By working to promote their own ability to foster autonomy in a classroom, teachers work to establish a classroom climate that encourages student agency in education. When students are able to transform their role in the classroom from a passive observer to a self-directed, autonomously motivated learner who uses the teacher as a resource rather than a singular authority, then they are exercising agency and actively taking control of their

education (Bruner, 1960, p. 72; Dewey, 1963, p. 72).

Conclusion

There are a number of important conclusions that can be drawn from the research about the role of intelligence beliefs, metacognition, and autonomy relative to students' active participation in their education. These conclusions help to inform my practice as a teacher.

Each of these subjects, as demonstrated in the research, are pathways to increasing student engagement, motivation, and personal ownership of their education. Additionally, the categories of intelligence beliefs, metacognition, and autonomy were artificially separated in this literature review, but some of the findings revealed an overlap between them that shows the interconnectedness of their roles in supporting student agency in learning.

The research showed that when students hold incremental beliefs, they are more likely to have increased academic achievement, motivation, and engagement (Wong, et al., 2002; Blackwell, et al., 2007; Stornes, et al., 2008). It therefore seems like a worthwhile goal to foster a mastery climate and personal incremental beliefs in students, supported through practices like temporal evaluation and direct teaching of incremental theory (Blackwell, et al., 2007; Butler, 2006; Stornes, et al., 2008).

The research on metacognition suggested that students do not necessarily develop metacognitive abilities on their own, and that teaching them metacognitive skills can positively impact their academic success (Masui & De Corte, 2005; Mok, et al., 2007). The results also showed that students are more likely to use metacognitive skills toward success when the task is consequential, that is, if the teacher has specified that it's valuable or if the students themselves feel it's important (Sungur, 2007). Students need to understand

their learning process in order to take ownership of it, and learning metacognitive skills can help them achieve this and therefore can play a vital role in promoting student agency in education.

The research on fostering autonomy suggested that it takes more than giving students freedom of choice and space in the classroom; it requires aligning learning opportunities with students' interests, values, and goals, and purposeful structuring to build their capacity for autonomy (Assor, et al., 2002; Koestner, et al., 2008). The results also suggested that fostering relevance for students, a teachers' own awareness of their learning process, and endorsement of incremental beliefs are positively related to supporting student autonomy (Assor, et al., 2002; Koestner, et al., 2008; Leroy, et al., 2007). The use of implementation plans that prompt students to plan out means of achieving goals further helps to build capacity and foster student autonomy (Koestner, et al., 2008). These strategies can be helpful in developing student autonomy, which is a critical aspect in exerting agency and getting students actively engaged in their education.

The findings from all of the studies across the categories overlapped in several significant ways that will help to inform my practice as a teacher. They showed that the creation of a mastery climate in the classroom is positively related to higher intrinsic motivation, self-efficacy, and engagement; all of which are important factors in student agency (Assor, et al., 2002; Blackwell, et al., 2007; Butler, 2006; Koestner, et al., 2008; Mok, et al., 2007; Stornes, et al., 2008; Sungur, 2007). Specifically, the studies suggested that a mastery climate can be supported in a classroom by using evaluation methods that gauge individual progress, teaching students about and modeling an endorsement of the incremental theory of intelligence, fostering

a metacognitive awareness of students' learning processes, and helping students develop the skills to assert autonomy in their learning (Assor, et al., 2002; Blackwell, et al., 2007; Butler, 2006; Koestner, et al., 2008; Leroy, et al., 2007; Masui & De Corte, 2005; Sungur, 2007).

As a teacher, I can directly instruct my students about incremental theory to increase their understanding of learning. Strategies suggested by the research include teaching students about how the brain works, teaching them the different theories of intelligence, encouraging them to reflect and discuss what has contributed to their learning, prompting students to reflect on how practice aids learning, discussing how mistakes contribute to learning, and analyzing stereotype around intelligence (Blackwell, et al., 2007). These strategies would help me establish a mastery climate, encourage students to value learning, encourage students to develop a metacognitive awareness of their learning, and to foster intrinsic motivation for classroom learning activities (Blackwell, et al., 2007; Masui & De Corte, 2005; Stornes, et al., 2008; Wong, et al., 2002).

Evaluation methods that make visible students' individual growth and progress over time help them understand that learning is a process (Butler, 2006). I can use this kind of evaluation to help students develop metacognitive skills by prompting them to reflect on their learning activities related to the evaluation and to assess what strategies worked for them and what they can do in the future to improve (Masui & De Corte, 2005; Sungur, 2007). This kind of evaluation can serve as a foundation for guiding students in developing their autonomous capacity by using the evaluation and students' reflections to make goals for future learning (Assor, et al., 2002).

Implementation plans are another strategy I can incorporate into my practice to

support the development of students' autonomy in pursuit of their learning goals (Koestner, et al., 2008). An important part of implementation plans is guiding students to plan out means of achieving their goals. Students can use their understanding of the learning process, their metacognitive awareness, and evaluations of their progress to set further goals for themselves (Assor, et al., 2002; Blackwell, et al., 2007; Butler, 2006; Koestner, et al., 2008; Masui & De Corte, 2005; Stornes, et al., 2008; Sungur, 2007). When students can assess their learning process and use of strategies to plans for how to improve their learning in the future, they are asserting agency in their education.

