INCREASING ACHIEVEMENT AND MOTIVATION

IN SECONDARY LANGUAGE ARTS CLASSROOMS

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ABSTRACT

This master's project is an examination of current literature on cognitive engagement and motivation. Through examining research on achievement goal theory and optimal experience theory, as well as some current teaching methods, this paper explains a number of effective strategies for increasing cognitive engagement and intrinsic motivation in secondary language arts classrooms. Research found the non-judgmental feedback, relevant classroom materials, culturally congruent pedagogy, student choice in content, teaching, and concept oriented instruction are all associated with increases in intrinsic motivation and/or cognitive engagement.

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PREFACE

CHAPTER ONE: INTRODUCTION

It is second period in my first student teaching experience I am getting ready to face a student I'll call Marty. Marty is a fun, articulate and interesting young man who just does not want to do anything in class, or at least anything related to reading or writing. In an English class, this is problematic. Marty does like to talk, however, and is happy to share his unwillingness to do anything in class verbally with the teacher or with any of his classmates who will listen. Marty has life all figured out, he will be a landscaper, working with his hands and creating beautiful yards and gardens and making things grow. I have no doubt about Marty's horticultural abilities; I'm nearly as convinced as he is that it will be a great career for him. My job, however, is to teach him to read and write in English well enough to pass the Washington Assessment of Student Learning (WASL) and Sophomore English. Unfortunately, I cannot do that without some cooperation on Marty's part and on this particular day Marty isn't feeling cooperative. We start class in our usual way, a quick-write about a current theme in the literature we're reading. Marty complains vociferously, much to the amusement of his classmates.

"Ms. Wood! Why do I have to write about this? I'm going to be a landscaper. Landscapers don't write about what they think about this stuff. Why do I have to do this?"

I dig deep into my teacher's bag of tricks for a response. So deep, in fact, that I reach past any well researched techniques bought and paid for by my college education and into the shadowy region of my early childhood for the old saw "Because I said so."

Even as I can't believe those words are coming out of my mouth I am relieved

because they buy me five minutes of Marty's cooperation. I spend those five minutes worrying about Marty's future—not the distant future of landscape contracting but the more immediate Spring WASL. How on earth can I get Marty and his classmates, some of whom are similarly if less vocally disengaged, to participate with me in learning to write clearly and read well? I (and the nation, state, district, and school) want them to be proficient enough to pass the WASL and have access to the skills of literacy in the future of their choice.

All of the programs, plans and practices made available by the best research in the world still require student cooperation to be effective. It is, after all, the learner who does the learning. For students merely to show up in class requires significant motivation. That is why, before anything else in teaching, learning how to encourage motivation and engagement on the part of students, is an essential pedagogical skill.

On a school-wide level, lack of motivation and engagement can lead to the worst school outcome of all—dropping out. At the opposite end of the spectrum, when students are motivated and engaged in the classwork, learning happens more readily.

In this paper I have chosen to explore effective strategies for increasing cognitive engagement and intrinsic motivation in the secondary language arts classroom. This chapter contains an explanation of the rationale for the inquiry, an overview of definitions, current theories, controversies, and the limitations of my research question.

Rationale

The effects of student engagement levels (or disengagement levels) have been in the popular media recently. The *Oprah* show produced a two-part special quoting such diverse notaries as Bill Gates and Jonathan Kozol as stating that schools around the country are "failing." (April, 2006). Time magazine, in a recent issue called "Dropout Nation" illustrated the effects of increasing student disengagement. *Time* reported that

> "Dropping out of high school today is to your societal health what
>
> smoking is to your physical health, an indicator of a host of poor outcomes
>
> to follow, from low lifetime earnings to high incarceration rates to a high
>
> likelihood that your children will drop out of high school and start the
>
> cycle anew." April, 2006.

While the reasons for which students dropout are varied, 47% of the dropouts surveyed in a Bill and Melinda Gates foundation report entitled "Silent Epidemic" said that one of the major reasons they had dropped out was that they found classes uninteresting and that they were "bored and disengaged" from school. Some of the reasons students described their classes as uninteresting were a lack of opportunity for active participation, and content not relevant to anything they wanted to learn for their future. (Gates Foundation Study, 2006).

Because the consequences of extreme disengagement (dropping out) are so dire for the young people involved, it is imperative that teachers be prepared to teach in a way that is cognitively engaging and motivating. This involves taking the learner and his or her needs and interests into account in decisions about pedagogy and curriculum. This

may seem obvious, but tends to get lost in the furor over what should be taught and what level of academic achievement we expect from students at what age.

Any questions about making education engaging and motivating must begin with the learner and his or her experience in an educational setting. Motivation and engagement mean that what is being learned is somehow meaningful to the learner. The old image of a students sitting obediently and quietly at their desks while the teacher pours knowledge into their brains is just that: old and outdated. Learning is a process whereby the learner builds upon existing knowledge by creating new neuronal networks in the brain (Zull, 2002). Learning is a constructive process which can only be truly carried out by the learner (McCombs and Whisler, 1998; Zull, 2002). This constructive, neuronal process can best be achieved when the content is relevant and meaningful to the learner (McCombs and Whisler, 1998). Essentially, it is important to make classrooms and schools centered upon what is motivational and engaging to the learner because learning will not occur any other way.

To return to the beginning, my student Marty, whom I mentioned at the beginning of this chapter, was absolutely right to question what value any of my lessons had for him. In order for him to learn it will be necessary for a teacher to teach him in a way that makes English Language Arts relevant to his life. In order to achieve my (and the nation, state, district and school's) educational objectives for my students, it will be necessary to teach all of them in a way that centers upon their learning and not my teaching. The study of motivation and engagement is essential to every teacher and administration because no standards will be achieved without them.

Current Theories

Motivation is not a monolithic construct, where students are either motivated or not. Motivation has many component parts and ebbs and flows according many different factors, from students' energy levels on a particular day to influences as broad as family and culture. It is the same with engagement. Different aspects of a school task or class can be more or less engaging on any given day.

The following are some important schools of thought about engagement and motivation, as well as their component parts.

Achievement goal theory:

Achievement goal theory is the study of the motivations students have for their academic work. Achievement goal theory originally posited two kinds of motivations: a mastery goal and a performance goal. Students with mastery goals ostensibly learned for learning's sake—to master the material. Mastery goals are in essence a manifestation of intrinsic motivation. Performance goals are at the other end of the spectrum from mastery goals. Students with performance goals learned in order to demonstrate what they learned to someone in authority—to perform. (2004, Wolters). Most teachers have had students who think mostly about getting a good grade and not about learning the material. This is a manifestation of a performance goal and it is associated with extrinsic motivation.

More recently two other components of achievement goal theory have entered the arena, approach and avoidance. In the domain of performance goals, student motivation

is now divided into two separate areas. Students with a performance approach goal learn in order to demonstrate to others what they know publicly, while students with a performance avoidance goal orientation would learn to avoid looking incompetent in front of their peers or others. (Wolters, 2004). Of course, few people have a complete mastery/performance or approach/avoidance goals. Also, classes and learning communities have their own goal structure which influence the achievement goals,of their members. The study of how group and individual, mastery and performance, approach and avoidance orientations all influence each other is the subject of much ongoing study. (Wolters, 2004).

The mastery approach orientation is most closely related to intrinsic motivation, the kind of motivation with which this paper is most concerned. Mastery goal structures—a classroom which is structured around Mastery goals, seems most likely to promote cognitive engagement, motivation and achievement (Ames and Archer as quoted in Wolters, 2004).

This particular area of motivation theory is very applicable to classroom teachers because often study authors examine particular methods or techniques for increasing motivation, or explore what sorts of environments hinder or hamper motivation in students. Teachers may draw from these studies specific techniques to employ in the classroom in order to increase motivation and engagement in the classroom.

Flow theory

A very intriguing aspect of motivation and engagement which is the subject of much current inquiry are theories surrounding optimal experience, or flow. Flow, a concept

developed by Csikszentmihalyi, is something most people have experienced at one time or another (Csikszentmihalyi and Csikszentmihalyi, 1988). While reading a book, writing or doing some enjoyable hobby many people reach a flow state. It is a state of intense concentration and cognitive engagement. Operationally defined, it is when a participant in an activity is both highly challenged and using his or her skills at the highest level possible. Enjoyment and intense concentration are associated with flow states as well—someone in a flow state will completely lose track of time. Flow is different from the experience of watching television or other activities purely for entertainment's sake. Although someone being entertained for a long period of time is interested in what he or she is watching and may lose track of time, they are not necessarily in a flow state. This is because they are not necessarily using any skill which they possess to interact with the input coming from the t.v.

In addition to being enjoyable, Flow has been associated with increased self-esteem and self-efficacy as well. Self-efficacy is the belief or expectancy that one will be able to perform a specific behavior to reach a specific goal or desired outcome (Shiefele, 1999). Flow also has the added advantage of having been studied in a variety of cultures, from elderly Korean immigrants, Japanese motorcycle gangs, and American women and men in everyday work situations. There are now researchers studying flow in the context of learning, since it is the perfect storm of cognitive engagement and it is intrinsically motivating. (Csikszentmihalyi and Csikszentmihalyi, 1988). This field of inquiry is often called optimal experience because it is an optimum state of learning and of life.

Achievement Goal theories and Optimal Experience theories often overlap somewhat. Both fields often examine the effects of self-directed kinds of learning on student motivation and experience.

<div align="center">Controversies</div>

Performance goals as adaptive

Achievement goal theory began with a basic dichotomy between mastery goals and performance goals—a student was assumed to either have one or the other, or at least be dominant in one. Mastery goals, during this time, represented focus on learning or mastery of a task, while performance goals represented the attempt to demonstrate ones ability or at least avoid looking incompetent. Since mastery goals had been associated with greater self-efficacy, internal locus of control, greater persistence and other positive outcomes (Ames, 1992; Dweck and Leggett, 1988 as cited in Harackiewicz, et al., 2002). More recently, however, researchers have begun to question whether or not performance goals are as maladaptive as had been previously thought. Researchers began to refine their theories, positing that performance goals could most accurately be divided into two different types: performance approach and performance avoidance. (Midgely, et.al., 2001, as cited in Harackiewicz, et al., 2002) Students with performance approach goals sought to demonstrate their ability by performing tasks as well or better than others, while students with performance avoidance goals sought to avoid demonstrating their possible incompetence. (Harackiewicz, et al., 2002). This was an impetus for more detailed study, this represented a challenge to the paradigm of mastery goals being

considered the most adaptive, and studies continue currently about the role of performance avoidance and approach goals.

Behavioral, emotional and cognitive engagement:

Engagement generally involves commitment to a task or subject. There are three kinds of engagement, behavioral, emotional and cognitive. Behavioral engagement is generally measured in terms of student conduct and on-task behaviors. A class sitting quietly, heads bent over their work could be said to be behaviorally engaged. Also, a group of students engaged in animated discussion about a topic related to their study could be said to be behaviorally engaged as well. Emotional engagement measures students' attitudes, interests and values. How do students feel about their subject matter or the skills they are developing? Cognitive engagement measures the students' motivational goals and self-regulated learning.

Some researchers feel that engagement should be defined as those times when all three forms of engagement are present (Fredricks, Blumenfeld and Paris, 2004). However, most studies of engagement choose to emphasize one form or the other. Behavioral engagement is the easiest component of engagement to measure, since it includes things like dropping out of school, completing homework and time on task in classrooms. According to Fredricks, et.al. there is a preponderance of studies in which engagement is measured as student on-task behavior, participation in school activities, and disruptive behaviors. Fredricks, et al., in a literature review as recent as 2004, stated they were unable to find any studies exploring the role of cognitve engagement and its effects on the opposite end of the engagement spectrum: dropping out.

I feel that behavioral engagement follows emotional and cognitive engagement and that once those objectives are achieved, behavioral engagement will follow. Whether this is true or not is part of the focus of this study. This doesn't mean that cognitively and emotionally engaged students would be silent—possibly quite the opposite—only that their work would be focused on the tasks at hand.

Limitations

This paper is concerned with effective strategies for increasing intrinsic motivation and cognitive engagement in secondary language arts classrooms. In order to achieve this goal I have limited the scope of my inquiry as described below.

For a strategy to be effective it must be useful for all teachers and all students. For the purpose of this paper I qualify effective strategies as teaching strategies one could implement in most classrooms, regardless of the diverse population of students, community and school financial support, or other factors. It may increase engagement, for example, to take students on a variety of field trips to exciting places regarding a subject they are studying, but this may not be an effective strategy available to all teachers everywhere, so it would not be within the scope of this paper.

Effective strategies increase all three levels of engagement, emotional, behavioral and cognitive to some degree. Strategies that increase one kind of engagement but decrease another will most likely be evaluated as not effective. Behavioral engagement as described by time on task, attentive listening, or participating in extra-curricular activities is, I believe, a by-product of being emotionally and cognitively engaged. For

this reason I have not examined studies which are focused solely on behavioral engagement.

At the beginning of my research I also limited effective strategies to those which focused solely on improving mastery (vs. performance) or task (vs. performance) goals. Research forced me to re-examine this position, however. Since it appears some kinds of performance goals are adaptive (Harackiewicz, et. al.,2002), I have included studies about aspects of performance goals in my research.

Also, given that teachers today are evaluated on the academic performance of their students as demonstrated by grades and test scores, and students are almost universally evaluated by grades, grade point averages (GPA), and test scores, I have included that in my criteria of effective strategies. I have misgivings about the ability of grades, GPA and standardized tests to accurately assess the academic abilities and achievements of students. However, since this is the most common measure of academic achievement both in secondary schools and academic research, I concede here that it is relevant to my inquiry.

Conclusion

No educational standard, no matter how fair, no matter how relevant to a student's future in society, can be achieved without the cooperation of the student him or herself; it is imperative that all teachers examine their practice for ways to increase student motivation and engagement. A look at the current dropout statistics quoted earlier in the paper is sufficient to demonstrate that the lack of school engagement and motivation is indeed a nationwide problem. The solutions to those problems begin with student willingness to learn. Indeed, learning can only occur inside the learner. As obvious as

this may sound, many schools and classrooms view the student as a car, and the school as a gas station. The students enter the school and are filled by their teachers with knowledge as if physical presence and proximity to a working pump were the only things required. Modern brain research has shown, however, that students construct their own knowledge from their reactions to things in their environment (Zull, 2002). Given current appalling dropout rates it seems logical to conclude that the knowledge students are constructing is that school is not a valuable place for them to be.

Teachers, school administrators and parents generally understand that school is important for students' lives and success in school is valuable to their future. This paper will examine ways in which students can also feel school is valuable to them and the learning done in school is relevant to their lives. More than mere engagement however, this paper is concerned with the actual cognitive function of learning, its relationship to engagement and the motivation to learn content, rather than simply get good grades. This paper seeks to answer the question "What can teachers do that will assist students in willingly constructing their own knowledge about the content in classrooms?"

To answer this question I will examine the historical context for discussing the needs of the learner in the classroom and examine a cross-section of current research about student motivation and engagement.

CHAPTER TWO: HISTORY

Although motivation, engagement and interest are similar but separate concepts, their history, like the research done on those subjects today, is often intertwined. The question of motivation and engagement is really the question of what the experience of teaching, learning and schooling is for the children involved, and how their needs and wishes are met (or not) in the school environment. The experience of children is often different from school experience for teachers, administrators and anyone else involved. It is also different from and often in conflict with the objectives of schooling as portrayed in mandates of the nation, state, community or district in which the schools reside. Intrinsic motivation and cognitive engagement are frequently at odds with the goals of schooling. This is because school reflects the goals of the larger society, be they aligned with the interest of the students or not. (Spring, 2005).

This is not a recent or an American issue, and it has much to do with views about the origin of knowledge and learning itself. In the third Century B.C.E. Socrates felt that since the soul was immortal everyone possessed all knowledge, having learned it prior to their birth. He described learning as a "recollection" of the previous knowledge (Plato, trans. 1976, p14). Socrates even demonstrates this theory by leading a slave boy through a series of questions about geometry. The slave boy considers each question in relation to a figure of a square that Socrates has drawn. The questions lead him through an orderly series of concepts, and he is able to answer Socrates' questions correctly. The philosopher says that this proves that the boy already knew the answers and just needed to remember them (Plato). While this is significantly different from our understanding of

learning today, it is significant to the history of motivation because it demonstrates the idea that learning begins within the student, not within the school system or within the teacher.

Prior to the 17th and 18th Century in Western society, and in the British Colonies in particular, it was widely held that young people came into the world as vats of original sin, to be cleansed by the moral teachings of the church, parents, and educators. This approach was education from the outside in, the feelings and experiences of the students involved was irrelevant at best and harmful to their own salvation at worst. (Spring, 2004).

John Locke, in the late 17th Century, promoted the slightly more humane idea that children were Tabula Rasa, or blank slates, to be written upon by older, wiser adults. Locke emphasized the importance of habits and upbringing. He described adults as mere products of the training they had. This is somewhat different than the framework of original sin, in which children were born neither bad nor good, and became what their lives inscribed upon them. (Spring, 2004).

During the Enlightenment, however, the philosopher Rousseau began to focus on the inner needs of the child. In his story *The Emile*, for example, Rousseau did not believe in teaching a child to read until later in childhood, when the child expressed a desire to read out of his or her own self-interest. Not only did this represent a change in emphasis from the needs of the society to the needs and interests of the child, it represented a new theory of childhood as well. In Rousseau's view the child was naturally good instead of naturally bad. If left to his or her own devices, and not messed

with by corrupt adults and their corrupt society, the child would continue to develop a basically good nature. (Rousseau, trans. 1911; Spring, 2004).

In the British Colonies of what is now the United States of America, thinkers effected by the European Enlightenment began to have a less stringent view of education as well. Thomas Jefferson proposed the heretofore unique and revolutionary idea that free schooling should be provided to both male and female students. The best boys from these schools could then continue their education at public expense. He believed that education provided tools for students to prove their worth and that a "natural aristocracy" would rise to the top and become leaders for the future. A key part of Jefferson's educational plans was that leaders and statesmen would emerge from this form of public schooling (Spring, p.52, 2005). While providing opportunity to a few pupils, Jefferson's plan linked the interests of the state very closely to education. This was a definite shift from earlier colonial models of education, where families and churches were most involved in education (Spring, p. 41, 2005).

Although Jefferson gave lip-service to the innate characteristics of children, he also linked schooling, and therefore learning, to the interests of the state. This set in place a conflict between learner-centered schooling those who sought to influence state interests. Since the state was run by white males at the time and reflected their interests, anyone whose culture, interests, and motivation were not aligned with the state did not find their interests reflected in the nascent United States school system. Indeed, frequently the school system became openly hostile to anyone not fitting the White Male model. This prevented schooling in the early United States from being learner-centered for all of the students involved (Spring, 2005).

While the beginning of the Romantic period in Euro-American history marked an even more compassionate view of the innate goodness of children, it also coincided with the beginning of the Industrial Revolution. The Industrial Revolution brought with it a need for the division of physical labor and workers to work all day at jobs where they did the same thing day in and day out in orderly precision. Lancasterian Schools, originally designed to educate large numbers of poor children, were the best example of schools which stressed obedience and order. Students sat in neat rows of desks bolted to the floor and received lessons under a hierarchy of students. Rewards and prizes were given as intrinsic motivators. The values of the Lancasterian school system were the same as those required by the burgeoning factories of the time: submission, order, and industriousness (Spring, p.59, 2005). These schools were completely organized from the top-down. The motivations and needs of the children involved were beside the question.

However, toward the end of the 19th Century John Dewey was deeply concerned with the experience of children in a school setting. He made the distinction between traditional education, which was primarily concerned with perpetuating its own values, and progressive education which recognized the needs and experiences of the child as important. Dewey also emphasized the individualization of education.

Dewey felt that it was not sufficient that certain materials and methods had proved effective in the past. He felt the methods and materials being used should always prove their educative quality in the present and for varied groups (Dewey, 1938).

Dewey recognized the need of students to have input into their own subject matter and education; a common theme in today's understanding of what increases intrinsic motivation and cognitive engagement. (Dewey, 1938, Spring, 2004)

Dewey also saw the value in play—something intrinsically motivating and engaging in the lives of children. Dewey also broke down the difference between play and work. During play participants are highly motivated but not as interested in the outcome or product of their activity. During work they have the opposite experience, the outcome and not the intrinsic motivation are the reason for the activity. However, he said the difference between work and play was "one of emphasis." (Dewey, quoted in Rathunde and Csikszentmihalyi, 1993). In other words, to turn work into play one merely has to become engrossed in the activity enough to have the importance of the task become slightly more important than the final outcome. To turn play into work one need only shift the emphasis of the activity onto the final product. This of course it a delicate balance. If play becomes completely separated from its ends, or work from its intrinsic value "play degenerates into fooling, and work into drudgery." (Dewey, quoted in Rathunde and Csikszentmihalyi, 1993).

This difference and interplay between activities which are inherently motivating (play), and activities which are more directed towards outcome (work), and how the two meet and come into play when students are cognitively engaged and intrinsically motivated, is the precursor to current Optimal Experience Theory. (Csikszentmihaly and Cskikszentmihalyi, 1988).

Another influence on current motivation, engagement and interest studies was William James. A contemporary of Dewey, James considered interest to be connected to motivation and engagement. James connected learning to interest and motivation, saying:

"Millions of items of the outward order are present to my senses which

never properly enter into my experience. Why? Because they have no

interest for me. My experience is what I agree to attend to. Only those

items which I notice shape my mind—without selective interest,

experience is an utter chaos (William James, 1890/1950, quoted in

Schiefele, 1991).

Another early 20th Century educator to connect interest, motivation and education

with classroom practice was Maria Montessori. Like Dewey, Maria Montessori believed

that teachers should create a classroom environment conducive to children's motivation

and engagement. Montessori also believed that students' attention (interest) and will

(motivation) were best left to flower within the children themselves, within the context of

an environment conducive to what Dewey may have called "educative experience."

(Montessori, 1917; Dewey, 1938).

Although these people were strong proponents of students' interests and more

organic methods of education, the interests of the state and business were also heavily

influencing the U.S. school system. Efforts such as vocational training and differentiated

classrooms began to be popular because they prepared students to meet the needs of

business (Spring, p. 281, 2005).

In more recent history in the late 20th and early 21st Century, the tension between

interests which influence the state and the motivations and interests of the learner

continues. Learner-centered education takes into account the depth and breadth of

student schema, including everything from prior knowledge to ethnic and family cultures.

The current educational climate, reflected by the passage of No Child Left Behind in 2001, stresses the preparation of students for the work force and standardized testing. The increasing dropout rates—nationally at about 30% and up to as high as 50% in some districts, (*Time*, April, 2006) demonstrate a lack of engagement and a motivation to even attend school, let alone participate in learning. Going forward, as school administrators, educators, and politicians attempt to reconcile business and political influences with the needs of students, perhaps they will take into account that nothing can be accomplished without the motivation and engagement of the students in question.

The following chapter examines some of the current research on motivation and engagement with the goal of determining what classroom teachers can do to meet the motivational and engagements of their students in order for learning to occur.

CHAPTER THREE: REVIEW OF THE RESEARCH

Introduction

This chapter is an overview of research on the topic of cognitive engagement and intrinsic motivation with the goal of finding out methods secondary classroom teachers can use to increase those forms of motivation and engagement for their students and thus increase student learning. As mentioned in Chapter One, there is overlap between emotional and behavioral engagement and cognitive engagement, also between intrinsic and extrinsic motivation. The lines between the various kinds of motivation and engagement are seldom clear-cut when occurring in reality. It is the same with this research overview. Many studies examine various forms of motivation and engagement and others do not make much distinction between various forms. Although the studies are divided into sections, there will be some overlap.

In an effort to divide discussion of motivation and engagement into its various aspects this chapter is divided into five separate sections:

1.) Goal Theory Research Implications for Increasing Motivation and Cognitive Engagement: Students enter the classroom with pre-existing schema about themselves and the world and this effects their motivations. This research seeks to answer the question, what are the characteristics of a classroom environment which increases student engagement and motivation and how can teachers create similar environments for their students?

2.) Flow Theory and Its Implications for Increasing Motivation and Engagement. Can optimal experiences in the classroom increase motivation and

engagement for students? and if so, how can classroom teachers create more opportunities for optimal experiences?

3.) Motivation and Engagement in Diverse Classrooms. How do gender, race and culture influence what is engaging or intrinsically motivating for students? What do teachers do that increases cognitive engagement and intrinsic motivation for diverse learners?

4.) Some Current Teaching Methods and Their Effect on Engagement and Motivation. What are some methods currently being employed in classrooms which increase motivation and engagement for all students in the classroom?

Goal Theory Research Implications for Increasing Motivation and Cognitive Engagement

Goal Theory posits that students are motivated by varying levels and kinds of goals. As explained in Chapter One, students can be motivated to learn the content because the content is interesting or they enjoy the task per se (Mastery/Task Goals); or they can be motivated to do a task because they want to perform better than their peers (Performance Approach Goals) or not look bad in front of their peers (Performance Avoidance Goals). While the study of motivation focuses on student desires (or lack thereof) to accomplish a task or engage in school, student engagement is primarily concerned with student experience while participating in that task. Student engagement is multi-faceted as well. Students can be engaged cognitively, emotionally or behaviorally, all of which effect student learning and motivation in slightly different ways. Most students have some degree of all motivations and engagements.

It is worth taking a moment here to reiterate what we as adults and members of society expect of students when they are in school and how that relates to and conflicts with student motivation and engagement. When we send students off to school we do so with the expectation that they will not be disruptive in class and that they will pay attention to their educators (behavioral engagement). Most often we require students to attend school and demonstrate learning by turning in quality work and earning good grades (performance goals). Some may hope that students become immersed in their school work and even find joy in it (cognitive engagement, mastery goals, optimal experience). Sometimes we might even wish that students make a few good friends, participate in extra-curricular activities, and enjoy rich relationships with their teachers (social engagement). All of these forms of engagement and motivation are important to students and their school experience. However, it is often the more tangible and easy to document aspects of school that occupy parents and educators—grades and behavior. These things are often not what students focus on when reporting their own school experiences, however. They are more likely to report, not what they learned, but how they felt while learning, even while learning new content (McCombs and Whisler, 1997). This seems to indicate that techniques and environments that improve the personal experience students have while learning are worth our educational resources. These personal experiences are in the domain of intrinsic motivation and cognitive and social engagement. In order to determine effective strategies for increasing cognitive engagement and intrinsic motivation, it is necessary to first understand what existing goal orientations students bring to the classroom, how those orientations (nobody has only one kind) effect overall motivation.

Pintrich (2000) studied the interaction between various kinds of goal orientations. Students who have high mastery, high performance goals seek both to master the content for its own sake and to demonstrate their ability to peers or teachers. Conversely students with low mastery and low performance goals both don't want to learn the content and aren't interested in demonstrating any knowledge about it. It is possible for students to have low mastery and high performance goals, in which the student doesn't care to learn the content but still wants to impress his/her peers by performance, or high mastery, low performance goals, where the student wants to learn the content but doesn't particularly care about demonstrating his or her knowledge. Pintrich posits that it is possible, in the same class and same subject, to have more than one goal. Further, Pintrich investigated the effects of having more than one goal, and the effect on the participants' cognitive strategies and academic achievement over time.

150 junior high math students, split nearly evenly by sex, in southeastern Michigan were administered the Motivated Strategies for Learning Questionnaire during regular class time. The MSLQ was administered in three waves, at the beginning of eighth grade and the end, and then at the end of ninth grade. The students' SES was primarily working class and the sample was primarily Caucasian.

The questionnaire was a 7-point Likert type scale. The questionnaire measured both motivation and cognitive strategy. Grades were also collected in three waves in Math class. Not surprisingly, the most adaptive group (as defined by levels of self-efficacy, task value, positive affect, metacognitive strategies and academic performance) had either high mastery/high performance or high mastery/low performance group. The

researchers expectation was that students who had high mastery but low performance

goals would be the most adaptive because they would learn for learning's sake and not to

please others. However, this turned out not to be the case. There was very little

difference between high mastery/low performance and high mastery/high performance

groups or the comparison favored the high-mastery/high performance group. The two

groups were nearly equal in self-efficacy, cognitive strategy use and metacognition over

time or the comparison favored the high mastery/high performance group. (See Table

One) Differences predicted in anxiety, self-handicapping and risk taking between the

high performance/high mastery group and the high mastery/low performance group did

not materialize. It appears that a high mastery/high performance goal orientation was not

potentially harmful, at least in this environment, as presupposed by these researchers and

could offer a slight advantage, since self-efficacy and cognitive and metacognitive

Table 1. Means for self-efficacy, cognitive and metacognitive strategies over three times.

Motivation	HM/LP	HM/HP
Self-Efficacy T1	5.73*	5.90
Self-Efficacy T2	5.31	5.63
Self-Efficacy T3	4.66	5.25
Strategies		
Cognitive Strategies T1	5.35	6.1
Cognitive Strategies T2	5.32	5.70
Cognitive Strategies T3	5.04	5.54
Metacognitive Strategies T1	5.13*	5.49
Metacognitive Strategies T2	5.00*	5.14
Metacognitive Strategies T3	4.65*	5.12

*indicates significant difference between figures in rows.

strategy use decreased less over time with this combination of motivational goals. There

was no significant difference in the math grades between the two groups, however.

More in line with current understanding about goal theory, students with High Performance goals and Low mastery goals did not fare as well as participants with Mastery and High Performance goals. This group began with high self-efficacy (m=5.47), but ended with the lowest scores at the end of the third wave of testing (m=4.59), this represented the largest drop of all of the groups. When faced with challenges to their self-efficacy, they did not persist in learning. By the third wave, they were more likely to self-handicap and less likely to take risks than any other group.

It appears that high performance goal orientation is at its most disadvantageous when coupled with low mastery goals, but when students have high mastery goals in addition to high performance goals, certain indicators of motivation (self-efficacy, task value, positive affect, and academic performance) are increased or at least not affected as negatively as the scores of students with high mastery/low performance groups. It is worth noting here that cognitive or metacognitive strategies were not effected by the high performance/low mastery pattern, although cognitive and metacognitive strategies dropped for all of the groups over the course of junior high.

Grades in math were not statistically different between high mastery/high performance and high mastery/low performance groups, either at the beginning of the study (hm/lp m=7.16, hm/hp m= 7.14) or at the end of the study. (hm/lp m=6.33, hm/hp m=6.4),

A disadvantage of this study was that participants were overwhelmingly white and working class, so these findings might not be generalized over a more diverse group. However, this study did seem to demonstrate that a mastery goal orientation is associated

with positive outcomes in this demographic, coupled with a strong performance goal orientation or not. Also, Pintrich (2000) did not examine ways that teachers' influence or increase mastery or other motivational outcomes for classrooms or individuals, or the effect of the classroom environment on motivation. Knowing how to increase mastery orientation in students and classrooms is important to this paper.

Although a teacher has little influence on the pre-existing motivational tendencies her students have, she has perhaps more influence on the motivational climate of her classroom. The following studies examine the effects of classroom environment and students' perceptions of that environment on their motivational styles.

Wentzel (1989) examined the relationship between classroom goals and standards of performance and academic achievement. This study also examined whether classroom achievement was related to students' pursuit of both non-academic as well as academic goals. And the patterns that related to individual differences in classroom achievement. Classroom achievement in this study is defined mostly has higher grade point average (gpa). This study predates much of the current work on mastery vs. performance goals, but it relevant to this subject because it still examines the motivations behind various kinds of school performance, both academic and social.

Subjects were 203 adolescents from a suburban high school in the Bay area. 71% were white with the rest consisting of students from various other minority groups. Participants were divided evenly between males and females.

Study One: participants were issued a goal questionnaire in which they were asked questions referent to 12 different goals: being a successful students, earning

approval from others, having fun, being better than others in class, getting others to help you, being dependable and responsible, making and keeping friendships, being helpful to others, learning new things, understanding things, doing the very best that you can, and getting things done on time. Effort was measured by the students self-reporting on a three-point scale about the amount of effort they put into each of those goals during their class time. The questionnaire also included five questions concerning self-referent and social cognitions. For each of the 12 goals students indicated how much they wanted to achieve the goal, how well they thought they could achieve the goal, how often they had opportunities to achieve the goal and how much they thought their teachers expected them to pursue the goal. Student GPA's were then compared to the results of the questionnaire. GPA's included only academic subjects and no electives.

The relationship between GPA and self-reported efforts to achieve goals was positively and significantly related ($p<.05$) to be a successful student, be dependable and responsible, understand things, do one's very best and get things done on time. The relationship between GPA and "trying to have fun" was significantly and negatively correlated. Such goals as effort to earn approval from others, be better than others, get help from others, make or keep friendships, be helpful to others and learn new things were not significantly related to GPA. These data were divided into social responsibility goals and social interaction goals. Data was then examined in light of low, middle and high achieving groups, as defined by GPA. The lower the GPA, the more the students were concerned with social interaction goals, while the higher the GPA the students were more concerned with social responsibility goals.

Perceived ability, goal obligation, adult expectations to pursue goals, goal strength and opportunities to pursue goals were variables which were significant predictors of effort toward each of the 12 goals. The study also compared five different variables, including perceived ability, goal obligation, adult expectations to pursue goals, goal strength and opportunities to achieve goals in relation to the 12 separate goals. The most consistent predictor of effort across the 12 goals was perceived ability. Students who felt they could achieve their goals were most likely to put forth the effort to try.

One interesting fact was that the goal to "be better than others" had very low rankings in terms of all the other goals for all three groups. In the high GPA group this goal was the second to the last in ranking the goals, with 24% of the students trying to best their peers. In the middle GPA and Low GPA group this goal was ranked last, at 12% and 11% respectively. Although the study didn't measure performance approach and avoidance goals, could it be that students with middle and low GPA's had performance avoidance goals, thus avoiding competition with peers? Could it be that students with higher GPA's did have higher levels of Performance approach goals?

This study is important to this paper for a couple of reasons. It demonstrates, as well as the previous study by that usually more than one motivational goal is involved in academic achievement, and that social responsibility goals (being dependable, being responsible) could be important as well as goals relating to learning and working hard in school.

In another study which examined the underlying causes of motivation, in this case emotional engagement and motivation, Soares, Lemos and Almeida, (2005) studied a sample of 44 students, aged 11 to 14, 22 of boys, 22 of girls, selected from a larger

sample of 409 students in the north of Portugal. Of the 409 students originally sampled, the aforementioned 44 were selected because of the results of the Portugese version of the CAMI (The control, agency and Means-ends) instrument. Control in this study refers to participants' beliefs that they had control over their lives or had little control over their lives. Two groups were defined: Group One consisted of 20 low-control students, and Group two consisted of 24 high control students. The study did not give a breakdown of the sex differences between high and low control groups—or say that there was not a relationship between the sex of the student and their high and low control orientations.

Participants responded to imagined stressful situations which involved separation from an attachment figure in order to assess their attachment strategies. Their motivational strategies were similarly assessed by showing pictures of stressful classroom situations, to assess motivational strategies for students with high and low control agency beliefs and examine the relations between attachment and motivational strategies.

Because this paper is concerned with motivation rather than attachment per se, and since pre-existing attachment issues are not under the direct influence of a classroom teacher, the results of the attachment aspects of this study will be only briefly mentioned. Each participant was given the Portuguese version of the Separation Anxiety Test (SAT), where participants are asked to respond verbally to a series of pictures in which a teen is faced with the prospect of separating from his or her parents for a variety of reasons. Subjects were asked to identify potential emotions of the teens in the pictures, and to problem solve about the pending separation and its attendant emotions. 59.1% of the students presented a secure attachment strategy (identified emotions in pictures and could

problem solve about the situation) and 27.3% presented an insecure attachment strategy (could not identify or problem solve about the scenario).

To assess student motivation in stressful classroom situations, the students were interviewed in a method developed and codified by the researchers. The interviews asked students to describe the emotions and behavior of teens in various vignettes representing obstacles to students' feelings of competence and self-determination. These vignettes were adjusted to represent the typical experiences of the Portuguese students. The vignette's contained things like "although the student has the correct answer, the teacher doesn't accept it" or "the teacher has already explained the topic twice, but the student still doesn't understand." Student responses to these vignettes were used to characterize the student motivational strategies by five different dimensions: intentionality, behavior, goal-behavior coherence, adaptability and emotions. Control beliefs, whether a student felt he or she had control over the outcomes of life situations, or whether he or she felt that their lives were controlled by outward circumstances, were also assessed by response to the vignettes. Finally, the attachment strategies and motivational strategies were compared to evaluate the effect that attachment strategies have on motivational behavior.

Four motivational strategies were defined based on combinations of the five dimensions of motivational strategies (intentionality, behavior, goal-behavior coherence, adaptability and emotions). These four strategies were flexible action, rigid action, disorganized behavior and passive behavior. Passive strategy was found in 36% of the students, with 23% showing a disorganized strategy; 25% of the students reveal a flexible strategy, and 15.9% a rigid strategy.

Students whose motivational strategies were more flexible were also more cognitively and behaviorally involved. They were more reflective of the situation. They were able to find new information and re-evaluate and re-interpret the scenarios. They were also able to consider several alternatives within the context of the scenario (Soares, et al., 2005). This process reflects Kolb's learning cycle and the process by which Zull explains the brain creates new neuronal networks—the physical process of learning. (Zull, 2002). Flexible students can and usually do abide by external demands while protecting their own intentions and feelings of competence and self determination (Soares, et al.). In short, they tend to persevere more in their goals. Conversely, the students with rigid strategies actively strive for goals, but in a rigid way, without adapting their strategies to the situation at hand. They are behaviorally involved, but demonstrate "insufficient cognitive elaboration." This description of the students leads one to believe that the are not sufficiently cognitively engaged. The solutions they present are not as sensitive to the situations' cues as the other students, and they are perseverant and self-punishing. These subjects seemed to be restricted by their situations, and their own needs remained unfulfilled.

Researchers reported that students with passive strategy:

> "behave without a real goal; apparently their behavior is mechanical and repetitive, without revealing a full grasp of the situation. These students' behavior is characterized by a lack of involvement or a determination to solve the problems presented by the vignette. The study speculated that their behavior was not supported by means-ends structures."
>
> (Soares, et al., 2005, p. 136).

Students with a passive strategy seem to successfully commit themselves to activities which are more discreet and not part of a larger, more global project. (Soares, et al., 2005)

In contrast to students with either passive or flexible strategies, students with disorganized strategies were characterized by incoherence or maladaptation. Subjects with disorganized strategies tended not to finish projects, or to change activities quickly. An important characteristic of students with these strategies were the degree to which they experienced negative emotions. Many reported abruptly feeling negative emotions. These students expressed desires to be competent and autonomous, yet didn't seem to be able to must the skills and strategies to do so. Researchers speculated that their strong negative emotions had blocked their abilities to solve problems. (Soares, Lemos and Ameida, 2004).

There is a statistically meaningful relationship between motivational strategies and control beliefs in this study ($p < 0.05$). Group 2, the group characterized by high control beliefs, presented a 90.9% flexible strategy. Group 1, the group with lower control beliefs, presented 9.1% flexible strategy, but demonstrated a 71.4% rigid strategy, compared with Group 2's 28.6%. In short, subjects with a flexible strategy have high control beliefs, and the majority of the subjects with disorganized strategy show low control beliefs.

Compared with students whose attachment reflected insecurity, students with secure attachment strategies were less likely to demonstrate disorganized motivational strategies. The opposite was true of students with insecure attachment strategies.

Students with such strategies were more likely to demonstrate less flexible motivational strategies. About two thirds of flexible students reveal secure attachment strategies, and about two thirds of the disorganized students revealed insecure attachment strategies.

The study speculates that the common pattern behind attachment and motivational strategies might be involvement and support (or lack thereof) received from attachment figures. The authors speculated, but did not claim causality based upon the study, that participants who felt their relationships with caregivers were positive and secure, were more likely to deal positively with challenging or threatening situations. This security allowed students to meet their own need for competence and self-determination. The opposite seems to be true for students with insecure attachment strategies—they are more prone to disorganized motivational strategies. This study does not speculate about whether or not encouraging attachment to teachers would promote more effective attachment strategies and thus more flexible motivational strategies. This is an area for further study.

Something very interesting in this study was that flexible motivational strategies seemed to be the most effective for learning because students were able to adapt their strategies to the situation at hand. This flexibility is something that could possibly be taught in classrooms, through metacognitive teaching practice and modeling a wide range of strategies.

Although this study doesn't suggest specific classroom techniques, it illustrates some of the more effective strategies students may already have for motivation in the classroom. It would be important to find out what kinds of motivation strategies students use on an individual basis and scaffold ones that are less effective in the classroom

setting. Determining which motivational strategies students have and how students are being served or underserved by them could be important for teachers to assess at the beginning of the year. How can teachers create a classroom environment that fosters greater internal control beliefs and how will that effect student motivation? For students who have disorganized motivational strategies, what methods might help scaffold them into more flexible strategies?

Be they tangible things (stickers, school supplies, toys) or increased privileges and freedoms, rewards are a common technique for increasing motivation and engagement in classrooms. How do rewards affect the motivational and engagement climate of the classroom and the strategies of students in particular? Specifically, do tangible rewards increase intrinsic motivation and mastery orientation, as well as cognitive engagement?

One study by Cameron, Pierce, Banko and Gear (2005) assessed the impact on intrinsic motivation of rewards given during learning activities, for performance at specific levels on tests, or for both.

Participants were 119 university students in an introductory psychology course. This experiment was a two way factorial design with two levels of reward during both learning and testing: reward and no reward. Participants were randomly assigned groups in four conditions: reward during learning and testing (LTR, N=32); reward during learning and no reward during testing (LR, N=28); reward during testing and no reward during learning (TR, N=30); and no reward during learning or testing (NR, N=29). Participants were run through the experiment on an individual basis, however.

Participants were told the study was being videotaped and that the study concerned learning and problem solving. The activity used for the experiment was a Find the Difference (FTD) puzzle where participants tried to find the six differences between three cartoons. Three of the differences were relatively easy to spot, and three were more difficult.

During the learning phase of the experiment, participants worked on three sets of three FTD puzzles, for a total of nine. Participants were informed that there were six differences in each puzzle. Participants were to find three differences on each puzzle in the first set, four in the second and five in the third. They had to find the requisite amount of differences before they could move on to the next puzzle. People in the LR and LTR were given money for completing each set, $1.00 for the first, $3.00 for the second, and $6.00 for the third.

After the activity participants completed a questionnaire to rate reasons for doing the task, their perceptions of whether their motivations were internal or external, their perceptions of how well they did, and whether they felt they had a choice about doing the puzzles. LR and LTR groups also completed a question about their feelings about getting money for the activity.

In the test phase, after completing the learning phase, participants given the choice to complete a three minute test. The test was ten new FTD puzzles in a small booklet. Participants were given erroneous information about the performance of others on the same test. They were told the scores of others generally fell into three categories: fewer than 15 differences found, between 15 and 20 differences found, or more than 20

differences. Participants in the TR and LTR conditions were offered $1.00 for finding fewer than 14 differences, $3.00 for between 15 and 20, or more than 20 differences. After the tests, participants in the reward conditions were told (after the experimenter pretended to calculate their scores) that they had found 20 differences, and given an extra $5.00. Participants then completed a questionnaire measuring the same things as the one taken after the learning phase.

After the test phase was a free choice phase. The researcher told the participants he/she would have to leave the room in order to get more puzzles, but asked the person to stay until he/she returned. Participants were given more FTD puzzles, copies of *Time* and *Newsweek*, and a booklet of other puzzles (crosswords, word searches, etc.) and told they could do whatever they wanted but please wait for the researcher to return. After eight minutes the researcher returned and given a final questionnaire to assess task-interest intrinsic motivation on the FTD task and on puzzle solving generally. Time on each available task was recorded on videotapes to be used as a behavioral measure of intrinsic motivation. At the end of the study participants were debriefed and those in the no-reward groups were given $10.00.