While the research investigated in this paper has helped me to understand some strategies to encourage students to be active agents in their education, there are other areas that I would like to explore further. The studies I examined suggest that creating a mastery climate in the classroom can play a critical part in supporting student engagement and to make the most of the learning opportunities in their education. I would like to learn more about effective strategies for fostering a mastery climate in a classroom. The research also suggests that structuring the development of metacognitive competencies can be important to student agency, but the research did not give details about specific strategies and their comparative effectiveness. I would like to learn more about various strategies for incorporating metacognitive development into classroom activities, and how this can be used to strengthen student agency. Extended research in these areas would help me further understand ways to encourage students to move from a passive to an active and assertive role in deciding the course of their learning and maximizing their educational opportunities.

References

- Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviours predicting students' engagement in schoolwork. *British Journal of Educational Psychology*, 72(2), 261-278. doi:10.1348/000709902158883
- Au, W. (2009). *Unequal by design*. New York: Routledge.
- Bigelow, B. (2009) Standards and tests attack multiculturalism. In Au, W. (Ed), *Rethinking Multicultural Education* (pp. 53-61). Milwaukee: Rethinking Schools, Ltd.
- Blackwell, L., Trzesniewski, K., & Dweck, C. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, 78(1), 246-263. doi:10.1111/j.1467-8624.2007.00995.x
- Bransford, J.D., Brown, A.L., & Cocking, R.R. (Eds.) (2000). *How people learn: Brain, mind, experience and school*. (Expanded ed.) Washington, DC: National Academies Press
- Bruner, J. S. (1960). *The process of education*. Toronto: Random House of Canada, Limited.
- Butler, R. (2006). Are mastery and ability goals both adaptive? Evaluation, initial goal construction and the quality of task engagement. *British Journal of Educational Psychology*, 76(3), 595-611. doi:10.1348/000709905X52319
- Dewey, J. (1938/1963). *Experience & education*. New York: Collier Books.
- Finn, P. J. (2009). *Literacy with an attitude: Educating working-class children in their own self-interest* (2nd ed.). Albany, NY: State University Of New York Press.
- Koestner, R., Otis, N., Powers, T., Pelletier, L., & Gagnon, H. (2008). Autonomous motivation, controlled motivation, and goal progress. *Journal of Personality*, 76(5), 1201-1229. doi:10.1111/j.1467-6494.2008.00519.x
- Lepper, M., & Henderlong, J. (2003). Motivation. In *Encyclopedia of Education* (Vol. 5, pp. 1695-1698). New York: Macmillan Reference USA.
- Leroy, N., Bressoux, P., Sarrazin, P., & Trouilloud, D. (2007). Impact of teachers' implicit theories and perceived pressures on the establishment of an autonomy supportive climate. *European Journal of Psychology of Education*, 22(4), 529-545. doi:10.1007/BF03173470
- Masui, C., & De Corte, E. (2005). Learning to reflect and to attribute constructively as basic components of self-regulated learning. *British Journal of Educational Psychology*, 75(3), 351-372. doi:10.1348/000709905X25030
- Mok, Y., Fan, R., & Pang, N. (2007). Developmental patterns of school students' motivational- and cognitive-metacognitive competencies. *Educational Studies*, 33(1), 81-98. doi:10.1080/03055690600948281
- Rogoff, Barbara. (2003). *The cultural nature of human development*. Oxford: University Press.
- Stornes, T., Bru, E., & Idsoe, T. (2008). Classroom social structure and motivational climates: On the influence of teachers' involvement, teachers' autonomy support and regulation in relation to motivational climates in school classrooms. *Scandinavian Journal of Educational Research*, 52(3), 315-329. doi:10.1080/00313830802025124
- Stoskopf, A. (2009) The Forgotten history of eugenics. In Au, W. (Ed), *Rethinking*

- Multicultural Education* (pp. 45-51). Milwaukee: Rethinking Schools, Ltd.
- Sungur, S. (2007). Contribution of motivational beliefs and metacognition to students' performance under consequential and nonconsequential test conditions. *Educational Research and Evaluation*, 13(2), 127-142. doi:10.1080/13803610701234898
- Thiede, K. (2003). Learning to learn and metacognition. In *Encyclopedia of Education* (Vol. 4, pp. 1470-1472). New York: Macmillan Reference USA.
- Wong, E. H., Wiest, D. J., & Cusick, L. B. (2002). Perceptions of autonomy support, parent attachment, competence and self-worth as predictors of motivational orientation and academic achievement: An examination of sixth-and-ninth-grade regular education students. *Adolescence*, 37(146), 255-266. Retrieved from EBSCOhost.
- Zull, J. E. (2002). *The art of changing the brain: enriching the practice of teaching by exploring the biology of learning*. Virginia: Stylus Publishing.