This study sought to determine whether rewards for solving FTD problems would enhance intrinsic motivation for more general puzzle problem-solving. The study did report a significant main effect of reward in the learning phase ($p < .05$) but no significant effect of reward in testing. Participants who received rewards during the learning phase did spend more time overall on puzzle solving (Reward group M=336.8, the non-reward group M= 223.9 time in seconds).

Offering rewards did not, in this study, make a difference in the performance on the puzzles. Achievement in this task was defined as time to complete all of the puzzles and the error count. Both reward and non-reward groups achieved at about the same level. This indicates that in this experiment rewards did not have an effect on achievement.

The results of the questionnaire taken by participants upon completing the learning phase, in which they indicated their reasons for doing the task, and how they felt about it, showed some interesting findings. Students who received rewards were more likely to attribute their achievement to outside factors ($p<.05$). It appears that reward systems increase the degree to which a participant had an external locus of control.

Also, participants who received rewards for learning achievement reported greater competence than those in the non-reward groups. Rewards did not show a significant effect on internal attributions, either of interest or effort, or of decisional autonomy. In this study, giving rewards for achievement did not increase intrinsic motivations or internal locus of control, or the participant's perceptions of their autonomy. After the test phase, participants who had been rewarded during the learning phase reported lower affective autonomy than did the non-rewarded participants.

The data showed there was a significant effect of reward on participants' perceived competence during learning and testing ($p<.05$) but there was no main effect of reward during learning. Also, although during the learning phase non-rewarded participants reported slightly lower affective autonomy, the difference between the reward and non-reward group scores were extremely small (M=.13 vs. M=.53, respectively on a seven point likert-type scale.)

The results of this study are pertinent to teaching practice in relation to motivation because it is important to understand the effectiveness of rewards as a teaching technique.

It appears from this data that rewards do not increase intrinsic motivation or cognitive engagement, nor do they increase learning as defined by performance on tests. They do increase external locus of control, something considered maladaptive by other studies (Soares, et al., 2005).

In this study, the pre-existing goal orientations of participants were not assessed. It would be important to know how such concrete extrinsic rewards as cash affect people who have stronger performance or mastery goals or approach and avoidance goals.

Since it is highly unlikely teachers will be able to pay students for grades on tests, it would be important to know if other types of rewards had the same effect on participants. Cash is a unique reward because it can be transformed into many other different kinds of rewards. Would other, less tangible, rewards have the same effects as money?

In a classroom environment, what happens to students who do not solve the problem/complete the task to standard, when around them other students are doing so and getting rewarded? How does that change the dynamics of the classroom environment? It is important to note that in this study activities were carried out individually. What would happen had the same experiment been conducted with more people in the room, but the same extrinsic rewards? How would receiving cash effect those with a greater need for it and what are the ramifications of such rewards across varying cultures?

One common type of intangible reward is praise or grades. Butler (1987) studied the effect of praise and grades, as well as comments (pointing out what the teacher saw and making suggestions for further improvement) and no-response.

The hypothesis for this study was that subjects who received individual comments (versus praise or grades) would attribute the outcome of their work to factors having to do with the task itself (e.g. interest, effort and previous experience). Student who received grades or are praised for their ability will emphasize ability and competition with peers.

The sample included 200 Jewish Israeli fifth and sixth graders (106 boys and 94 girls). Students represented both high and low achievers, as defined by school grades. The study was conducted in three sessions. Students were divided into four groups according to the kind of feedback they would be given, Grades, Praise, Comments or No Feedback.

In Session One each group was given an assignment in the same way. They were given a divergent thinking task to complete and were told that the experimenters had constructed some tasks and were interested in seeing how different children performed them and that they hoped that they children would enjoy doing them and using their imagination. In the second session the assignment was returned. Group One (Comment Group) was told they were being given an appropriate comment and their performance and received comments such as "You thought of quite a few ideas, maybe it is possible to think of more." Group Two (Grade Group) was told they had been given a grade which accurately showed how they did relative to other students in the class. They

then received a numerical grade from 40 to 99. High achievers tended to get high grades, lower achievers low ones. Group Three (Praise Group) was told they were being given an appropriate comment about their performance. Feedback was the comment "very good." Group Four (No Feedback group) was told their papers were being returned and received no feedback at all.

During session two all subjects were told to look at their papers to see how they had done, were given some more tasks to do and those assignments were collected. Students in the Comments and Praise groups were told they would receive comments on the new assignments as well, students in the Grades group were told they would receive a grade, and students in the No-Feedback group were told their papers would be returned. Students completed the task and returned their papers.

In session three, on the same day as session two but three hours later, tasks were returned with the appropriate comments for each group. Students were given a few minutes to look through their tasks. They were then told there would be enough time for them to try out a few more tasks, which the experimenters would not return or evaluate. Students were given ten minutes to work freely on the tasks if they so chose, then the materials were collected. Students were given the interest and attribution questionnaires, followed by a class discussion about the experiment.

In the category of attributional patterns, where students attribute their motivations in class either to task-oriented (intrinsic/mastery motivations) or ego-oriented (extrinsic/performance motivations) factors, students who received comments as feedback scored significantly higher (5.96) than those who received grades (3.93) Praise

(4.90) or no feedback at all (3.18). Data analysis to determine attributions of effort showed that there was a significant effect for the interaction of feedback condition with motivational orientation (p<.001). Pupils in the comments group attributed success more to task-involved factors and less to ego-involved factors, over the students receiving praise or grades.

Participants who received grades or praise rated ego-involving factors as more determinative of effort than did pupils who had received comments (p<.001). This would mean that students pointed to the desire to do better than others or to avoid doing worse than others as having more influence on their efforts than the interest or the desire to master the task and improve ability.

Pupils who had received comments attributed success more to task-involved factors and less to ego-involved factors that did ones who received grades or praise (p.<.001 for both high and low achievers groups). This means that pupils who received comments pointed to their own interest in the task, their previous experience with the task and their own hard work as being determinant of their success.

After no feedback, high achievers rated ego-involved factors as more determinative of outcome than did low achievers, whereas attributions of success to task-involved causes were higher among low achievers. This might have much to do with the self-perception of high achievers that their success is due to some sort of natural ability rather, but when faced with success the typically lower achieving students tended to point to hard work, experience or interest as the reason they succeeded.

For task involvement, ratings were highest after receipt of comments (p.<.001) and there was no significant difference in ratings between receipt of grades or praise. It appears that comments increase task involvement.

In attributions for efforts, the Comments group scored highest in both the task-involved composites, the Praise group scored highest in the Ego-Involved Composites. In Contributions of Evaluation, the Comments group scored highest in the task-involved composites and the Grades group scores were highest in the ego-involved composite. The Comments groups also scored highest on perceived interest and Extra tasks requested categories. The Praise group scored highest for perceived success.

Feedback also had an effect on achievement. Comments yielded higher scores with each level of achievement for grades. Performance declined after both grades and praise, as well as the no-comment group, especially for lower-achieving students. One very interesting finding was that the low achieving students in the comments group received higher final grades than the high achieving students in most of the other groups. The scores in the high achieving Grades group were equal to the low achieving students in the comments group.

It appears that offering feedback in the form of comments, rather than praise or grades, increases task involvement and the degree to which students credit their own efforts for success or failure. Grades and praise have very similar effects, and appear to increase ego-involvement, comparisons with peers, and the perception that it is ability and not effort that creates success. Very importantly, offering comments instead of grades or praise helped increase achievement. Offering grades or praise decreased achievement

in these particular groups. Comments also increased task involvement, or the motivation to complete the task because the task is interesting or relevant, not in order to demonstrate (or avoid demonstrating) a particular level of performance.

It is important to note in this study that the students were divided into feedback groups at random, although there were high and low achievers in each group. The effect of pre-existing motivational orientations was not studied at this time. However, it seemed that students responded to whichever feedback they were given. This would suggest that teacher feedback might have similar effects on students despite students pre-existing motivational leanings.

One of the reasons why motivation and engagement are important is that students need those qualities in order to be self-starters in their academic life. One of the goals of education in general is that students will go on to use the skills and knowledge they gain in classrooms in their lives and futures.

Part of the definition of effective strategies for increasing motivation and engagement are strategies which foster self-regulated, independent learning. Radosevich, Vaidyanathan, Yeo and Radosevich, D (2004) gathered data from a study of 132 college students over a ten week period from a 90% Caucasian, large Midwestern college indicated that students with performance avoidance goals tended to revise their performance goals downward during the course of a 10-week class. Students with learning goal orientations and performance approach orientations tended to use more self-regulated learning strategies.

Students were taking introductory psychology class and completed a questionnaire to assess their goal orientation and performance goal (as indicated by a letter grade) for the class. The professor gave the students feedback in the form of grades on a multiple choice exam taken at two week intervals. Each exam was worth 20% of the students overall grade for the course. Students also completed bi-weekly progress questionnaires to report their performance on the exam and their future performance goals for the two-week period (also in letter grades). All of this was done anonymously, with students using fictitious names and turning in their surveys in a drop box. The discrepancy between actual performance (points were given for letter grades A=11 to E=0.0) and their performance goal became their GPD (Goal performance discrepancy score). A positive score meant the students had a higher grade than their goal, a negative score was the opposite. Goal revision was also quantified in this study as the difference between students' goals for two week period as opposed to their goals for the next period. Researchers wanted to know what effect feedback has on goal revision, whether students who face negative feedback are inclined to revise their goals downward.

Cognitive self regulation was assessed using a subscale from Motivated Strategies for Learning Questionnaire developed by Pintrich and DeGroot in 1990. Students also answered a questionnaire about resource allocation—how much time and effort they put in to achieving their performance goals. High school GPA was also used as data in this study, since all students were incoming freshman and that information was available.

46.3% of students involved in the study revised their performance goals during the study, 25.2% downward, and 21.1% upward). This means that nearly half of the students revised their goals in the face of feedback, this case in the form of grades.

This is interesting in light of the findings of Butler (1987) which demonstrated that students tend to achieve more when given comments versus grades as feedback. It would be illuminating to see what sort of goal revisions students made when given comments, rather than grades, as feedback. These findings also relate to the study by Soares, Lemos and Almeida (2005) which found that one of the characteristics of students with more effective motivational strategies was that their motivational strategies were flexible. Perhaps this indicates that being willing to revise one's goal is a sign of adaptability and self-regulated learning, regardless of whether one accomplished the aforementioned goal or not.

Radosevich, et al. (2004) found that having learning goal orientations positively correlated with higher levels of cognitive self regulation ($p < .01$) and resource allocation ($p < .05$). Having performance goal orientation was not correlated with either self-regulation or resource allocation in this case.

When scores for learning goal orientation were high and students goal performance discrepancy was high, they tended to revise their goals more, exhibiting less goal persistence. In fact, in the face of a poor score on a test, students with high learning goal orientation revised their goals down farther than students with lower goal orientation. As favorable feedback increased, however, or failure degree lessened, students with high LGO again revised their goals upward higher than those with lower

LGO. This seems to indicate that the performance goals of students with high LGO are more variable and subject to either upward or downward movement at a greater range than those students with low LGO, when there is also a strong performance goal in play. This could have much to do with student's ability to be flexible in the face of feedback as mentioned above. Students with low LGO tended to set and keep their goals lower. This could be evidence or rigid goal setting behavior identified by Soares, Almeida and Lemos (2005) as being a less effective motivational strategy.

Learning goal orientations had positive relationships with resource allocation (time, effort spent on studies) (r=.22, p<.01) and cognitive self-regulation (r=.47, p<.01). Also, low learning goal orientation individuals tended to revise their goals less than students with high learning goal orientations. Participants with high performance avoidance goals did not raise their goals as high as low performance avoidance goal orientations students did when given positive feedback.

While high LGO students tended to respond to moderate failure by setting more demanding and challenging goals, low LGO students in the face of extreme failure tended to use higher goals and more persistence to guide motivational processes over the course of the study than did higher LGO students. This was contrary to the expectations of researchers. This is also possible evidence that students with learning goal orientations are more persistent than those with performance goal orientations.

Another finding in the study was that students with high performance avoidance goal orientations adopted strategies whose aim was to manage evaluative perceptions instead of improve performance. Frequently students with high PVGO tended to revise

goals downward, both in the face of negative feedback, and sometimes even in the face of positive feedback.

This study emphasized once again the importance of having, and helping students to acquire, mastery goals and a repertory of motivational and cognitive strategies. The study did not elucidate what techniques would assist students in acquiring these outcomes. One might speculate that in light of previous research (Butler, 1987) it would be effective to use comments, rather than grades or other evaluative means of feedback, in order to increase mastery goals. Also, this study seemed to treat goal revisions as an ineffective strategy, while other research (Soares, et al., 2005) indicates that flexibility of strategies and goals can be adaptive.

Another study by Zimmerman and Martinez-Pons (1990) sought to find the relationships between efficacy perceptions and students use of self-regulated learning strategies. From one gifted public school and three regular public schools, participants numbered 30 students from each school in fifth, eighth and eleventh grades. The sample included a diverse population, according to the authors, but due to school regulations, no precise figures on SES or ethnicity were recorded.

The study used two different measurements, one for learning strategy, and one for self-efficacy beliefs in both verbal ability and math. In the first measurement, entitled Self-Regulated Learning Interview Schedule, eight different learning contexts were described to the participants, and they were questioned about what strategies they would use in a similar circumstance. Their responses were recorded verbatim. The categories the questionnaire sought to gather data about were : self-evaluating; organizing and

transforming; goal setting and planning; seeking information; keeping records and monitoring; environmental structuring; self-consequating; rehearsing and memorizing, seeking peer teacher or adult assistance; and reviewing texts, notes and tests. Students were then administered the Student Academic Efficacy Scales for data on their academic self-efficacy in math and verbal ability. In this instrument, students were presented with either a vocabulary word or a math problem and given ten seconds to examine it and then rate their confidence level in defining the word or solving the math problem.

The data show that students' perceptions of self-efficacy were correlated with their use of self-regulated learning strategies for both the gifted and the regular students.(r=.41, and r=.42, respectively. p.<01 for both math and verbal scores). In both verbal and math categories, efficacy was negatively correlated with seeking adult assistance (r=-.16). Overall, self-efficacy in verbal skills and mathematics rose across the board from fifth to eighth to 11^h grade. For example, male students in regular classrooms' mean self-efficacy scores rose from 610, 653, to 710, in math and in verbal skill from 533, to 539, to598, in fifth, eighth and eleventh grades, respectively. Females in regular classrooms scores rose from 541, 576 to 758 in math and in verbal skills from 433, 492 to 619 in fifth to eighth to eleventh grades, respectively. Verbal skill in all groups tended to have a jump, occurring between eighth and eleventh grade for regular students and from fifth to eighth grade for gifted students.

The researchers of this study pointed out that perceptions of self efficacy were on the rise at the same time that students' perceptions of academic competence has traditionally declined (Beneson andDweck, 1986; Nichols and Utesch, 1978; Stipek,

1981 as quoted in Zimmerman and Martinez-Pons, 1990). The researchers speculated that this was because academic competence measures tended to examine students' feelings about their abilities in comparison with their peers. Self-efficacy perception measures examined students' feelings about their abilities apart from their peers. This may have indicated that students recognized they were learning and progressing in knowledge and ability, even if they felt that they didn't measure up to their peers. Given this dichotomy, one learning strategy that might be effective could be reflection on student's own learning and accomplishments. Perhaps this could be effective in resolving or mitigating students' perceptions that they are not progressing as fast as their peers. Teaching learning strategies directly could also be effective in increasing students' abilities to use self-directed learning.

Also interesting in this study was the drop in reliance on adult help as students progressed in age, particularly between eighth and eleventh grades, but an increase in reliance on assistance from teachers. This could reflect increasing independence from parents or reflect the increasing difficulty and specialization of school work.

The authors recommended that, in view of the increase during junior high of self-efficacy at the same time academic competence is declining, it may be more effective for teachers to utilize classroom techniques and assessments that are more mastery oriented and less comparative.

It appears that students are responsive to teacher feedback, and that feedback in the form of comments vs. praise or grades is the most effective for increasing motivation and task involvement vs. ego involvement. It may also be adaptive to have multiple

goals, specifically high mastery orientation and high performance orientation instead of just one particular orientation. (Pintrich, 2000). Adolescent students have a need to learn strategy use and function in an environment that does not emphasize competition, in order to improve their self-efficacy, which is associated with high motivation and engagement. (Zimmerman and Martinez-Pons, 1990.) More flexible motivational strategies and effective strategy use has also been associated with attachment. (Soares, et al., 2005). This might implicate that emotional engagement in the classroom could lead to more effective pro mastery motivational strategies for students, although none of these studies here examined that in particular. Mastery goal orientation is also associated with increased strategy use (Radosevich, et al., 2004). Teacher feedback and rewards for student achievement also influence goal orientation and intrinsic motivation. Traditionally praise and rewards have been common classroom techniques for increasing motivation. Although there has been some evidence to suggest that, at least in a laboratory setting, rewards increase task interest, the study examined here did not take into account the effect of rewards as part of a larger classroom environment (Cameron, et al., 2005). Praise and Grades tended to be associated with a decrease in mastery learning, while non-judgemental comments were associated with increases in task involvement, self-efficacy and the degree to which participants credited their own efforts for their success or failure. (Butler, 1987).

Classroom motivation and engagement seldom occur in a vacuum. Students react to situations and the culture of their classroom in matters of goal orientation, intrinsic vs. extrinsic motivation and engagement. The studies below examine the effects of

perceived classroom goal structures on the motivation and engagement of the students in them. Some of the studies demonstrated that teachers could influence the goal orientations of their classrooms, which in turn influences the goal orientations of their students.

One study that explored how students' perception of Mastery or Performance goals influenced student motivation and engagement, as well as classroom achievement in Mathematics was conducted by Wolters (2004). In order to understand how different components of achievement goal theory are related to each other and to students' motivation, cognitive engagement and achievement in mathematics, Wolters (2004) investigated 525 math students in seventh and eight grades from two suburban jr. high schools. Participants completed a seven point likert-type self-report survey. The mean age of the participants was 13.2 years. 52% were boys and were 48% girls. 69% of the participants were White, 14% Hispanic,.4% African American and 4% Asian, less than 1% Native American, the rest describing themselves by other ethnicities. The questions on the survey measured Classroom goal structures as well as the personal goal orientations of the students. Classroom goal structures were divided into Mastery and Performance structures. Performance Structures are environments in which the students perceive that classroom emphasis is on demonstrating knowledge publicly, while in Mastery Structures students perceive that the classroom environment emphasizes doing one's best and learning for learning's sake—mastering the content. Students' goal orientations were divided into Mastery approach (learning to master content) Mastery avoidance (learning to avoid not mastering content) Performance approach (learning to demonstrate knowledge publicly) and Performance avoidance (Learning to avoid the

appearance of not being able to demonstrate knowledge). Results of the survey's were analyzed to shed light on students' motivation, cognition and achievement in relation to their goal orientations and the goal orientations of their classrooms.

There was a positive correlation between mastery and performance –approach structures and mastery and performance goal orientations, respectively. Mastery orientation was positively related to performance approach ($r=.15$ $p<.01$) and related negatively to performance avoidance ($r=-.24$ $p<.01$). There was also a correlation between the goal structures of the classroom and the students' personal motivational goals. Students' perceptions that their classrooms had a mastery structure appeared to be tied to their own mastery approach goals, and decreased the likelihood they would adopt a performance avoidance orientation and were correlated with greater self-efficacy. Mastery structures and orientations also seemed to be correlated with students motivational engagement. Students in classrooms they perceived to be Mastery structured were more likely to report that they did not procrastinate starting their math work, and reported putting more effort into their math work. They also reported more persistence under adverse conditions. Conversely, students with performance avoidance goals were more likely to procrastinate, and give up in the face of difficulty. Mastery structures in the classroom and personal Mastery approach goal orientations were also positively correlated with students' use of more metacognitive strategies. ($r=.39$ and $r=.53$, respectively and both $p < .01$).

Mastery structures and Mastery goals were also positive predictors of student achievement as defined by grades. ($r=.17$ and $r=.34$ respectively, both $p<.01$). The

authors of the study report that most previous research has not demonstrated a positive relationship between gpa/grades and mastery orientation of either students or perceived mastery structure in the classroom. In this study achievement was defined the grades in this specific math class (not gpa) and a state-wide standardized test of math concepts, operations and problem solving. Results in this particular study were that, even when students' prior standardized achievement was accounted for, mastery structure positively predicted students' grade in their mathematics class (r=.14, p<.01).

Conversely, Performance structures and performance avoidance were predictors of less metacognitive strategies and less student achievement. Students who perceived their classroom to have an emphasis on performance goals were more likely to adopt performance avoidance goals for themselves.

This study does not hypothesize about *how* teachers influence the goal orientation structure of their classrooms, or students' perceptions of goal orientation. Also, the study was self-report only, specifically because it was concerned with the perceptions of the respondents. However, more accurate evaluations of student achievement by including observer and teacher analysis as well as self-reports, would have added to the study's validity.

This study is relevant to an examination of motivation and engagement in two ways. First, it appears that students' goal orientations are associated with their perception of the goal orientation structure of the classroom. It also appears that helping students to adopt a mastery goal orientation by fostering a mastery structure in the

classroom could be an effective strategy for increasing student achievement and increasing the use of cognitive and metacognitive strategies.

One study which attempted to shed light on the possible shaping effect of the classroom motivational climate on goal orientations of the students was a study of 112 male and 50 female college students taking various physical education classes. Gano-Overway and Ewing (2004) studied the shaping effect that a task-oriented or ego-oriented environment had on the task or ego orientations of the participants. The principal investigator observed that all of the classes had elements of both ego and task oriented climates. Participants completed questionnaires at the beginning, middle and end of the 16 week course. The first questionnaire included demographic info and measures of dispositional goal orientation and strategy use. The second one assessed participants dispositional goal orientations and the third one, at the end of the semester, asked them to assess both the motivational climate of their class and reported on their dispositional goal orientations and practice strategies. Based on the questionnaire results, participants were classified into groups described as compatible (goal orientation and perceived classroom climate were the same) and non/compatible (goal orientation and perceived classroom climate were different).

It is important to note that this study measured students' *perceptions* of their motivational climates—although elements of both ends of the goal orientation continuum were observed in the classrooms, classes were not selected for their particular climate. It was the perception that students had in relation to their own orientations that was of interest to these researchers.

This study showed that the goal orientations were only correlated with the perceptions of the motivational climates at low or moderate levels (r = .24-.38, p.>.001). So this would mean that student's tendency to see things through the lens of their own goal orientation was limited, so perhaps their perception of the goal orientation of their classroom was at least somewhat accurate.

The study found that an ego involving climate was positively related to an increase in ego orientation and a task involving climate was positively related to a task orientation. So, perceived motivational climate was related to changes in goal orientation. Also, the correspondence between one's goal orientation and the classroom climate increased over time.

These classes met only two and a half hours per week (twice a week for 1.25 hrs) and yet there was significant influence on the effects of goal orientation by the classroom climate. This suggests that, at least in the class involved, classroom environments shaped the goal orientations of their students somewhat. The study was not specific about what, if anything, the teachers themselves did that contributed to a particular motivational climate. Also, because of the small numbers of the study in only one location and the lack of a truly diverse demographic, this study may not be applicable to all students. Still, the results such as they are do suggest students may be influenced by the motivational climates of their classrooms.

Does social caring and emotional engagement effect motivation and more subtly, academic achievement? Also, what are the significant relationships between teaching dimensions and school adjustment, does the emotional timbre of the classroom effect

motivation and mastery orientation? Wentzel (2002) sought to know if some of the characteristics of effective caregiving, when evident in classroom environments, had positive motivational effects on the students in those classrooms. One of those effects examined in the study was motivation. The author explored the extent to which students' goals and interests effect the connections between aspects of teaching, social behavior and achievement.

This study involved sixth grade students and teachers in two suburban middle schools in a mid-Atlantic state. School A had a predominantly Caucasian student body (87%) with 6% African American, and 7% other ethnicities. SES status was varied, with 9% receiving free and reduced school lunches. Eight teachers also participated from school A, all were Caucasian. 230 students participated from School A.

School B had a predominantly African American student body, 6% Caucasian and 2% other ethnic status. 34% of the students received free and reduced school lunches at school B. Teachers at school B consisted of nine Caucasian female teachers and one African American Male teacher. Sexes of student participants from both schools were close to evenly divided. Two hundred and twenty two students participated from School B.

The study was conducted during the last half of the last semester of the school year. Students filled out a set of questionnaires during one class period. The questionnaires were designed to assess social goal pursuit by asking how often they tried to achieve pro-social and responsible outcomes, the students answered the questions on a six-point Likert type scale.

Teaching data was also gathered from students through Likert-type questionnaires. Questionnaires completed by students about their classroom teachers were based on Baumrind's parenting dimensions, which included control, maturity demands, democratic communication, and nurturance. The authors of the study stated that students' perceptions of their teachers, rather than objective observations of specific teaching techniques by researchers, were the object of this study. Academic achievement was defined by classroom grades.

Four motivation outcomes for students were significantly and positively related to teacher qualities. Teacher high expectations were significantly ($p<.001$) related to all four motivational outcomes in the study, student interest in class ($r=.49$), mastery orientation ($r=.31$), perceptions of fairness ($r=.30$), and pro-social goal pursuit ($r=.32$).

Negative feedback was significantly ($p<.001$ for all) and negatively correlated with pro-social goal pursuit ($r=-.018$), responsibility goal pursuit ($r=-.30$), interest in class ($r=-.30$) and mastery orientation ($r=-.-31$). It is important to note that negative feedback was as perceived by the students. This further underlines the importance of effective feedback in association with creating mastery goals in students.

The data in this study support the idea that teachers can influence their students' motivational outcomes by effective and fair teaching techniques.

The researchers reported that there was no significant difference among students of diverse ethnicities in how they perceived their teachers in the criteria assessed by this study. However, all of the teachers who participated in this study, (18) save one, were

European American. A larger, more diverse sample would have been helpful to shed light on how teachers of various ethnicities are perceived in relation to the teaching dimensions assessed here.

Another study of student perceptions of classroom structures and their relationship to motivation was conducted by Greene, et al. (2004). The authors asked whether or not students' perceptions of classroom structures influenced their perceptions that coursework was relevant to students' achievement goals both in the current class and in the future. They also studied the effect of classroom structures on self-efficacy. Classroom structures measured were tasks, autonomy support, mastery and evaluation. This study used an interactive model to show how various aspects of motivation and engagement interact to produce academic achievement.

The variables in this study were classroom environment (including motivating tasks, autonomy support, and mastery evaluations), self-efficacy, relevance, mastery goals and strategy use. Motivating tasks means students' perceptions that a task is interesting, autonomy support means the perception that a teacher wants her students to take responsibility for their learning. Perceived instrumentality means that the assignment or content will help the student become who he or she wants to be in life. Mastery evaluation, another dependent variable, signifies that the teacher issues grades and test scores in a way that keeps them private.

The participants in this study were 220 high school students, all volunteers, from a suburban Midwestern high school. The sample was taken from three different English classes taught by three different teachers. The racial makeup of the student body was 67% Caucasian, 16% Native American, 8% Asian American, 5% African American and

4% Hispanic, however, the authors of the study do not say what the racial makeup of the sample was.

The students in the study completed various questionnaires: A 38-item Survey of Classroom Goals Structures, A seven-item, four-point scale measuring students' self-efficacy in their current class, and a 26-item Approaches to Learning questionnaire. These questionnaire's were designed to measure students' perceptions of classroom goals, self-efficacy, and mastery, performance, perceived instrumentality, and cognitive strategies used in studying. Also used to measure achievement were percentage grades earned in the English class where the data were taken.

Scores in the class were significantly and positively predicted by self-efficacy and strategy use, self-efficacy was in turn predicted by autonomy support and mastery evaluation (p.<.05 for all). However, motivating tasks were not a predictor of self-efficacy. Many variables predicted mastery goals, including relevance, motivating tasks and self efficacy (p.<.05 for all). Autonomy support was not linked significantly with mastery goals.

The only significant predictor of performance approach goals was self-efficacy (p,<.05). The authors reported that they had expected a negative relationship from mastery evaluations to performance-approach –meaning that more mastery evaluations would lead to less of a performance goal orientation in students, but there was no significant relationship. Also, strategy use was predicted by self-efficacy, mastery goals and relevance (p.<.05).

The study data support the finding that students' perceptions of the classroom climate is associated with many positive outcomes, high self-efficacy, high mastery goals

and relevance of classwork to students' future plans. Findings also supported the hypothesis that students' perceptions of classwork as meaningful, relevant and interesting also influence students' perception that classwork is meaningful to their future. (Greene, et al.).

Students' perceptions of the degree to which their teachers supported their autonomous learning were positively related to strategy use, mastery goals, self-efficacy, perceived relevance to students' future, and grades.

The authors also pointed out that difference facets of the classroom environment are related to different facets of motivation and engagement, for example: students who perceived their classroom as supporting autonomy and mastery-oriented evaluation (vs. competitive evaluation), reported higher levels of self-efficacy. Students who perceived classwork as meaningful and motivating, reported more mastery goals and the perception that the classwork was relevant to their futures.

The authors did point out that, contrary to expectations, perceptions of autonomy and mastery evaluations did not predict mastery goals with the students themselves. It could be possible that this was because, in the case of mastery goals, this simply meant that evaluations (grades, test scores) were kept private. This variable may have been correlated differently if the feedback were measured more objectively, and been given in the form of comments. Only grades, not various kinds of feedback such as comments, were evaluated in this study. Butler (1987) also mentioned in this paper, demonstrated that teacher feedback can effect mastery goals.

Self-efficacy and meaningful strategy use were the only variables shown to be effecting achievement directly. Performance approach goals were not related to achievement or meaningful strategy use.

This study provided many ideas for effective strategy, or at least for what the aims of effective strategies should be. Students' perceptions of the classroom environment, specifically as supporting mastery evaluation and autonomy, were important to their academic achievement. Relevance of coursework to students' future goals would be another effective strategy for improving motivation and engagement, as well as achievement.

Greene, et. al. (2004) observed that helping motivate students to do coursework they may not find intrinsically motivating would be made easier by helping them perceive the relevance of that coursework to their future. They point out that "trying to convince students to adopt mastery goals when they lack interest in the task and cannot see its utility for the future is a hopeless venture." (Greene, et al, 2004, p.476).

In addition to emphasizing the importance of teaching techniques which increase self-efficacy and mastery goals in students, Greene, et al. underlined the importance of students' own perceptions that the coursework is meaningful to themselves and their future.

Previously research into Achievement Goals was based on a mastery goals vs. performance goals dichotomy. More recent research has explored the concept of approach versus avoidance motivations as well. Essentially, these approach vs. avoidance motivations reflect whether someone is more motivated to strive for a positive possibility or avoid a negative possibility, respectively. (Elliot, Shell, Henry, and Maier, 2005).

Elliot et. al. (2005) sought to study how students behaved in situations where they were given performance or mastery goals, as well as performance avoidance and performance approach goals, what the authors called a "trichotomous" model of goal theory (Elliot et al., 2005).

This research included two different experiments—Experiment 1A participants were 101 (M=57, F=44) public high school students in Germany who volunteered to particiapate—no extra incentive was given. Experiment 1B participants were 36 (M=15, F=21) public high school student in Germany. Experiment two participants were 61 (M-22 and F=39) U.S. College students in an introductory level psychology glass who voluntarily participated in the experiment for on extra course credit. Study two sought to replicate the findings of study one and to throw in the added variable of a contingency.

Students were asked to complete a short activity in a packet taken from an intelligence test. In Experiment 1A the activity was involved the completion of ordered number sequences and in Experiment 1B it was from a part of the intelligence test that measured verbal ability. In Experiment two the activity was a word game activity similar to the game of Scrabble. In E1 the participants participated in groups and in E2 they worked one-on-one with the experimenter. All of the participants were also given instructions that manipulated their goal orientations and this was confirmed within the experiment by a multiple choice question at the end in which the participants were asked to identify the goal of their task. The findings indicated that the participants were aware of their goals. ($p<.01$) The students were given different version of the purpose of the test, for example "The purpose of this study is to compare high school students with one another in their ability to solve these problems" Achievement motivation. "Previous

work had indicated most high school students were fairly comparable in their ability to solve the problems but some students stand out because they do exceptionally well" (Performance Approach) or that some do exceptionally poorly (Performance Avoidance). Finally a class was given the instruction to "Get to know these problems and learn how to solve them well" (Mastery Approach) Each of the experiments followed this model regardless of content of the activity. However, in the second study, as a contingency, students were given extra credit for completing the experiment and the opportunity to earn even more extra credit by performing their task according to the goal laid down by the experiments authors. (Achievement Goal, Performance Approach, Performance avoidance or Mastery).

In study 1A performance-avoidance goal participants (M=5.82) performed worse than did performance –approach goal participants (M=7.12. p<.05) and mastery goal partipants (M=7.22 p<.05). There was no difference between performance approach and mastery goal participants. Study 1B essentially confirmed the results of the first study with similar results, confirming the author's hypotheses.

In the second experiment, the authors added the contingency of a possible reward of five extra points if they completed the puzzle task "well enough." Well enough was defined in terms of the participant's goal: For example in the performance approach condition participants were informed that if they were 'exceptional' i.e. better than others in their group, they would receive three extra credit points for doing the initial eight minute task and have an opportunity to do it again for more extra credit. Performance avoidance groups were told that if they were not one of the poorer problem-solvers, they would get the extra credit points. The mastery goal group were told if they 'mastered the

task' they would be given the points, and the non-contingent group were simply given the points after both sections of the task were finished.

In Experiment 2, the presence of the contingency had little effect on the impact of mastery goals on performance, (M-118.10 in contingency M-122.04 in non-contingency experiment) but the contingency further accentuated the effects of the performance approach and performance avoidance goals on performance (Performance Approach =177.04 in contingency and 115.64 in non-contingency, Performance avoidance 68.31 in Contingent and 93.71 in non-contingent). Essentially, if participants wanted to demonstrate their performance ability compared to their peers, their performance was enhanced by a performance goal approach, if they did not want to look less able to perform than their peers, their performance was negatively affected by a performance goal approach. Mastery goals had little effect on performance with or without contingencies.

The study didn't measure participants' proclivities toward performance/mastery or approach/avoidance before coming into the study. This was intentional but it would be useful to know if students generally have one approach to life over another and what effects this has on their achievement abilities and levels.

These studies are unique because, as previously mentioned, the task goals for participants in this study were influenced by the experimenters by the way in which the task was presented. Participants were explicitly told whether their goal was to compete with others, or learn the task, or were not given a goal, in the case of the non-contingency

control group.   For teachers, this offers understanding into how to present activities in order to influence students' motivations.

Another study weighing in on the effects of experimenter influence on Mastery motivation versus Performance oriented motivation is a study by Bergin, (1995). This study focused directly on the competitive aspects of performance approach goals.

51 pre-service teacher-education students enrolled in two undergraduate education classes voluntarily participated in the study. The sample included seven males and 44 females. Participants were randomly assigned to either a competitive situation (N=25) or a mastery situation (N=26). In order to create a mastery orientation situation the teacher read a statement saying that participants would be reading this text as part of a study investigating how college students learn from text. They were told the information contained in the text would help them in their teaching, and that they would help explain it to another person. They were asked to read the text "as though (they) were really trying to learn that material so (they) could use it." In order to create a performance/competitive orientation situation the teacher read a statement saying that participants would be reading this text as part of a study investigating how college students learn from text. They were then told that they would be ranked from best to worst on their ability to remember information from the test. They were also asked to study the material "as though you were trying to beat all the other students in the class."   Students in both classes were told that they would be asked a series of questions about the text in two days. The assessment was a free-recall task and a multiple choice test.

Participants in both contexts were then given a 978 word passage to read relevant to their coursework. After the reading, both groups rated their enjoyment of the passage, the degree of learning strategies they employed, and whether or not they had adopted the goal as instructed. They also reported their GPA. Each group was also divided into separate groups according to self-reported GPA, with the lower ability group (ability being defined by GPA) having a GPA of 3.0 or lower, the higher ability group having a GPA of 3.0 or higher.

Data showed that students were more interested in the text in the mastery situation than in the competition situation. (P.<.05). This could mean that in mastery situations students are more likely to be interested in the material.

Most students did not adopt the performance/competitive goal, even in the performance environment. Out of 26 participants in the Mastery Group, 22 claimed a mastery goal, two reported they wanted to "just get it done" and two wanted to "do better than others." Of 25 participants in the performance/competitive group, only five reported they wanted to "do better than others" despite being directly instructed to have that goal. One person reported wanting to "just get it done" and the rest, 19, claimed a mastery goal by saying their motivation was to "learn the material."

Mastery students reported greater average enjoyment of the reading passage than the competitive students did. High ability students scored equally well on the test in either situation, but lower ability students did better in the mastery oriented class. In this experiment, low GPA students did as well as high GPA students in the mastery situation.

Although this study lends support to the idea that mastery learning environments are more effective at helping students learn and even correlate with higher performance on tests, the study is not generalizable for several reasons. The sample was from college students who were no information about their ethnicities or SES status' was made available in the research, so these results may not carry across a diverse range of people. The fact that most students did not endorse a performance goal even when asked to do so was interesting.

This study supports the strategy of supporting mastery orientation in classrooms in order to increase test scores. In today's climate of increasingly high stakes testing it is important to continue to promote a classroom environment where learning is valued for its own sake.

Mastery orientation seems to be the lynchpin of an effective motivational strategy. In every case which I could find, it was associated with positive motivational outcomes. Students with mastery (or learning) goal orientations were more likely to have flexible goal strategies (Elliot et al., 2005). In other words, students were able to adapt their goals to meet the challenges of the task at hand, making them more resilient in the face of challenge. Mastery orientation was also associated with more cognitive and metacognitive strategy use and more self-regulated learning (Radosevich et al., 2004). Self efficacy seemed to promote increased mastery orientation and self-regulated learning as well (Zimmerman and Martinez-Pons, 1990).

Students perceptions of and agreement with the motivational goals in their classrooms are associated with the students motivational goals in the class. In other words, if students feel they will not be punished for trying no strategies, that their

learning styles are supported by the teacher and other in their learning environments, they are more likely to try out those strategies (Greene, 2004; Elliot et al, 2005).

Teachers influence self-efficacy and mastery orientation in a variety of ways. Teacher's use of non-judgmental comments as feedback (Butler, 1987) and the promotion of a mastery environment in their classrooms by encouraging learning for it's own sake (Greene, 2004) are two effective ways in which teachers can improve student's intrinsic motivational patterns.

Flow Theory and Its Implications for Increasing Motivation and Engagement

Although the phenomenon of Flow, as described in Chapter One of this paper, has various positive associations, it is operationally defined as a point when skills meet challenge at optimum levels (Csikszentmihalyi and Csikszentmihalyi, 1988). High skill, but low challenge, results in relaxation, low skill and high challenge in anxiety. Low skills and low challenge in apathy. (See Figure 1.1, Chapter One.) High skill and high challenge is necessary for flow to occur, although other phenomena, such as pleasure, are associated with flow states as well. Flow is intrinsically motivating and is therefore important to persistence in an activity. There have been many flow studies about many different activities, since it is a phenomenon that appears across most human experience and in every culture studied so far (Csikszentmihalyi and Csikszentmihalyi, 1988). However the phenomenon is just beginning to be studied in schools in relation to student engagement and motivation.

This body of study is called "Optimal Experience." (Csikszentmihalyi and Csikszentmihalyi, 1988). The study of Optimal Experience includes student interest and enjoyment as well as challenge and motivation.

One study sought to answer how feelings of boredom or anxiety contribute to continued participation in an activity in the future. (Rathunde and Csiszentmihalyi, 1993). What Rathunde and Csiszentmihalyi mean by undivided interest is a situation where the students interest in the work being accomplished is highly spontaneous *and* highly directed. When a student is both intrinsically motivated and interested in an activity, there is high spontaneity. This is a common characteristic of play. When a student is focused on the outcome of an activity, he or she is highly directed. When a student is participating in an activity which is both highly directed and highly spontaneous, he or she has undivided interest. This condition is also characteristic of flow, or Optimal Experience. Flow, or Optimal Experience, as defined in Chapter One of this paper, are both associated with high spontaneity and high direction. When interest is divided so that there is high spontaneity but low direction, the student is just goofing around or, as Dewey put it "Fooling" (Rathunde and Csiszentmihalyi, 1993). When a student is working under conditions of low spontaneity but high direction he or she is experiencing drudgery. The researchers didn't explain what happens when there is low direction and low spontaneity but one might guess the answer: not much. It can probably be reasonably assumed here that students were not interested much in a task and were not motivated by a particular outcome (direction) would probably not complete the task. In this study interest in the low spontaneity/low direction category was classified as "disinterest." In other works Csikszentmihalyi has described how boredom/disinterest

(low interest and low direction) result in the seeking for more challenge, although perhaps not within the same activity. (Csikszentmihaly and Csikszentmihalyi, 1998). (See Table Two)

Data for this study is taken from a four year longitudinal study. Rathunde and Csiszentmihalyi, (2005) studied 208 boys and girls from two middle-class suburban high schools in Chicago. SES and ethnic data were not available to the researchers. All of the students involved were nominated by their teachers for having a talent in a particular discipline in school: either math, science, music, sports or art. Some students were nominated for more than one discipline. To qualify for the study students needed to be involved in an extra-curricular activity related to their talent (e.g. orchestra, sports teams, AP classes, etc.). Standardized testing was used to confirm the teacher's assertions that the participants were indeed above average.

In the first year of the study, ninth grade students were trained in Experience Sampling Method (ESM) as explained in Chapter One of this paper. Participants received beeps 7-9 times per day from 7:00 am to 10:00 pm. When the beeps sounded off they answered open-ended and scaled items in a booklet developed for that purpose. This continued for one week. Three years later, before the students graduated, they participated in the ESM again.

Both spontaneous interest and goal directed interest were measured for this study. These aspects of interest were assessed in the following way: an average score for each interest variable was computed based upon all student responses during talent-related activities. These means were used to categorize individual student responses as high or

low compared to the mean. Then each signal was put into one of four quadrants: a) high spontaneous/high directed (score was above the mean on both variables) b) high spontaneous/low directed c) low spontaneous/high directed and d) low spontaneous/low directed. Each student's talent-related signals were aggregated, giving a percentage score for each of the four quadrants. Thus, if a particular student talented in art responded to four talent-related signals while in art class, with one in each quadrant, the percentage would equal 25%.

The percentage of talent-related signals of each student that fell into the high High Spontaneity/High Directed quadrant was used as a measure of the students' "undivided interest."

The results showed that having a personality oriented toward achievement was associated with higher mastery levels (p.<.01) and with greater subjective engagement (p.<.01). Undivided interest was positively correlated with mastery level (p<.01), teacher ratings, (p<.05), and subjective engagement (p<.01). Regardless of measured from the point of view of the school, the teacher or the student, undivided interest was positively correlated with talent area performance.

One group of analyses in this study contrasted students who were most engaged in the process of talent development at the end of high school with those who were or had become more disengaged. Results demonstrated that engaged students reported significantly higher spontaneous interest and directed interest. Students more deeply involved in their areas at the time of graduating had been feeling more open/involved/excited while working in their areas 2-3 years earlier. Results also showed

that the two types of interest (Spontaneous and Directed) were more highly correlated with these students who were more committed to their talents.

The students could be divided in the final year of the study into a group who continued to be highly involved in their area of talent and a group that had become disengaged from their previous talent. Students who were engaged in the final year of the study in their talent reported over twice the amount of undivided interest three years earlier than did the disengaged students (p.<.0005). The authors reported that undivided interest characterized their talent activities over 50% of the time and was their predominant mode of operation. In contrast, the primary mode of talent engagement for the disengaged students was disinterest, which characterized their talent work over 30% of the time." (Rathunde and Csikszentmihalyi, 1993). Also, students who later become disengaged demonstrated higher amounts of divided interest in year one, with more of their pager signals occurring in the high spontaneous/low directed quadrant (P<.05) and more of them appeared in the low spontaneous/high directed quadrant (p<.05). Students who later became disengaged also showed, perhaps not surprisingly, more disinterest in their talent work (p.<.05).

This study reported that undivided interest was an important factor in a students' continuing to be engaged in their talent years later. It appears that it may be important for students to have experiences which create that optimal experience in whatever content area they are studying. It appears that having undivided interest in a subject contributes to continued learning in that subject, and creating lifelong learners is an important objective of education. However, aside from saying that students need an optimal level

of direction and spontaneity in order to have optimal interest, this study doesn't offer much concrete direction to teachers. It is important for teachers to know how interest works, so they can recognize it when they see it, but further studies are needed to know exactly how to create these optimal interest conditions in the classroom. It is also possible that educational techniques which create a pro-mastery learning climate in the classroom would promote greater undivided interest, since high spontaneous interest is an aspect of mastery orientations as well.

Examining these issues in the light of specific teaching techniques and classroom structures is important for making optimal experience more applicable to concrete teaching techniques. One such technique, group instruction, was also examined in light of flow theory to see if that technique had increased association with "flow."

A study by Peterson and Miller (2004) examined the engagement levels of students in both whole class and group instruction. The sample, which included 90 participants, consisted of 20 men and 70 women between the ages of 18 to 32, and was taken from pre-service teachers at a private mid-Atlantic university. Instructors who participated in this study all agreed to follow similar procedures in their classes and had previously participated in the development of the course and syllabus itself. Peterson was also one of the instructors participating in the study. The course from which the participants were drawn was a required psychology course for education majors.

These students were fairly young, which might make this study more relevant to high school (19.5 mean)—but they show their commitment to formal schooling in general by being pre-service teachers. They also all have achieved a certain level of

academic achievement by being in the university and the study did not report their racial and SES makeup or the racial and SES makeup of the university in general.

The data were gathered by interrupting students in class twice during the semester to respond to a questionnaire about their level of engagement. One interruption occurred when students were participating in cooperative learning (a discussion of key principles) and another during whole-group instruction of some sort. The whole group instruction participants were interrupted during instruction on the same key principles being taught in each section, but while teachers were using different methods of whole-group instruction. One class was using a hands-on activity, one was using personal examples to demonstrate the key principle, one teacher was lecturing with overheads and one was lecturing but was responding to a students question at the time of the interruptions.

All groups were interrupted ½ hour into the class, and all groups were told in advance that they would be interrupted during the class and asked to describe what they were thinking and doing.

The questionnaire itself, called the ESM, has been tested extensively in a variety of large-scale studies and has reliability and validity documented in various different sources. It measures both internal and external experience. External experiences are defined as aspects of experience related to the setting. Internal dimensions of experience include the emotional, cognitive and motivational dimensions of consciousness. (Csikszentmihalyi, as found in Peterson and Miller, 2004).

Authors of the study did not think that the external experiences were relevant since all of the participants were in the same setting. The internal experiences studied

were as follows: Cognitive Dimension: content of consciousness, cognitive efficiency and perceived learning. Emotional Dimension: affective tone, activation or potency and self-esteem. Self-esteem was measured by how well a person was fairing in the activity being studied, rather than in their life overall. Motivational dimension included: degree of engagement, importance of the task, relative levels of challenge and skill, intrinsic motivation and perceived control.

The fact that students were told they would be interrupted and asked to evaluate or describe their thinking and engagement might have had some effect on that engagement. Also, students were only interrupted twice during the semester. Perhaps the study would have been more effective had student engagement data been taken more frequently at various intervals during the semester but without informing students that it would be happening.

Results suggested that cooperative learning with undergraduate students can lead to greater cognitive involvement and higher levels of motivation, including higher engagement, as well as greater perceived importance of the tasks, and more optimal levels of challenge in relation to skill. Optimal levels of challenge in relation to skill is associated with "flow," an aforementioned highly engaged and motivated state (Csikszentmihalyi and Csikszentmihalyi, 1988).

A majority of students in both groups were thinking directly on task about something regarding the classroom activity. In the cooperative learning group (CL) 61% of the students thinking was on task, in the group instruction group (GI) 58.9% were thinking on task, the difference between the two groups was not statistically meaningful.

There was a difference between the groups when it came to thinking about something related to, but not exactly about, the task, for example, planning how to explain a key concept to others in your group (CL) or about writing a paper (GI). When on-task and related to task behaviors were combined, there was a difference between the two groups. In the CL groups students were more likely (87%) to be thinking on or related to the task than during large group instruction (73%) and the difference was statistically meaningful (p.<.05).

For the motivational variables, authors reported statistically significant (p<.05) differences between the two groups for degree of engagement (CL: 5.23, GI: 4.78), perceived importance of the task (CL: 6.81, GI: 6:20), and challenge (CL: 5.60, GI: 4.67). There was not a significant difference between the two groups in the area of skill (CL: 5.66, GI: 5.45). In the domains of skill, degree of engagement and self-esteem, there were no statistical differences between the two groups.

Some flaws of the study were that the demographic information was limited and the demographic diversity was unknown. The students were limited to college students, which might not apply well to a younger demographic not in school by choice. The studies biggest flaw is that the students' experiences were only sampled twice—one in each type of learning. In order for this study to be more applicable to practice in a high school classroom, it would have to have sampled many more instances of cooperative learning and group instruction.

Although this study is not generalizable to a wide variety of students, it does seem to give some evidence for the use of cooperative learning for increasing student

motivation. One intriguing difference between the two groups was the greater perception of the students in cooperative learning groups that the learning they were engaged in was of more importance to their lives. In light of findings in Greene, 2004 that students perceptions of relevance significantly and positively impacts their motivation, group instruction has the potential to increase that perception of relevance. More studies would be needed to shed light on the potential of group instruction to increase perceptions of relevance.

Another potentially important aspect of this study was the finding that, although skill levels were approximately the same across the two groups (CL: 5.66, GI: 5:45), students perception of challenge and degree of engagement were greater in the cooperative learning groups. Since optimal levels of challenge and skill are crucial to achieving flow, or optimal experience, students who have a higher level of challenge at the same level of skill may be closer to achieving flow during the classwork.

In another study which examines flow specific to a particular classroom activity, Chen and McGrath (2003) examined how engagement and motivation were affected by creating hypermedia documents. They used the criteria of flow, or optimal experience, while studying students' creations of hypertext documents.

Hypertext is a type of database system in which chunks of text can be linked to each other. We see hypertext and hypermedia (a system of linking not only text but graphics, sound and video) most often on the internet when highlighted or underlined words can be clicked on to find more information about a particular word. For example, clicking on the word motivation might launch screens having to do with engagement,

flow, or other connecting concepts. To work effectively with hypermedia it is important to understand how certain information is connected to other information—possibly making hypermedia design conducive to demonstrating conceptual learning.

High school students in a sophomore level science class in a Midwestern city. The two classes studied reflected the racial mix of the school, which was 50% students of color and 50% white. Observations were focused on observations and analyses on 16 tenth graders in one section, however. This group consisted of seven females and nine males; nine Caucasians, six African Americans, andoneHispanic. Some data sources were taken from all students in order to observe a wide scope of learning experiences.

Students were allowed a "play phase" (Grabe and Grabe, 1996—ref in study) to explore the program they were using and complete a small project before the study began. The teacher also held "focus sessions" emphasizing necessary vocabulary, associative ways of thinking and knowledge representation and specific skills required for hypermedia design. Students presented their work at the end of the project to teachers, university students and school district staff members.

The project being studied involved students creating hypermedia documents about water for upcoming students to use as a learning aids. Engagement and conceptual learning were measured through a variety of data—students projects and designer notebooks, observations and interviews as well as the teacher's journal and students self-reports were used as data sources.

Researchers measured various aspects of task engagement relative to specific tasks involved in hypermedia documents. They observed students' enjoyment, concentration, control exploration and challenge. The hypermedia project was divided into both cognitive aspects and procedure/design aspects. Producing the Hypermedia text itself involved organizing information, linking information and naming paths.

At the end of the project, students completed the Optimal Flow Experience Survey to provide a better picture of their affective response to the hypermedia design experience. This survey asked students to rate aspects of the task from 1-7, one being the least, seven being the highest. For example, under the category of enjoyment, students were asked to rank their experience in the four concepts of hypermedia (chunking, linking, naming and organizing) from uninteresting (1) to interesting (7). For chunking, where students group concepts together, the average score for interesting was 5.

There were no average scores below 3, and only one, where students ranked the category of 'organizing' from Dull (1) to Exciting (7), received an average score of 3. The aspects of the class studied were Enjoyment, Concentration, Control, Exploration and Challenge. Under the category of enjoyment, the class averages were 5s or 6s across all for categories. For Concentration, students scores were strait 6s across all four categories. The average score for 'engrossing' was a five across all four domains. This would seem to indicate that the students perceived themselves to be very cognitively engaged across all domains. The highest scores, however, were under the category of Control. This measured students perception that they were in control of learning in the task. Under the category of 'chunking' the average score was 6.5—almost the highest

score possible. The other domains were not above 5.5. This would indicate that students across the board felt like they were in control of their learning.

Students' perceived interior locus of control has been associated with various adaptive outcomes, including the ability to be flexible about learning strategies and problem solving (Soares, et al, 2005).

Qualitative data was also obtained by the researchers by keeping files of student work and analyzing patterns in conceptual understanding as their work progressed overtime.

Overall, the study found that the procedural/design aspects of the project were more motivating than the cognitive aspects. This study supports previous studies which suggest "collaborative authorship in hypermedia design is often related to greater levels of student motivation, effort satisfaction and higher standards of students projects, as a result, students learned the knowledge content and valuable design skills" (Chen and McGrath, p.402, 2003). The researchers made an interesting observation that it appeared to be that the overall "motivating context" effected student motivation more than the hypermedia tool itself.

It may be that the classroom environment and teaching in this classroom effected students motivation as well as the project itself. The teacher in this case employed various methods to encourage student learning. As mentioned, she gave the students the change to become familiar with hypermedia documents by allowing 'play' phase. She also provided additional context for her students by giving them instruction in vocabulary

and concepts necessary to complete the assignment, and the students worked in groups, something show to increase cognitive engagement (Peterson and Miller, 2004).

While this is mostly a qualitative study and not meant to be generalizable, it raised important questions about the motivating effects of classroom tools (computer programs, the latest texts) versus the motivating effects of the overall environment (including collaborative projects and constructivist teaching styles) .

Although this study was dealing primarily with a science class, it could help answer the question, are there classroom tools which are motivating in themselves (computer programs, textbooks, etc.) or at least are their styles which are more motivating than others? These findings suggest that the overall context of the project (effective teaching and collaborative and engaging projects) are more important than the actual project themselves. This would suggest that curricula or tools would be most motivating and engaging within a motivating and engaging context.

Although this study did not cover optimal experience or flow specifically, it did illustrate the positive outcomes that come when students are motivated and cognitively engaged and how engaging and effective teaching can improve the factors that lead to flow. Part of the rationale of the research was to examine motivation and engagement under the broader context of optimal flow, where there is both high motivation and engagement.

There are several important parts of optimal flow—concentration on a task that is challenging but achievable, flow is enhanced by the perception of clear goals and

immediate feedback provided by the task. There is a sense of being in control, a loss of self-consciousness, and a feeling of "transformation of time." People lose track of time in optimal flow.

Flow theory has also been examined in light of reading. McQuillan and Conde (1976) inquired under what conditions does a reader experience intense engagement in a text? Their research included two different studies of flow in reading.

Study 1: eleven children and adults who read for pleasure. (M6, F5) ranging in ages from 9-42. Nine of the informants were bilingual to varying degrees. Seven of the subjects spoke both English and Spanish—three said they experienced flow only while reading English—two said they experienced it in both languages and two only in Spanish. One subject was English dominant bilingual Vietnamese speaker, another participant was trilingual and a self-reported high level of reading fluency in Malay, mandarin Chinese and English. Two informants were monolingual speakers of English.

Study 2: 76 university students and professionals. (M=53, F=23) with a mean age of 28.5, drawn mostly from a large private university community and from a waiting lounge at Los Angeles International Airport (LAX). 60 of the participants were undergraduate and graduate students. First languages spoken by informants were English (30) Chinese (23), Korean (11), Japanese (4) and eight other various languages.

Study 1: participants read three descriptions of flow developed from three different flow researchers. Then participants were asked if they ever had their own flow experiences with reading and with which texts. They were asked to describe their experiences and notes were taken from the interviews. Their responses were then

categorized into the following: level of interest in the text, types of texts (genre), context in which the text was encountered (at school, work or pleasure reading), any perceived benefits of flow, knowledge about text prior to reading, and other descriptions of how they felt during their flow experience. Interviewers rated the data according to text type, purpose, setting and whether the books was self-selected or assigned. Inter-rater reliability for data classification was .91. A member check was conducted with each informant to verify the accuracy of ratings.

Study 2: The authors created a Flow Research Survey based upon Csikszentmihaly, Massimini and Delle Fave's descriptions of flow, which was then administered to the participants. Participants read descriptions of flow on the Survey, wrote down the name of any texts with which they had experienced flow and placed an X next to the statements which described certain conditions under which they had encountered the texts.

Study 1: texts chosen by the informants themselves were more likely to be associated with flow. 70% of the books providing flow were self-selected. Subjects stated that text producing flow generally reflected prior interest, prior knowledge of the subject, author or topic, provided new or previously forgotten information and provided a perceived intellectual or personal benefit to the reader. Books that were assigned (not chosen by the reader) could produce flow, but only when the interests of the assignor and the reader coincided. Many subjects felt that it was inherently satisfying to be in flow. With the exception of two subjects who said they experienced flow while reading history texts "because of the interesting story" nobody felt they experienced flow reading school texts. One subject said that flow and concentration were the same thing, it was

impossible to have concentration without being in a flow state.

Study 2: 75% Of books which produced 'flow' were read for pleasure. 80% were books which provided personal or intellectual benefits. 59% provided some new or unfamiliar information/topic. 40% of texts producing flow were about a subject about which the reader was familiar or "contained a different style or format for the reader (30%)

In general, in order to promote an optimal experience for readers, it is beneficial if the texts are fiction, or at least tell a story, and if the readers has an opportunity to select the material. It is also beneficial if the teacher is familiar with the students' interests and can suggest a text they might find interesting. There seems to be a connection in reading between flow and narrative.

The study selected participants who were already readers for pleasure and who had experienced this 'flow' state. This study seems to suggest some important information about increasing reading engagement for students who are already reading but could be less helpful for students who are not active readers. The authors pointed out other potential confounding variables of the study, including that respondents may have felt that not writing down a certain number of texts or checking certain responses might reflect poorly on them, even though the questionnaire was anonymous. Also, as mentioned before, there was no option on the questionnaire for those who had NOT had the flow experience while reading.

As a means to increase engagement for students in language arts classrooms, the findings of these studies are very helpful. The studies included a linguistically diverse group, with bi- and trilingual participants in each study. Although the first study included

readers who did read for pleasure and had all had the flow experience. The study left out people who did not generally read for pleasure and who hadn't had flow experiences. The second study included predominantly students (60 out of 76 participants) and people at the LAX terminal. One would assume that students at the university level, or employees and professionals at a university, would have reached a higher reading facility than the population at large. People who were arriving, leaving and greeting people at LAX might have a SES status that sets them apart from the general population at large.

These studies were relevant to pointing out characteristics of the flow experience in people who read for pleasure or regularly as part of school or work. It would need further study to find out if the characteristics of flow for these readers could also be achieved among reluctant or less-interested readers.

These studies also suggest that the object about which the participants achieved flow was one "of interest to them." These studies do seem to underline the importance of self-selected reading material for students. It seems that choice, motivation and relevance are related to flow states. Is frequency and intensity of "flow states" associated with increases in motivation?

The purpose of a study by Hektner and Csikszentmihaly (1996) was to determine whether increasing in frequency or intensity of flow experiences is associated with increases in intrinsic motivation, both in school and in out of school activities.

Participants were 281 adolescents from 12 cities throughout the U.S. The paper mentions they were from a "diverse range of racial/ethnic and socio-economic

backgrounds" and also that they come from "urban, suburban and rural community contexts." However, the study does not give more specific information than this and does not break down the findings among SES groups or racial and cultural groups. This makes it impossible to determine if there are differences in flow experiences or amount of flow experiences across cultural/racial and SES lines.

The Experience Sampling Method (ESM) was used in this study. Students recorded their experiences daily regarding their cognitive and affective experiences. For one week in either sixth, eighth or tenth grades, and then for another week 18 months later, turning in an average of 32 reports each per week. Participants were then divided into groups depending on whether their flow scores increased, decreased, or remained stable. The data showed a correlation between a person's overall amount or quality of flow and his or her overall quality of experience (p<.001).

This study was important because it explored the levels of flow longitudinally. The authors suggest that the ability to achieve flow and its attendant benefits (positive affect, intrinsic motivation, cognitive efficiency, and increases in skill) can develop overtime. Although this study was not peer reviewed or published as a journal article, it does concur somewhat with other findings which were peer reviewed (Shernoff, et al, 2003) also mentioned in this paper.

These findings do relate somewhat to the importance of increasing engagement and motivation in classrooms, since flow is associated with higher positive affect, intrinsic motivation, cognitive efficiency and increases in skill.

The study by Shernoff, Csikszentmihalyi, Schneidier and Shernoff (2003) explored the relationship of the elements of flow to high school engagement. The sample

consisted of 526 students from three separate schools in the 1990's. 62% of the sample was female and 34% was male, 16% of the sample was African American, 8% was Asian American, 10% Latino and 64% European American. SES status was 7% low income, 15% lower-middle income, 37% were middle income, 27% were upper middle income and 14% were upper income. Males, Latinos and low SES students were underrepresented in the study compared to national demographics.

Students were asked to participate in the Experience Sampling Method (ESM) in which, at the sound of a pre-programmed wristwatch timer, they recorded their activities, locations, thoughts and mood. They also filled out a questionnaire to determine engagement, attention, quality of experience, challenge and skill levels, all characteristics of flow. Engagement, attention and quality of experience were dependent measures, and independent measures were challenge, skill, challenge/skill conditions, instruction relevance and control, as well as various measures of classroom activities and school subjects.

Flow theory posits that optimum skill and challenge levels result in optimum concentration, involvement and enjoyment. When students perceived their skill level as high, they reported high engagement levels as well (p<.01). The highest level of engagement was recorded in flow conditions, the lowest in apathy conditions.

Activities that required both perceived high skill and perceived high challenge, reported greater concentration, interest and enjoyment over other activities, with the exception of enjoyment, which was not significantly different in relaxation states. Apathy and anxiety, not surprisingly, reported less enjoyment. Also in flow conditions

students reported attending to instruction more (73% of the time) than students in relaxation, (58%) anxiety (70%) or apathy (42%) states.

The high skill/high challenge conditions were also associated with higher engagement, mood, esteem, intensity and motivation (p.<.001).

Different instructional methods were associated with higher levels of engagement as well; (p.<.001). Group work provided the highest level of engagement (6.18) followed by individual work (5.98), taking exams (5.54), watching tv or video (5.44) and listening to lectures (5.34). Group work also provided the highest levels of enjoyment (p.84). The P values for all of the above associated levels of engagement was <.001). There were significant effects of instructional methods on subgroups of interest as well. As might be expected, concentration was highest during exams (8.48) but was also higher for group work (7.34) and individual work (7.43) as well. Students seemed to concentrate more when taking an exam or working individually. Enjoyment was highest when working in groups and watching t.v. or videos, but the scores were very close (5.84 and 5.59 respectively). Enjoyment was lowest while taking an exam (3.95) or listening to a lecture (5.59).

This study was very relevant to topic of identifying effective strategies for increasing cognitive engagement and intrinsic motivation, since it evaluated aspects of flow associated with particular common teaching techniques. It appears that group work provides the high levels of engagement and concentration. Perhaps surprisingly, it was nearly as enjoyable for students to work in groups, where they were engaged and concentrating, as to watch t.v.

Lectures, a common classroom practice, took a motivational pounding, being at the bottom of the enjoyment as well as the engagement run. This study alone should make teachers think twice about lecturing.

Other researchers have used optimal experience, or flow, to evaluate classroom activities. As technology becomes more and more important in education and classroom learning, it might be important to understand if web based instruction can provide some of the motivational benefits of optimal experience as well.

Can the learner experience Flow in web-based instruction? Rha, Willians and Heo. (2003) explored both learner engagement and motivation related to flow within web based instruction settings. The study focused specifically around "an examination of what constitutes the critical feelings of learners which are related to an optimal Flow experience, as well as which features of WBI environments and activities tend to be most closely associated with Flow." (Rah, 2003, p.53)

Participants were students attending any of the 16 cyber-universities which the Korean Ministry of Education has authorized to award degrees. five schools agreed to invite participants to the study and each was allowed to do it in its own way. Some posted notices of the survey on a portal bulletin board, some invitations were issued online by the web-based instruction professors. 244 students from these cyber-universities volunteered to participate and provided complete data. 22 additional students from several other cyber-universities also completed the survey.

The final sample included 266 participants (M=146, F=120). All age categories were represented from "younger than 16" to "older than 50" The median age category

was 30-40 years old. Students also estimated the time spent on the internet per week and the variable was large, with the median time being 10-20 hours per week..

Participants took an on-line survey administered through a single independent website. Data was collected for a period of approximately four weeks. The survey included 50 questions, 49 of which were nine point likert-type questions asking respondents to think about current experiences with WBI at their cyber university. The survey ended with an open-ended narrative question asking users to describe some Flow experience they may have had in their WBI experience. There were also four demographic questions. The 45 other items reflected the overall initial Flow model: 28 items reflected learner's perceived feelings during WBI about key aspects of flow: playfulness, importance, exploratory behavior, time distortion, skill arousal, challenge and focused attention. 12 questions related to the degree to which learners experienced Flow related feelings during WBI. 12 items asked about the degree to which learners experienced features of WBI (Contents, Design, Interactivity and Navigation) during their online experience. Five questions asked the respondents to report any General Flow feelings they might have had during WBI.

Since the study was divided into threee major parts (Feelings during WBI, WBI Experiences and general flow feelings) each component was separately analyzed.

In the factor analysis of "Learners feelings during WBI" showed a dominant first factor, referred to as "G-factor for Flow." It accounted for more than three times that of any of the other factors in the percent of variance it accounted for. (30.1 % variance explained, p<.001). Surprisingly, one key component of Csikszenmihalyi's flow model,

skill, had "comparatively minor contributions to the final factor structure." (p=.125) (p. 56).

Analysis of WBI Experiences resulted in much more evenly balanced factors, according to their relative contributions. Again, Overall Flow Feeling did not have a significant relationships with Skill and Challenge—key components of flow theory. The authors posit that this could be a translation issue on the survey questions, or the issue that skill and challenge are self-report measures on the survey and may not accurately reflect either skill or challenge.

Two key component of Csikszentmihalyi's flow models, skill and challenge, had comparitively less contribution to the final factor structure. They didn't influence Flow experiences as much as the researchers thought they might.

Rha et al., observed that flow is very common among certain types of computer use—internet chat rooms and gaming, for example. Studies of flow in computer use have tended to focus on flow as a means to creating an enjoyable computer experience not as a way to increase learning or motivation in web based instruction. (Hoffman and Novak as quoted in Rha, I.J., Williams, M.D.,and Heo, (2005).

Csikzentmihalyi's flow model requires a certain level of skill in order to avoid anxiety. The theory is less helpful in what to do to differentiate instruction so that all skill levels can experience optimal flow. This study does not seem to find that skill is as important as previously supposed in correlating web-based instruction and optimal skill levels. It leaves the question of how skill affects flow and what those optimal levels of skill are. It is possible that the sort of 'flow' mentioned when someone becomes immersed in an alternate video game reality is not as applicable to a learning context

because skills in classroom context are more applicable to real life. This does not mean that technology cannot be used in context of a classroom to improve motivation and engagement. Chen and McGrath (2003) demonstrated that coupled with effective teaching techniques, increases in motivation and engagement could be associated with the use of technology (in their case hypertext) in the classroom.

So it is possible that there is something missing in the skill/challenge template of Rha et al.'s (2003) operational definition of flow. Further research has also pointed to the importance of relevance (Rathunde and Csikszentmihalyi, 2005) and undivided interest as parts of flow.

Rathunde and Csikszentmihalyi (2005) recognized that some of the characteristics of Montessori schools are the same characteristics shown in various studies to aid intrinsic motivation and cognitive engagement and other phenomenon associated with Flow and Flow theory. Many of the recommendations for school reform for increasing motivation and engagement delineated by current research are routinely implemented in Montessori classrooms (Rathunde and Csikszentmihalyi, 2005). Some examples of those strategies are avoiding achievement competition, working cooperatively in groups, identifying topics of personal interest, evaluations not in the form of grades (unless by choice), flexible time management to allow for students to concentrate for longer times on things of interest to them, student input and decision-making about classroom management and content.

For the purposes of this study the authors chose five specific criteria for Montessori schools which reflected the current recommendations for increasing

motivation among middle school students. To qualify for the study, participating Montessori schools had to meet the criteria of being conducive to intrinsic motivation by:

a.) Adherence to an explicit philosophy of intrinsic motivation that emphasized spontaneous concentration and freedom within discipline, in keeping with Maria Montessori's principles.

b.) Providing students with significant unstructured time for self-directed work (averaging two hours per day) and not using the typical block format of 45-50 minute class periods.

c.) Not utilizing mandatory grading or standardized testing for comparative purposes and student placement.

d.) Allowing students to play a significant role in daily decisions that affected the school.

e.) Discouraging whole class lecture formats and encouraging small group work.

In order to participate in the study as a traditional school, middle schools in question had to meet criteria for being traditional. In other words, they hadn't yet implemented significant reforms with an eye toward increasing motivation. The aforementioned criteria was reversed for traditional schools, they:

a.) Did not emphasize intrinsic motivation and spontaneous concentration as a central guiding principle

b.) All held classes in a block format of classes in 45-50 minute periods.

c.) Provided feedback for students in the form of grades and standardized tests were used for placement and as progress 'benchmarks"

d.) Did not provide students with formal opportunities for decision making regarding school.

e.) The teachers relied heavily on lecture formats for imparting information and stressed "attentive listening" as a value.

The criteria of both schools was established with a variety of evidence, including class observations, teacher and school manuals, fliers about the school and interviewing personnel. Although the traditional schools had a variety of SES and racial backgrounds, for the purposes of this study it was important that the SES and racial backgrounds from the traditional schools compared accurately with the students of the Montessori schools since SEs, Race and other demographic issues have been shown to influence engagement and performance in school (Becker, 1990; Finn and Voekl, 1993; Lee and Smith 1993, Marks 2000, Wentzel,1998; as quoted by Rathunde and Csikszentmihalyi 2005). Since the Montessori schools, with the exception of one, were private schools, the SES status tended to be higher than in the traditional group. The final demographics were; Traditional schools: Total sample 150 student in sixth and eighth grades, 55% female, 45% male, Caucasians represented 74.9% of the sample, Asian Americans 7.8%, African Americans, 12.6 %, Latinos 3.6% and 1.2% identified themselves of a different ethnicity. In the Montessori sample of approximately 150 students in sixth and eighth grades, 60% were female, 40% male, 72.6% Caucasian, 109.2 % Asian American, 12.7% African Americans, 1.9% Latino and 2.6% were from other ethnic backgrounds. The sample from the traditional group was taken nine years earlier, as part of a larger study, than the Montessori group, because the traditional group sample had been part of a larger study of traditional public schools. To compare the two groups, participant demographic

information in the traditional group was compared with the Montessori group after the fact.

This is a potential difficulty for this study because those nine years, 1996 to 2005, represent a time of change during adolescent lives. The onset of the internet and other technical devices may have changed the experience of adolescence enough to affect the data of this study.

The authors of this study used the Experience Sampling Method (ESM) described in Chapter One of this paper. Students were given watches that signaled them approximately eight times per day, not only during the school day but from 7:30 am to 10:30 pm. Students were trained on how to fill out the response form and were also given a questionnaire for their parents or guardians to complete and return. Students were asked to answer the questions, "Where were you?" and "What is the main thing you were doing?" and to fill out a questionnaire.

Both traditional and Montessori groups completed the same questionnaire to assess the variables, which were: affect, potency, salience (relevance), intrinsic motivation and flow. 62% of the responses completed during school hours were about academic work activities occuring during class, including extra-curricular activities. 38% of the responses included other activities such as eating lunch, socializing, leisure activities, etc.

Percent of flow experiences: Flow signals were defined as occurring when skill and challenge (see definition of flow in Chapter One) were both above the students own

average. The ration of flow signals to the total number of signals in a context was how the percentage of flow was conducted. If a student responded ten times to signals during a school day, and three of those signals showed higher challenge and skill than the students average, the student's flow would be 30% for that school day.

Univided and Divided interest: This measure was taken slightly differently than the study on page 57 of this paper. (See Figure 1.1 on page 57). In this study, undivided interest consisted of two variables—"intrinsic motivation" (as in Rathunde and Csikszentmihalyi, 1993) and "Relevance" (instead of direction). Previously Rathunde and Csikszentmihalyi (1993) defined undivided interest as high intrinsic motivation and high direction (moving towards an outcome goal). In this study undivided interest is defined as high intrinsic motivation and *high challenge level and/or relevance to life or future goals*. This represents a significant if subtle difference in the definition of an aspect of interest. It is the goal of the task related to the student's life, not the goal of the task related to itself, that is the important feature combined with intrinsic motivation. Other factors of this assessment of undivided interest were the same.

Background variables were also factored into this study. They were: Gender, SES and Ethnicity. Ethnicity was divided into two categories—European American and Minority. This seems to be insufficient. Other background variables were used to test whether the Montessori and traditional samples were similar, family resources, parental monitoring, parental involvement, family size, parental employment, and grade point average were all matched up generally between the samples. Both schools and

participants were identified as very similar on each variable. All schools were newer, well appointed and well-maintained physically.

Authors of this study hypothesized that given the Montessori schools' emphasis on undivided interest and other methods that have been shown to be associated with increased motivation, the Montessori schools would report more positive motivation and experience. As hypothesized, Montessori students reported more flow, higher affect, potency, and intrinsic motivation while doing schoolwork. The traditional students however, reported higher salience. Significant differences in motivation and interest were found between the two schools.

The participants from the Montessori group's mean percent of undivided interest (40%) was higher than the participants from the traditional group's mean (24%). Undivided interest, again, was when salience and intrinsic motivation were both at higher than average levels. (See Table Two). Conversely, the traditional group's scores for divided interest (drudgery—44%) were higher than the Montessori group's (26%). This means that students in the traditional schools were more likely to see more of their school activities as being important, but not motivating. Interestingly, students at both traditional and Montessori schools reported similar levels of high intrinsic motivation/low salience, or "fooling." (9.9% and 8.0% respectively).

Table Two. Chart of Divided/Undivided Interest (Rathunde and Csikszentmihalyi, 1993)

High Spontaneity/High Directed Undivided Interest	High Spontaneity/Low Directed Divided Interest: "Fooling"
Low Spontaneity/High Directed Divided Interest: "Drudgery"	Low Spontaneity/Low Directed Disinterest/Apathy

Ethnicity was related significantly to the two quadrants, divided interest/fooling and disinterest. Students from minority families reported a higher percentage of fooling and a lower percentage of disinterest than white students. This could have something to do with students of color viewing school as not being relevant to them.

When Montessori students were participating in school activities, they were more likely to report above average intrinsic motivation while perceiving their activities as having above-average challenge and importance. While both the traditional and Montessori groups showed significant positive correlations between intrinsic motivation and salience in school activities, the Montessori students reported stronger correlation (p.<.01); in the Montessori schools intrinsic motivation was more strongly correlated with the importance of school work.

This experiment also reported on students' experiences outside of school, but since the findings were not relevant to this paper, they have not been included.

The results of this study show that while engaged in academic work at school, Montessori students reported higher affect, potency, intrinsic motivation, and flow experience than those in the traditional school group. Students in the traditional school groups reported the perception that their schoolwork was of greater importance to their

future. These findings may both have to do with the school environment, in other words, traditional schools tended to emphasize performance values and their relevance to getting a future job, Montessori schools tended to emphasize learning for learning's sake and undivided interest. All in all, the students at the Montessori school spent an average of 3.5 hours more per week doing schoolwork they felt was interesting and important.

Although much more information over a more diverse population is necessary in order to truly understand and utilize flow theory in relation to classroom teaching, it is evident that flow and the conditions associated with it, such as enjoyment, increased motivation, persistence, undivided interest, engagement and increased self efficacy, are worth increasing in any classroom. It is possible to encourage these conditions by offering students choices about their learning content, reading materials and activities (McQuillan and Conde, 1996; Rathunde and Csikszenmihalyi, 2005); encouraging activities which the students perceive as being relevant to their lives and future goals (Chen and McGrath, 2003; Peterson and Miller, 2004; Rathunde and Csikszentmihalyi, 2005); helping students find optimal levels of challenge and skill. (Rathunde and Csikszentmihalyi, 1993 and 2005). Having time and space in which to pursue their interests with undivided attention seemed to increase desirable motivational outcomes as well (Rathunde and Csikszentmihalyi, 2005). Effective teaching using pro-motivation and engagement techniques, rather than the latest technology, seemed to have greater potential for increasing motivation and engagement when using technology for learning, (Chen and McGrath, 2003; Rha, 2005), although more study along these lines would be necessary to determine this. Finally, there was ample evidence in the research to promote working with small groups, especially groups which have some choice about

what they will work on (Peterson and Miller, 2004; Rathunde and Csikszentmihalyi, 2005).

Apparently, however, there is no magic bullet for achieving the combination of factors which contribute to flow, and hence to all of flow's good outcomes. It is mostly a combination of effective teaching techniques which bring about the optimal level of skill and challenge, interest and direction, which creates this perfect storm of motivation and engagement.

Motivation and Engagement in Diverse Classrooms.

Many of the above studies did not include students of color or lower SES, or even participants who were in school districts not located in the suburban mainstream. The following studies were conducted within diverse populations, both in the United States and abroad. The following studies all shed light on the effects of culture or race in the classroom as it relates to engagement and motivation.

Finn and Voelkl, (1993) explored the geographical and demographic contexts on the effect of student engagement, studying the engagement differences between smaller vs. larger and urban vs. suburban or rural schools. Their hypothesis was that engagement in class and school activities among high-risk students is greater in smaller schools than in larger schools.

This research included two different experiments—Experiment 1A participants were 101 (M=57, F=44) public high school students in Germany who volunteered to participate—no extra incentive was given. Experiment 1B participants were 36 (M=15,

F=21) public high school student in Germany. Experiment two participants were 61 (M-22 and F=39) U.S. College students in an introductory level psychology glass who voluntarily participated in the experiment for on extra course credit. Study two sought to replicate the findings of study one and to throw in the added variable of a contingency.

The sample consisted of 6,488 eight grade students who met one or more of three risk criteria. About 33% of the sample were of Hispanic origin, 28% were African American, and 39% were White. All but a few of the White students were selected by virtue of their living in low-SES homes; 55% of the White group attended rural schools. Thirty one percent of the high-risk youngsters had been retained in one or more grades prior to the time of testing, and follow up data indicated that over 10% would drop out of school by grade 10.

Youngsters in the sample were attending one of 758 public schools across the nation—26% of these schools were located in urban areas; 40% were suburban 34% were rural schools. The number of high risk eighth-grade students in the sample from a single school ranged from one to 37. with a median number of seven such students per school. Most of the schools were middle schools or junior high schools; about 76% of the schools were middle schools or jr. high schools; about 76% spanned the grades ranges from grades six through 8, seven through 8, or seven through 9. Another 9% were combination junior-senior high schools."

This study represents a wide range of schools, urban, rural and suburban schools are represented fairly equally. White, Hispanic and African American students were represented equally as well. White students needed to be of low SES to participate in the

study. The study doesn't explain the rationale for that or follow the SES of Hispanic and African American participants. Is it perhaps that low SES is more of a risk factor for White kids or that only White students of low SES are considered at risk? The study does not explain why they made this choice.

Since student engagement is associated with academic achievement, this study assumed that student engagement is a worthy goal in and of itself. The focus of this study was on school rather than student characteristics. Two sets of school characteristics were considered: structural environment, school size and the racial/ethnic composition of the school population and regulatory environment, as reflected in the degree of structure and rigidity of school procedures and the degree of punishment of the school discipline system. Student engagement was defined in both behavioral and psychological terms. Participatory behaviors included attendance patterns and behavior within and outside the classroom.

Six measures of student engagement were considered as dependent variables. Five were indicators of students' behavior as participation in classroom and school activities.

1.) Absent-tardy (teachers reports)

2.) Not-engaged (teachers reports on completed homework, inattentiveness or disruptive behavior)

3.) Attendance-(student report)

4.) Preparation—(students reports of the number of times they came to class without pencil and paper, without books, and without completed homework;)

5.) Behavior—(student reports of the number of times they were sent to the principal's office for misbehaving, warnings to their parents or fights with other students)

The final dependent variable was student-teacher relationships. Students reported whether they got along well with teachers; whether there was "school spirit', whether teachers were interested and so on. Basically, students said whether or not they felt included and cared for by their teachers.

The most consistent findings were for the effects of school size. Generally—absenteeism is lower, classroom participation is better, and students feel that the environment is more warm and supportive when school enrollment is smaller. The percentage of minority students in Grade Eight was significantly related to three of the five participation measures and to students' perceptions of the warmth and supportiveness of the school environment. Basically, the less people who look like the student in the student body and faculty, the less likely the student is to feel to feel that the school environment is supportive and warm. The study did not show, however, an association between the regulatory and punishment structures and the engagement of students at risk. Although certain practices perceived as highly regulatory (hall passes) were more likely at schools with other engagement risk factors (high minority populations, large student populations, SES) these rules did not seem to affect the engagement patterns of high risk eight graders.

This study was large and had equal samples of Hispanic, African American and White at-risk jr. high students. It was also fairly well divided between urban, rural and

suburban schools. It seemed to suggest that engagement rates are effected by the size of the school enrollment more than the rules structure of the school environment. It is also important for students to see themselves reflected in faculty and students to feel warmth and support, a key factor in engagement rates.

It does appear from this study that one effective strategy for increasing engagement rates among high-risk students is a more close-knit relationship with teachers. A close student-teacher relationship was significantly and negatively correlated (p<.01) with absences (r=-.19), disengagement as measured by the questionnaire (r=-.25), lack of participation (r=-.31), and misbehavior (r=-.34).

This is important information because, of all the variables in this study, the students relationship with teachers is the one most influenced by the teacher herself. Putting a premium on trusting, warm relationships with students would be an effective way to increase their classroom engagement, at least in the forms of behavioral engagement. This study does not touch on cognitive engagement per se or speculate what would increase cognitive engagement and cognitive engagement's effect on motivation.

A study of Korean girls in Seoul, South Korea by Bong (2004) examined to what degree academic self efficacy, task value, achievement-goal orientation, attribution and motivation are correlated across multiple school domains

Participants were 389 freshmen (women) at an all-girls high school in Seoul. Participants completed motivation surveys to assess their academic self efficacy, task value, achievement –goal orientation, attribution of effort, and motivation beliefs toward

general schooling. Almost all of the variables were assessed more than once during the school year., and were assessed in relation to students feelings toward English, Korean and Mathematics. Self-Efficacy measures were taken four times.

Participants in the study were more likely to attribute effort, rather than ability, to success or failure in academics. This was strongly correlated across the three domains and with general schooling as well (p<.05)

Students who believed it was their ability which accounted for performance in a given domain did not necessarily transfer that belief across domains. Bong reported that students beliefs that their abilities (versus their efforts) were the reason for an academic outcome in a particular domain did not necessarily transfer to other domains. In other words, believing one is talented in mathematics, doesn't necessarily mean one will then believe one is talented in language arts.

This study might be relevant to the motivational beliefs of different cultural groups. However, as the authors pointed out, in the Korean school systems it is more common practice to use normative feedback, something associated with performance based motivation. The students in this study also endorsed effort, rather than talent, as the reason for academic outcomes, which could be associated with a mastery orientation. Changes in these two factors, normative feedback versus more individualized feedback, and the endorsement of effort vs. talent, would probably have impacted the study's results. More study would be needed to find out how these seemingly dichotomous influences play out similarly in classrooms in the United States.

Another study by Yamauchi (1997), not peer reviewed but presented as a paper, examined the effects on the self-efficacy of Native Hawaiian in the public school system. Participants were 202 students in grades seven and ten from a public secondary school in a rural, predominantly Native Hawaiian community in the State of Hawaii.

Students completed two subscales Bandura's Children's Multidimensional Self-Efficacy Scales and answered open-ended ?s about grades, career expectations and how they thought they were viewed by parents, peers and teachers.

Students achieved lower overall academic self efficacy than mainland subjects. Girls scored higher than boys. Multiple regression analysis also indicated that being male and Native Hawaiian was associated with lower self-efficacy for academic achievement than has been reported for students' on the mainland. One interesting finding that was, that the students reported lower self-efficacy for academic achievement in all academic domains except biology—the study suggested perhaps the students contacts with the natural world were meaningful to their lives.

One very significant finding was that Native Hawaiian students had self-efficacy perceptions equal to the stateside students in Biology. The students themselves reported that they tended to enjoy biology and find it meaningful to their life on the island.

The researchers also questioned children about their future job prospects and evaluated them about whether they think they will have a professional job or not. However, those jobs seem to be scarce in their area. This assumes that a.) wanting a white-collar job is a good thing and b.) there is some hope those jobs will be available. I question this approach. Perhaps a better question would be about whether the student

thought their education would allow them to do what they thought they might want to do in the future.

The study suggested that sociocultural factors should be considered when teaching Hawaiian children, especially that the structure of the school should "accommodate cultural tendencies." It did not make suggestions about how to do it.

This study seems to point to culturally appropriate curricula and pedagogy as being effective means of increasing motivation and engagement for students in this particular demographic. The fact that their self-efficacy in biology was equal or greater to that of students on the mainland suggests that biology, more than any other subject, was relevant to their lives. Relevance has been shown in other studies to be associated with other positive motivational and engagement outcomes (Greene, et al, 2004; McQuillan and Conde, 1996; Shernoff et al, 2003). Relevance relates directly to students' expectations about how they envision the future and what they think the future holds for them. In the case of the Hawaiian students, biology was relevant to their island life, and was something permanent in their lives. Other students visions of their lives and futures may affect their motivations similarly.

One study of African American students (Teahan, 1974) examined the career expectations of African American students in relation to what they thought they could actually achieve in their lives. This was relevant to this paper because goals and expectations of success are related to both academic and life success.

Study participants were African American students attending predominantly black schools in the Catholic school system of a large industrial Midwestern city. Two of the schools (A and B) consisted of primarily lower SES students with 70% of the fathers'

occupations classified as unskilled labor. Mother's occupations were not considered or mentioned in the study. School A's sample consisted of 96 boys and 122 girls from grades five through eight and School B's participants consisted of 45 boys and 63 girls. Two more schools (C and D) had predominantly middle class populations with 57% of the fathers' occupations listed as professional and semi-professional. These schools took samples from grades six through 8. The sample from school C was 189 students (89 boys and 100 girls). The sample from school D was 183 students with 92 boys and 91 girls. The last school (E) was an all-male black high school with a predominantly middle-class population (63%). Their sample of 106 students were from grades nine through 11.

Students listed, in order of preference, two occupations or jobs which they would like to have after they finished school. They were asked to not consider their own abilities or prospects but to list jobs they thought they would enjoy having. These answers were described as the students' goals. Then students were asked to produce predictions about what they would likely do based on reality. Students were told to be realistic and to list those occupations which they felt they might actually end up doing. These choices were then scored by averaging the two choices to each statement using the North-Hatt Scale of Occupational Prestige.

Differences in grade showed no effects, and so analysis of grade was thrown out of the study. Nearly across the board female students had lower status predictions about what jobs they might do, except for the girls of school A. "The obtained F ratios range from the five per cent level at School C (F=5.49) to the one per cent levels at schools B and D (F=7.16 and F=7.25, respectively). " The study had no explanation available for

why school A, a lower SES school, did not have students with lower occupational goals than the boys.

Another interesting finding was there was no trend for male students with lower SES status to have lower status goals. It was only when students were asked to modify their goals based on their perception of reality that they lowered their expectations of achievement. It was only the expectations of actual success, not the hopes and wishes for success, which differed from their control groups. The analyses of variance for predictions of future success was significant in the two lower-income schools and one of the middle class schools: School A (F=5.26, p=.05) School B (F=4.10, p =.05) School D (F=6.97, p=.01), schools C and E failed to reach the level required for statistical differences, the results were in the same direction as those who attended other schools.

In addition it seems that the predominant factor for lowered career predictions was not the SES status of the students, but the general SES status of the majority of the students in the school. For example, the highest variance between goals and predictions of future success was among low SES males attending schools in which most of the other students were lower SES as well. Females tended to choose lower status goals in general, but there was less variance between their goals and actual expectations. The subjects with the biggest difference between goals and expectations were lower SES males attending schools with other low SES students.

This study, while it did have a large sample, reflects life 32 years ago. Mother's careers were not considered influential enough to be listed and considered, even while evaluating the career expectations of their daughters and sons. The study was also localized to one city, among students attending Catholic schools. It would have been

important to examine the religious beliefs being taught to these students and their

possible influence in student expectations.

This study was done during racial desegregation and the women's movement.

Thirty years later, it would be interesting to repeat this study and find out if there was still

a variance as large between African American males and females. Also there was no

control group among other races. A similar study among lower and middle class SES

white students would help explain if the variances were due to racism or lower SES status

or a combination of both. Also, all of the schools studied contained primarily black

students, an important comparison would be the dreams and expectations of students

attending integrated schools whether they were lower or middle class SES status.

The study still remains as a vivid example of a group of students who did not

expect to make their career dreams come true. The study doesn't speculate on the effect

this would have on students' engagement and motivation in a school setting, but one

could imagine it would not be a positive one.

Expectations of academic achievement or non-achievement, in both teacher and

student, are powerful forces in a students' self-efficacy and motivation (Wentzel, 1989,

2002). This study examines the effect of peer groups on African American students'

expectations of success.

Many studies of motivation and engagement have focused on the more internal

factors (personality, intrinsic motivations) surrounding motivation and engagement, this

study examined environmental factors (socioeconomic status of a peer group) in looking

at motivation. Specifically, how do differences between a students' own socioeconomic group and the socioeconomic status of a peer or reference group effect a students' expectations of success?

Freeman and Anderman (2005), conducted another study that examined environmental factors on student engagement, specifically rural and urban environments, Participants were 571 eighth middle school (sixth-eighth grade) students in Kentucky, across urban and rural schools. The students were predominantly White (504), with some African American students (47) and various other racial and ethnic groups. 68 teachers participated in the observation portion of the study (12 males and 56 females).

Students were administered surveys at three different times: spring of sixth grade, and the beginning and end of seventh grade. The surveys were a 5-point Likert-type scale. Students endorsement of personal mastery goals, perceptions of mastery goal structure in their classrooms and academic achievement (GPA in core subject areas) were all measured and recorded for the study. Teacher's self-efficacy was measured in a Likert-type scale. Principals of schools involved were also sent a questionnaire to designate socioeconomic status, demographics, incidences of violence in their schools and whether or not their schools participated in practices such as ability grouping and 'school within a school' programs. Principals were also asked to designate their school as either rural, inner city; urban, not inner city; suburban, or other. One designation as 'suburban' was changed to 'rural' because of geography and demographics. Researchers also observed in classrooms, recording observations of such phenomenon as mutually

respectful environment, purposeful movement, student-initiated talk, teacher response to student initiations, on-task behavior and teacher praise.

The study data showed students mastery goals in sixth grade were positively related to mastery goals in seventh grade, (r=.44 and.43). Mastery goal orientation and perceptions of mastery goal orientation in classes was also significantly and positively related, (Wave I, II, III were r-.53, .70 and .76, respectively). Students in both rural and urban areas increased their personal mastery goals from sixth to seventh grade, with students in rural areas reporting a higher increase of mastery goals than did students in urban schools.

This study did show, however, that goal orientation can be shaped by educators. Some of the data recorded for this study was qualitative observations of classroom settings. The criteria observed were: Mutually Respectful Environment, Purposeful Movement, Student Initiated Talk, Teacher Response to Student Initiations, On-Task Behavior, Teacher Praise. It should be noted that these measures have more to do with behavioral rather than cognitive engagement. Observations were not undertaken in this study to notice elements of cognitive engagement such as higher order thinking skills. Overall, observers noted that students in rural districts seemed to have an environment more conducive to order and mutual respect than urban schools.

While the study didn't test any environmental factors as variables, they did notice differences in the environment between urban and rural schools. For example, rural schools had more of a tendency toward group instruction and urban schools were more crowded and had more of a tendency toward whole group instruction. This study was

useful in that it demonstrated a tendency for mastery orientation to be encouraged by students perception of mastery goals in the classroom. This study was not generalizable to other ethnic groups, because of its preponderance of Caucasian students from one region of the country. The researchers also did not designate what population densities were classified as urban or rural, or how populous a town had to be to be classified as urban or inner-city.

One study which did examine the engagement patterns of a diverse community was conducted by Conchas (2001). This qualitative study examines the engagement patterns in Latino students in a large urban school in California. All students were of low socioeconomic status, from varying family backgrounds.   26 high school students participated, of varying Latino ethnicity. Students represented first or later generation U.S. born Latino students as well as more recent immigrants. Students of both Mexican and Central American backgrounds participated. eight of the participants attended the general school program, while 18 were enrolled in one of three college-prep programs, Graphics Academy, Medical Academy, and Advanced Placement (AP).

The community was racially diverse, with a population predominantly African American (42.9%), White (28.3%), Asian (13.8%), Latino (13.8%) and Native American (0.5%) and various other ethnicities (.3%). The population of the school reflected the diversity of the community. The sample did not, however, include LEP (limited English proficiency) students.

Data was collected during two years of participant observation. Field notes on student-student and student-teacher interaction, interviews with students and teachers,

seating-arrangement maps and documents such as report cards, teacher evaluations, student work and flyers for school announcements. Students were observed not only in class but at school activities and before and after school and at lunch. The researcher also held focus groups with students and teachers with participants reflecting the racial makeup of the school.

In order to create a learning community this school had adopted a school-within-a-school approach. The school housed separate programs for AP, and learning academies called Medical Academy and Graphics Academy. Medical Academy prepared students for medical careers and Graphics Academy for computer-related careers.

The researcher noted that many Latino students had a pessimistic view of school engagement and school work. Others were very optimistic and the researcher set out to tease apart the differences between these groups and understand what school policies influenced either optimism and engagement or pessimism and disengagement.

One of the large influences on Latino student engagement was peer group interaction. Conchas noted that Latino students in the general school program tended to segregate themselves from their peers. During interviews they expressed that they felt "invisible" and that their needs were not being met. They felt their teachers had low expectations of their abilities and their futures were limited once they left school. These students did express interest in their futures and had dreams of being many things, but felt very pessimistic about their ability to bring their dreams to fruition. This study mirrors the results of a study on African American students by Teahan (1974). The general program of this school tended to serve the U.S. born Mexican American Students. Only

11% of student in the general population of the school went on to college after graduation.

In AP and Graphics academy classes, students still tended to disassociate themselves from their Latino peers in the general population of the school and from other ethnic groups within their specialized programs. Graphics Academy, like Medical Academy, is a school-within-a-school magnet program. Graphics academy recruited students with advanced science,math and computer skills. Its population was 56% Asian, 26% Black, 10% Latino, and 8% White. Most students were recruited from this high schools ninth grade AP classes, which did not reflect the population of the student population overall. The AP program also did not reflect the ethnic demographics of the school, with 66% Asian, 14% White, 16% African American and 4% Latino. Latino students in these programs felt themselves marginalized from both their Latino peers in the general population of the school, but from other students in their programs as well. Latino students tended to bond with students who shared their high-achieving academic goals. A problem for Latino students in these programs was the high level of competition with other in their program. Although this study did not speculate about students motivational goals, many comments of these students reflected a more performance oriented approach. Indeed, cheating in order to get good grades was a problem in AP and Graphics academy classes. College enrollment from Graphics Academy was 100% during the study.

In contrast to the other programs in the school, the Medical Academy had a more interdisciplinary, cooperative and inclusive approach. Its population more closely

reflected the demographics of the school, with 54% of the students African American, 32% Asian, 10% Latino, 2.5% White, and 1.5% Philippino.

Medical Academy used interdisciplinary and team teaching, liking the curriculum across disciplines. This program also provided students with ample opportunities for internships, volunteer work and work outside of the classroom. This linked their studies to actual career goals, while giving them the information they needed to make career goals happen. The program provided career mentors and postsecondary student coaches, and teachers met often to facilitate individual student success. Cooperative work was emphasized in this program, and a Student Peer Educator program helped link academy students with others in the school community. Nor surprisingly, students had optimistic feelings about their future. This program recruited directly "at-risk" students. In 1998, 93% of these "at-risk" student graduated, with the remaining 7% leaving to enroll in another high school or moving out of the district. Of the graduates, 91% enrolled in college, 72% in four year universities. Only two students chose not to enroll in college, one male (Asian) for a military career and and female (Latina) to help her family financially by working.

The students in this program felt confident they could achieve their career goals in the medical profession. They also expressed desires to use their careers to return and help those in their community. There was some competition in this program as well, with one student reporting that "it's not the kind of competition that makes you say, 'Oh well, I'm the worst student and so and so always has the answer,'" but he says it's the kind of

competition "that makes you work harder." Although the study didn't mention this, it seems like an example of performance approach, versus a performance avoidance goal.

Students in this program also associated with their peers in the program of various races, and were cognizant of the fact that their program reflected the makeup of the school in general. The curriculum and pedagogy also reflected the makeup and culture of the students in the program.

Students in Medical Academy were aware of racism and that it might negatively affect them, but felt optimistic about the challenge of overcoming it. Although this study had to do more with overall structure than the teaching in individual classrooms, it does offer support for the idea that a learning environment which is inclusive, warm, challenging and respectful, as well as relevant to students future plans and cultural values, positively influences student motivation and engagement in all of its forms.

Taken together, these studies demonstrate the importance of environmental factors, be they peer influences, SES status or cultural values, on motivation. However, teachers can also have positive influences on the motivation of their students by creating a classroom environment which includes positive relationships with between teachers and students (Freeman and Anderman, 2005), high expectations and mastery orientation, (Conchas, 2001; Freeman and Anderman, 2005; Teahan, 1974;), and honors the cultural values of the students either through subject matter (Yamauchi, 2005) or structure and pedagogy (Conchas, 2001).

Some Current Teaching Methods and Their Effect on Engagement and Motivation.

This small section covers research on a current method of teaching, as well as an alternative school program, in order to asses their effect on student engagement and motivation. Does instruction which integrates the varied learning styles of all students in the classroom increase intrinsic motivation and varied strategy use in reading? Can teaching interventions to increase learning mastery goals increase motivation?

In a study by Guthrie, Alao, Anderson and Reinhardt (1999) five teachers provided CORI (Concept oriented reading instruction) to 53 grade five and 67 grade three students. CORI is based upon seven principles of literacy engagement: conceptual theme, real world observation, self-direction, strategy instruction, collaboration, self-expression, and coherence. Five teachers provided traditionally organized instruction aimed toward the same objectives to 53 grade five and 66 grade three students. Students were from two low-income schools. The three schools bordered a large, mid-Atlantic state metropolis. Each school had approx 55% African American, 22% Caucasian, 15% Hispanic and 7% Asian or other. All teachers were volunteers, between 41 and 50 y/o has 20-24 years of teaching experience and BA plus 45 hrs University Credit. In both third and fifth grade classrooms the proportion of boys and girls was not significantly different, according to chi-square analyses. Students of varied physical abilities as well as students from transient home backgrounds were also included.

Third and fifth grade students from various classrooms were divided into two groups, one group receiving instruction for one year using the CORI model and the other

using traditional methods. After the year the students were assessed to determine the CORI methods affect on conceptual learning and motivated strategy.

To ensure uniform adherence to CORI methods, teachers who were planning to use CORI during the study participated in summer workshop for ten half-days to plan instruction for the year. Teachers met one full day per month during school year to discuss challenges, progress and pedagogical strategies.

The study attempted to answer two questions. Question one was "to what extent does CORI increase *conceptual learning* from text in familiar and new knowledge domains?" and Question two was "to what extent does CORI increase *motivated strategy use* in familiar and new knowledge domains?" (emphasis mine) At the end of the school year students were assessed on the seven aspects of literacy engagements: conceptual theme, real world observation, self-direction, strategy instruction, collaboration, self-expression, and coherence. They were also given a standardized reading test, the third grade CORI group scored higher ($M = 42.74$) vs. ($M = 38.27$) than the students in traditional method classrooms.

All students, both traditional and CORI were assessed for their ability to learn about a new topic as well. Students in both CORI and standard classes were given two forms, one on a familiar topic and one on a new topic, and the students were given tasks to complete to demonstrate the seven aspects of literary engagement. Given a colored picture of a topic (relating to natural science) students first worked to write their knowledge of the topic before entering the next phase. Students were then given an opportunity to search for ideas and information about the topic of the assessment

independently. They were given a log to record their searching. Students were asked to draw a picture independently to show how one subject is different from another. Students were given a writing task with instructions to write an explanation of how ponds are different from rivers (for example).

Students were also asked to perform a task requiring them to transfer their knowledge to solve a new problem. Students were then given an expository text containing a prose, diagram, and a illustration. Students were asked to compare and contrast information from this new topic, similar to the way they had done it in the previous exercise. Students were then given a narrative of approx 1,000 words relating to their natural science theme. They were asked three questions, one dealing with recall, the second addressing author perspective on one character, the third addressing overall theme. Student performance was then coded according to a rubric evaluating responses on each assessment task. Students had been given a pre-test of a standardized test of basic skills for vocabulary and reading comprehension to use as a statistical control for individual differences.

The study suggested that the principles of CORI enabled students to increase their reading engagement within both a familiar and a new domain. On the performance assessment at the end of the year, CORI students showed relatively high levels of conceptual learning in the life science topic of ponds and deserts at both grades three and five. CORI classrooms showed higher motivated strategy use in this familiar topic than did traditional students, although the effect was larger for grade three students than for grade five students. Study suggests that CORI students' reading engagement and

conceptual learning were transferred to new domains of knowledge. In earth science, which was not taught in any of the classrooms, CORI students showed relatively high levels of conceptual learning. The CORI students' ability to gain new conceptual knowledge in the new knowledge domain was higher than that of traditional students at both grades three and five. Motivated strategy use in the new domain was also higher for CORI students than for traditional students at grade three. However, the traditional students were higher than CORI students at grade five. It should be noted that grade five CORI students were higher than traditional students in conceptual knowledge on the performance assessment. According to the researchers, it is possible that CORI students who were in fact motivated to use previously learned strategies in the new domain didn't record their learning in their search logs as fully as traditional students, perhaps because recording their learning was no longer a new strategy to them.

This study was quasi-experimental and the findings wouldn't necessarily by globally transferable since the students being studied do not represent a large enough sample of the population—they were students from urban low-income schools and wouldn't represent the broad spectrum of socio-economic and cultural diversity of the U.S. Also, different teachers provided CORI and traditional instruction so there may be a teacher effect rather than an instructional program effect. It is significant to note that this was a test of higher-order thinking skills, not such processes as word recognition or spelling. Further study would be needed to determine CORI's efficacy for such processes. The traditional teachers were frequent visitors to the CORi classrooms, and adopted some CORI techniques—this could indicate an "underestimation of the distinctiveness of the CORI program." To the degree this was done it undermined the

study. Also, the study did not attempt to define what "traditional instruction" was. Was it direct instruction or presentation model? Were the teachers themselves constructivist or behaviorist? A combination? To what degree? This would be important to understand in order to conclusively deem this study applicable to a wider range of students.

Students in the traditional classrooms were evaluated using methods that had only been taught to (mostly) to the CORI kids. What would have been the result had the students been evaluated in a third way that combined elements of traditional testing and CORI methods? Or taken standardized tests on the content knowledge and reading skills? The study assumed that the values that CORI teaches were the best ones (I happen to agree) for students to be learning. The study seemed to suggest that CORI classrooms facilitate student engagement and motivation and higher-level thinking skills, although this study is not nationally generalizable and had some flaws regarding distinctions between the classrooms.

Guthrie, Wigfield, and Vonsecker (2000) examined CORI methods again, in light of their effects on student motivation and increased strategy use. This quasi-experimental study took place with a diverse group of students at a school in a large Mid-Atlantic city. There were 55% African Americans, 22% Caucasians, 15 % Hispanic and 7% Asian or "other" students. All ability levels, disability status' and home backgrounds were included in this study. Students were divided into a control group of traditional teachers and CORI (concept oriented reading instruction) teachers. To train the CORI teachers, they completed a 10-day summer training program in CORI instruction. All teachers

completed a questionnaire about their teaching methods to make sure their classroom environments and teaching methods met the definitions of "traditional" and "CORI" as defined by the study. The teachers were all experienced and all volunteers. Teachers were between the ages of 41 and 50, had Bachelor's degrees plus at least 45 university credits, and between 20 and 24 years of teaching experience. The participants were third and fifth grade classrooms, pretty evenly divided between male and female, with two classes each in each grade of Traditional and CORI instruction.

The study took place over the 1995-96 school year, with two classes of students in each grade receiving CORI instruction, and two classes in each grade receiving traditional instruction.

CORI (Concept Oriented Reading Instruction) is an integrated, interdisciplinary teaching method. The method includes five variables: autonomy support, competence support, collaboration, learning goals, and real-world interaction. The method consists of four phases, a,) observe and personalize b) search and retrieve, c) comprehend and integrate and d.) communicate to others. CORI is based upon work with interdisciplinary and conceptual themes and students are given support in working autonomously, increasing their competence, collaborating with other students, developing and reaching learning goals and encountering a real-world setting for their knowledge. To meet the CORI criteria students studied units based on natural science concepts, (weather, solar system, etc) and read trade books rather than basal readers. Students performed observational and hands-on activities both outside and inside the classroom. Students personalized their learning by creating their own set of questions to guide their

observations, chose their own topics and books, and constructed their own goals for communicating to others. Students were allowed to relate to others by collaborating in self-selected peer groups to retrieve information and communicate their knowledge to others.

Traditionally organized instruction was characterized by following the lesson plans in commonly used textbooks and basal readers and having students answer the end-of-unit questions. Topics in science curricula were the same as those studied in CORI classrooms.

At the beginning of the year, data about past reading achievement was taken. Towards the end of the school year (April) students were given assessment to measure their curiosity, involvement, strategy use, recognition and competition. Curiosity and involvement were measures of intrinsic motivation and recognition (desire for public acknowledgement of performance) were measures of extrinsic motivation. Strategy use was relevant to both types of motivation. The study focused on how all of these factors worked together, rather than how any one measure effected motivation. The tool use to assess motivations and strategy use was the Motivation for Reading Questionnaire. The study measured Curiosity, Involvement, (intrinsic motivation) Recognition, Competition, (extrinsic motivation), Strategy Use and Past Achievement (a variable to control students' previous reading level).

CORI appeared to have a strong positive association with student curiosity ($p<001.$) in both grades, with the effect size being 1.94. However, CORI students were not different from traditional students in involvement. CORI students were significantly higher than traditional students in strategy use ($p<.05$, effect size 1.71).

It was expected by the authors of the study that the fifth grade classes would have lower motivational scores, since motivation to learn has been demonstrated in some studies to decrease in later grades. CORI students did not differ from traditional students in recognition or competition, aspects of extrinsic motivation. For recognition, fifth graders were significantly lower than third graders (p<.05), In competition, fifth graders also scored lower than third graders (p<.05). For curiosity and involvement (intrinsic motivation) there was no significant difference between the two grades.

It appears that the CORI teaching method is effective in increasing intrinsic motivation as defined by curiosity, but not involvement. It was effective in increasing strategy use, but has little effect on increasing extrinsic motivation as defined by recognition and competition. fifth graders in CORI classes did not have a reduced effect on their intrinsic motivation (curiosity and involvement), or strategy use, but did on their extrinsic motivation (recognition and competition). It appears integrated teaching techniques might be useful to combat decreased motivation to read as students become older, although the authors conceded more studies about the effect of age on motivation are needed.

Nichols and Utesch (1998) suggested that alternative schools should create an environment which is engaging to the students who attend. They also predict that effective alternative learning programs would increase self-efficacy and self-esteem.

This study examined the effects of an Alternative Learning program on self-efficacy and ability to regulate their own activities. Students who had "lost the privilege"

of attending their home schools were enrolled in this district-wide 12 week program. The authors assert that alternative learning programs which increase student self-esteem and motivation a.) generate and sustain a learning community and b.) make learning more engaging for the participating students and c.) sustain a structure that supports the first two goals.

The Alternative Learning program being studied stated its purpose was to a.) assist at-risk youth in developing academics skills while focusing on issues of self-esteem and social skills and b.) provide a short term alternative instructional program for those students in Grades six to twelve who had lost the privilege of attending this home school setting, usually from behavior problems. There are three "levels" at this school and students progress from one level to the next by participating in counseling, displaying appropriate behavior and passing all academic classes. Students also have daily classes to teach prosocial skills, such as planning and study skills, coping with feelings, alternatives to aggression and stress management. The authors of the study did not explain specifically how this program was designed to increase any of the variables.

The sample for this study was very small. Upon entering the program 65 students (49 boys; 16 girls, including 30 African Americans, four Hispanics, six Native Americans, and 25 European Americans) completed a survey (66-item Likert-type questionnaire) to assess various aspects of motivation and self-esteem: learning goals, performance goals, intrinsic motivation, extrinsic motivation, self-efficacy, persistence, self-regulation, peer self-esteem, school self-esteem and home self-esteem. Of the original 65, 39 students took the same questionnaire upon finishing the 12 week term.

The final sample contained 29 boys, and ten girls: six sixth graders, eight seventh grades, ten eighth grades, eight ninth graders, two tenth graders and five eleventh graders. The authors of the study reported that, because of the small size of the study, differences in gender, ethnic background and SES were not explored. This is a weakness of this study.

In the pre-test there were significant correlations ($p. < .01$) between self-regulation and extrinsic motivation, school self-esteem and home self-esteem, Learning goals and intrinsic motivation, learning goals and self-regulation. There were also significant correlations ($p. < .05$) between self-efficacy and intrinsic motivation, persistence and self-efficacy, performance goals and intrinsic motivation, performance goals and learning goals, intrinsic and extrinsic motivation, self-regulation and home self-esteem.

Students who completed the program showed increases, at a significant level, of extrinsic motivation ($p < .01$); persistence ($p. < .05$); home self-esteem ($p < .01$); peer self-esteem ($p < .01$) and school self-esteem ($p. < 01.$).

It is also interesting to note that the program did not increase intrinsic motivation or self-efficacy, but without knowing more about the specific school environment it is difficult to hazard a guess as to why.

The findings for students who did not complete the program were initially higher in extrinsic motivation and peer self esteem. This could possibly mean that students who later dropped out did not make the connection between the program and future relevance to their lives, possibly because they were more strongly motivated by extrinsic rewards

(e.g. getting out of trouble). As far as the higher peer self-esteem, it could be that the students' peer groups did not value academic performance.

The authors of the study readily admit that the small sample size was a significant drawback to this study. This study would have been more informative as a qualitative study because of the small sample size. Qualititative measures also could have shed light into what specifically about the program increased motivation and what decreased it. Observations of factors contributing to classroom environment would have been informative as well. Classroom environment has been shown to have significant effects on student motivation and engagement (Conchas, 2001; Freeman and Anderman, 2005). Interviews with students who withdrew from the program could have been insightful about what the flaws of the program might have been.

All in all, the research examined in this chapter, while far from exhaustive, sheds light on several issues surrounding motivation and engagement in the classroom. Mastery goal orientations on the part of students are associated with many positive outcomes. Increased strategy use and increased perseverance and flexibility are associated with mastery goal orientations (Radosevich et al., 2004; Soares, et al, 2005; Zimmerman and Martinez-Pons, 1990). Motivational and engagement patterns can by shaped by teachers (Freeman and Anderman, 2005).

Educators influence positive motivational patterns through their use of effective feedback in the form of comments rather than grades or praise (Butler, 1987). High expectations were a consistent predictor of student goals and interest (Wentzel, 2002). Rewards were shown in at least one study to have a positive effect on intrinsic motivation

but the study in question did not study participants in an environment similar to that of a classroom (Cameron, et al., 2005). Grades and negative feedback were found by several studies to be negatively associated with student interest and motivation (Butler, 1987; Wentzel, 2002).

Studies about flow theory suggested that students would increase their participation in activities where they experience flow. Basically, if an activity was enjoyable and engrossing with an optimal level of challenge and skill, students would probably continue doing it into their futures (Hektner and Csikszentmihalyi, 1996). Although the data said that increasing the amount of time spent in flow would increase intrinsic motivation, there was little information in the study about how teachers were to do that. Flow was also associated with higher intrinsic motivation to do the activity where flow occurs, as well increases in self-efficacy related to the activity (Hektner and Csikszentmihalyi, 1996; McQuillan and Conde, 1996; Shernoff and Csikszentmihaly, 2003).

Suggestions for increasing flow, or at least situations where flow could occur, had much to do with students' intrinsic interest in an activity or their perception that the activity was relevant to their life or goals (McQuillan and Conde, 1996; Rathunde and Csikszentmihalyi, 1996; Shernoff and Csikszentmihaly, 2003). However, despite all of the good new about optimal experience it is just that….optimal. The components and outcomes of flow were the same as the components and outcomes of intrinsic motivation and cognitive engagement previously mentioned in this chapter. One study which did have many practical implications for the use of flow was a comparison between

Montessori and regular public schools which were comparable in terms of student SES, racial demographics and parental involvment, and the amount of flow students encountered in each setting (Rathunde and Csikszentmihalyi, 2005). It turns out that Montessori methods, which allow students to explore topics relevant to them and develop undivided interest (part of optimal experience) in their subjects had better motivational outcomes almost across the board than more traditional methods used in public schools. This suggests that allowing time for undivided interest in a topic relevant to the student could very well increase intrinsic motivation and engagement, at least for that topic.

Summary of Findings

So, what is relevant and interesting to students? The answer is, that depends. It is not merely the content area but also the environment and methods used to teach it, which are important. Studies of students in Hawaii showed that they had higher self-efficacy in biology—not surprising since as rural native Hawaiians they lived in a bio-rich environment (Yamauchi, 2005). It is possible that ethnicity plays heavily into what, or how, something is interesting.

The 'how' part of the interest equation was most evident in the study by Conchas (2001). In this qualitative study of student high school experiences in a school-within-a-school program, it wasn't merely the fact of being within a smaller learning community, but how the learning community was set up. For the diverse students in Conchas' large high school, competitive orientations (performance orientations) in their learning communities were not effective. When students used more cooperative methods of learning they were able to excel both motivationally and academically (Conchas, 2001).

Culturally relevant pedagogy seems as important as content relevance in increasing academic motivation and engagement and much can be done by the teacher.

It is more probable that effective teaching, rather than computer programs or other materials, which makes for good motivational and engagement outcomes. Tools are only as good as their operators. Teaching, rather than good technology, allowed students to experience high degrees of motivation and enjoyment while creating hypertext documents (Chen and McGrath, 2003) and simply the fact of learning on line did not increase motivation more than a regular classroom (Rha et al, 2003).

In summary, there are many facets of motivation and engagement and they all work together to create a variety of motivational outcomes in a variety of differently motivated students. There is no silver bullet for improving motivation and engagement. Cultural congruence, relevant subject matter, student choice of material and tasks, and the promotion of mastery structures in the classroom seem to be positively be associated with more adaptive motivational outcomes. Some of the most important influences on motivation are the classroom teacher and the school structure.

CHAPTER FOUR: CONCLUSION

Introduction

I'm back in my student teaching classroom, this time puzzling over another student I'll call Skip. Skip seems completely engaged in every class. He's a literature teacher's dream because he enjoys reading aloud. During a read-aloud theater of Arthur Miller's *The Crucible* he has the whole class spellbound. I wish I had his theatrical skills myself. Skip is also a fountain of information. He enjoys the historical and political context of the reading material and often studies it on his own. He's funny and engaging and his presence gives the class an energy I look forward to every day. Skip's grade for the class is an F. He has turned in absolutely no work and doesn't answer any of the questions on his tests and quizzes. Other than making classroom participation a larger part of students' grading, I can't figure out how to help Skip. Skip is capable of writing and hasn't been diagnosed with other learning disabilities. One day after a deadline for a paper has come and gone, Skip came into class carrying banana bread. He says that his plan was to give me a loaf of banana bread and hopefully I would allow him to turn in his paper a day late. He became so focused on making the banana bread that he didn't actually have time to do any other work. He turned in banana bread but no paper, late or not. Shortly afterward my time at the school was finished. I still ponder about why such an obviously bright young man with an interest in literature is unwilling or unable to do enough work to pass the class.

So how could all of this research in motivation translate into practice in a language arts classroom? What specifically, could I do to help Skip and the other

students in my class engage with my classroom content and want to do the work of learning? The first strategy teachers could use to improve classroom practice would be to understand the effects of various kinds of goal orientations on their students. Some well placed questions about students' motivations and interests could go a long way to informing the teacher about what is helping or hindering her students.

Summary of Findings and Classroom Implications

The research which I examined for this paper various promising ways to help increase intrinsic motivation and cognitive engagement for secondary language arts students, or any other students for that matter. Increasing perceived relevance of coursework to student's lives (Greene, et al. 2004); allowing students time for undivided attention to tasks which are motivating and engaging to them (Rathunde and Csikszentmihalyi, 2005); and teaching increased cognitive and metacognitive strategy use (Radosevich et al., 2004) are all techniques which show promise.

However, one common thread running through much of the research I reviewed was the importance of mastery goals, both in the student as an individual and in the atmosphere of the classroom. Mastery goals seem to lead to learning and a host of other good outcomes. Mastery goals are positively correlated with persistence (Elliot et al., 2005), cognitive engagement (Greene, 2004) and increased strategy use, (Radosevich et al., 2004). It would be important to increase mastery goals in students through any means available.

One way to increase mastery goals in students is to change their perception of mastery goals in the classroom. I wonder if my young friend Skip, having wowed us all

with his literary prowess, was afraid to turn in a paper which was less than stellar. The perception that it is okay to work one's way to mastery of a subject—rather than performing flawlessly from the beginning—can inspire students to adopt mastery goals and greater self efficacy in the class in question (Bergin, 1995; Greene, 2004).

In the research I reviewed teachers were able to increase a mastery learning environment in the classroom through simple means, making it an easy strategy for teachers to use. For example, some researchers simply instructed students that there was a mastery goal for the work they were about to do, and this increased students perceptions of mastery goals in the classroom (Elliot et al, 2005). A teacher could begin his or her introduction of the task by saying "we will be becoming familiar with these skills or concepts and learning to know and do them well." Teacher feedback is another powerful way to increase mastery learning environments as well, and I will be discussing it further later in this paper.

Finding coursework relevant to the students' lives seems to be one way to increase motivation, engagement and mastery orientation (Greene, 2004). Perhaps it would help students to have a hand at creating their own curriculum. More student choice in learning materials and activities has been shown to increase perceived control over the learning environment, which positively effects the feeling of relevance. Relevance, when coupled with motivation, leads to undivided concentration. (Shernoff, et al. 2003) Perceived relevance may have helped Marty, the student introduced at the beginning of Chapter One. Marty did not want to participate in class because he didn't know what language arts had to do with his planned career of landscaper. Marty's

perception of classroom relevance may have improved had he been able to write proposals for prospective landscaping jobs, for example.

With all of this discussion of mastery orientation, I should also note here that while it is usually a good thing, performance motivation can also be adaptive when coupled with mastery orientation. It appears that being exclusively Mastery Goal oriented does not necessarily translate into significantly higher grades (Pintrich, 2000). Some performance goal orientation is effective in classrooms, especially in meeting the criteria for letter grades. It appears that whether students have high mastery/low performance or high mastery/high performance goals there is little difference in their academic achievement levels. The maladaptive strategy is one of the ratio of performance to mastery goals, students who have high performance but low mastery orientations are more likely to have reduced self esteem, performance and persistence (Pintrich, 2000).

However, although it appears that students' performance approach goals are more adaptive than previously thought, classroom climates with too much emphasis on performance instead of mastery, are associated with student stress, isolation and disengagement (Conchas, 2001).

It also appears that teachers have a distinct effect on improving the perceived goal orientation of their classrooms, and in creating effective learning communities. Teaching methods which create a task- or mastery oriented climate increase students' strategy use, and the possibility that students will practice their skills on their own (Gano-Overway and Ewing, 2004).

The creation of smaller schools, or even smaller learning communities within larger schools, where students can work together in an atmosphere of cooperation, high academic standards and shared interest, would be an effective strategy for increasing student motivation and engagement, as well as (Finn and Voelkl, 1972; Conchas, 2001). This is probably because a welcoming, accepting atmosphere and the perception that a student's ability level is acceptable to the teacher and other classmates, promotes a mastery orientation. Using team-building exercises and taking the time to create a supportive atmosphere by getting to know one another on a personal level would be worth the time invested if it pays of in student learning.

Another way teachers influence goal structures in the classroom is through feedback they give to students about their work. While some studies on giving rewards do suggest that they increase task interest (Cameron, et al., 2005) those studies were mostly carried out outside of a classroom context, with only the researcher/s and the participant. Based upon the research I've reviewed I feel that in a classroom situation extrinsic rewards (stars, stickers, free time, etc.) could possibly increase the competitiveness in the classroom environment, lessening the potential for mastery goal orientations and their attendant positive outcomes. Similar to rewards, Praise for student work, as well as grades, are also problematic for increasing intrinsic motivation and interest (Butler, 1987, Conchas, 2001).

It appears important to use comments instead of praise or grades to keep a mastery oriented environment. Comments consist of explaining what teachers observe in student work in a nonjudgmental way, making suggestions for incremental further work if necessary (Butler, 1987). It seems students who receive comments instead of grades

or praise may attribute success more to factors involving the mastery of the material than extrinsic factors. They also received higher scores on the task which were asked to do (Butler, 1987).

Many students have grown up with grades, praise and rewards, however, and it may take some time to increase mastery goals. One student I'll call Denise appeared to me to have a strong performance goal orientation. Whenever she received a paper she scanned it for the grade. She wrote copious amounts of words on her essays, but after a while I began to notice a pattern. Denise made the same stylistic and grammatical errors over and over. She wrote faster and longer, but probably not better than a seventh or eighth grader. She had been getting excellent grades by completing her homework on time, attending school regularly and complaining vociferously about any grade which didn't meet her standard. Her classroom behavior was impeccable, she sat in front and raised her hand immediately if she new the answer to any factual question. However, she had to work to grasp conceptual knowledge and build arguments in her essays. Higher order thinking skills were difficult for her, even after we went over them in class. The look of horror on her face when I gave her a C (grades were required) spoke volumes. When I left off the grade and gave her comments instead, she didn't fare much better. Until she knew her A was safe she had a hard time focusing on any feedback at all. Although it wasn't examined in the research, it appears to take time to change from performance to mastery goals. Denise also needed to know that I wouldn't, by giving her an artificially low grade, frustrate her plans for going to college. She was unsure about her ability to do the work successfully and afraid of failure. She was unwilling to try new methods, especially since the old methods gave her the outcome she sought: straight A's.

In my opinion, Denise's self-efficacy, her feelings about her own abilities, and her performance orientation may have prevented her from trying out new concepts and strategies.

Self-Efficacy, the feeling that one can accomplish the work at hand successfully, is significantly related to students' use of self-regulated learning strategies. Strategy use, particularly metacognitive strategy use, is an important part of cognitive engagement. Since adolescents also have a need for independence and are moving away from adult help (Zimmerman and Martinez-Pons, 1990) they have need for greater instruction in strategy and metacognitive strategy so they can begin to be more self-directed in their learning.

I have given three examples of students from my student teaching experience who seemed to have motivational problems. All learners have a slightly different set of motivational beliefs and strategies. This again underlines the need for teachers to understand the many facets of motivation and to have a repertoire of ways to increase motivation and engagement.

Many of the aforementioned components of intrinsic motivation and cognitive engagement are present in the study of optimal experience. Components such as materials and pedagogy relevant to student's lives, persistence and strategy use are associated with flow, along with 'optimal levels' of challenge and skill. Optimal experience theories seem to explain what it looks like when everything is working in harmony and unison. Flow is the perfect storm of motivation and engagement. In that sense I found the research endlessly fascinating. It was particularly exciting to see flow in action in life and at school.

Last summer at the beach my children and nieces and nephews were playing in the sand. I taught my oldest niece how to make drip-sand castles. She proceeded to make a few which attracted the attention of the other children. It was something new and somewhat challenging. Soon the oldest children were busily making the lopsided little sand castles. They noticed that the holes from which they scooped the sand up to make the castles made nice little puddles. Soon they began to build castles atop castles and form walls around the puddles. The whole enterprise took of from there. They began to work together to create walls. The younger children came over to sit in the puddles and began scooping up what mud they could and building their versions of walls or just splashed in the puddles. The little fortress branched out and somebody decided they needed to create roads and bridges between the little puddles. Soon the sand was like an orchestra of activity, each person working at his or her own level on what was interesting to him or her. With each person busily working they created an enormous structure and entertained themselves for hours, experimenting upon their physical worlds and playing creatively. Finally the tide began to come in and seven children, from two to 11 years, waged a happy losing battle against nature as they giggled and tried to keep the water from encroaching upon their fort.

This, I thought, was flow. Everyone was at an optimal level of skill and challenge. Their abilities were growing, they tried out new strategies and were completely engrossed in the activity for an extended period of time (no mean feat with a 2-year old.). They also had undivided interest and were focused on both the process and objective of their work at the same time. All of this proceeded from a quick demonstration of how to build a drip-sand castle. It was wonderful. I could identify all

of its component parts but I couldn't re-create the experience if I tried. There are, however, a number of things which educators can do to increase the likelihood that their students will have an optimal experience in the classroom.

The component parts of flow, challenge and skill, interest and enjoyment, are something that only the person experiencing flow can re-create at the right levels. So, given the research I believe that the most important thing a teacher can do it to make sure all of the component parts of optimal experience are available to the student in the classroom.

Allowing students more opportunities to be self-directed in their work and engage in subjects and activities which interest them; limiting teaching done in lecture formats; increasing teaching done in small, cooperative groups, and encouraging democratic classroom management where students have input into the class rules and norms are all within the reach of the classroom teacher. All of the aforementioned techniques have also been associated with the increase of flow, or optimal experience, in the classroom (Rathunde & Csikszentmihalyi, 2005). Flow has in turn been associated with a host of good motivational and engagement outcomes, including increased self-efficacy, intrinsic motivation, and a greater likelihood that the participant will continue with the activity in which he or she experienced flow (Hektner, J.M. and Csikszentmihalyi, M., 1996; Shernoff, et al., 2003).

Another thing which the research on optimal experience had which recommends it highly was many studies from different cultures both in the U.S. and around the world, only some of which were applicable to this paper (Rha, 2005; Bong, 2004). Flow seemed to be an almost universal concept and might be very applicable to helping with the

challenges of educating a diverse group of students.   Much of the research on optimal experience, at least that associated with Csikszentmihalyi, was careful to study a diverse demographic (Rathunde and Csikszentmihalyi, 1993; Shernoff et al, 2003).

Unfortunately, diversity was not the rule in much of the other research I found. As in most fields of inquiry, more intentional study of people of color, diverse ethnic groups and a variety of socio-economic status' is sorely needed.

Summary of Findings and Implications for Further Research

In general, more information is necessary to understand clearly how different goal orientations effect students from diverse ethnic groups and socio-economic statuses. For that matter, it would be important to understand if people with different learning preferences and abilities experience motivational climates differently.

It may seem paradoxical, but students need strategies for overcoming lack of motivation when subjects aren't intrinsically motivating but are nevertheless required. Besides creating a mastery learning orientation in the classroom, it would be important for teachers to know strategies for generating situational interest in their students and for working through lack of motivation. This is a lingering question for me as I worked through this rather long paper. Many times it was an extrinsic fear of not graduating, rather than an intrinsic interest in the material, which kept me going.

As much as teachers who are concerned with creating a learner-centered classroom may wish otherwise, we will all probably, at some time, be required to teach a subject or require our students to meet a standard which is difficult for us and them. For that matter, our students will probably always have things in their lives which they must

do to meet other ends but which are not intrinsically motivating in themselves. Anyone who has every changed a tire, scrubbed a bathroom or written a 150 page master's paper has probably had that experience.

Historically speaking, there has always been tension between what is intrinsically motivating to the student and what outside forces would have him or her learn. Whatever interests and powers influence the government (local, state and federal) will also influence the school environment (Spring, 2005). Schools reflect the society of which they are a part, for good or ill (Spring, 2005).

However, learning cannot occur unless the student notices and is interested in what is to be learned. It is the discrepant event, the novel and the new, which forces the brain to create new neuronal networks. The physiological work of learning can only be done by the learner (Zull, 2002). Learner-centered learning is the only kind of learning that there is. Students need to be motivated to learn and teachers need to help create a climate in which they can experience optimal experience and follow their intrinsic motivations, or learning will not occur and disengagement will rise. The fact that the dropout rate continues unabated in the face of current school reform demonstrates that unfortunate reality.

When I set out to write this paper, I was (and am) most interested in intrinsic motivation and cognitive engagement, mostly because of their correlations with academic achievement, self-efficacy and other adaptive outcomes for students. What I realized in the course of writing this paper is that it is very difficult to separate cognitive engagement from emotional and behavioral engagement, and intrinsic from extrinsic engagement, in a complete and clean way. All of them are related, and can be paths from one to another.

Effective teaching practice for promoting intrinsic motivation and cognitive engagement is one of degree, of keeping the right balance. Some concern about performance is effective in achieving academic rigor and completing good work. Some emotional or behavioral engagement can put a student in a position to engage cognitively, and vice versa.

The techniques which teachers have at their disposal to increase intrinsic motivation and cognitive engagement are many and varied. However, they are often as simple as the way the purpose of an assignment is explained, or the way in which a teacher gives verbal and written feedback to his or her students. It requires more skill to do things such as set up the classroom for cooperative group work, and create classroom formats where students might follow their own interests, some initial effort and a learning curve is a small price to pay for the enormous benefits to students.

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