

WHAT ARE MY STUDENTS TALKING ABOUT?  
COOPERATIVE LEARNING AND AUTHENTIC DISCUSSION

by

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## Abstract

What is the benefit of knowledge if students and citizens can't communicate it in constructive ways? This action research project examines the relationship between cooperative learning and authentic discussion in an elementary math classroom. More specifically, the research is focused on how cooperative learning activities can be used to facilitate authentic discussion and dialogue amongst students in a third-grade mathematics classroom. Data sources included video and audio transcripts, student surveys, and a personal research journal, and I collected data over a six-week period during student teaching in the first quarter of the school year. Using an open-coding analysis process, I found that the socio-academic norms necessary for strong cooperative work were identical to those needed for authentic discussion. Furthermore, status characteristics identified at the beginning of the quarter were strong indicators of participation in both learning formats, and many students were prone to blaming others when discussing challenges in their work together. This negative affective response did not reduce the authenticity of the discussions, but rather the frank representation of students' experience led to an exploration, and were indicative, of a positive classroom climate in which students felt safe to take risks and influence the topic and direction of the conversation. Lastly, open-ended questions increased participation and welcomed discussion on both academic and social-emotional content.

## Acknowledgements

The road of a transformative educator is long, and could not be walked had others not forged its path over the generations. Like Frost, I think I have taken the one less traveled, and I expect it to make all the difference. I'd like to thank all the teachers, activists, and thinkers who had and have the courage to criticize the system in which they work while acknowledging the benefits they receive from it. I thank the participants of this study, who remind me why I love teaching, and my mentor teacher, whose democratic approach to education and learning allowed the construction of knowledge that follows. I want to thank the many editors of this paper, especially Lester Krupp, for their continued interest in my success. I thank my family, the first community of which I was a part, for continually showing me the power and depth of human connection. And lastly, I want to thank my colleagues who have accompanied me through this process. Your joy and laughter will ring in my heart and resonate through my classroom for years to come.

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## CHAPTER 1: REVIEW OF LITERATURE

### **Statement of Problem**

The current state of education does not adequately prepare students to participate in a society that has democratic ideals at its core (Noddings, 2013; Parker, 2006; Shor & Freire, 1987). The democratic process, while touted as the foundation of the structure of our society, is not being taught to students in the classroom (Battistich, Watson, Solomon, Lewis, & Schaps, 1999). While authentic discussion, dialogic talk, and cooperative learning have become catch-phrases for ideal classroom practices, they are seldom found in full implementation in any grade level, thereby stifling the opportunity for students to develop and strengthen their ability to engage in the very process that we believe to be instrumental in the maintenance of our country (Hadjioannou, 2007; Parker, 2006). The sequence of teacher initiation, student response, and teacher evaluation (IRE) is the predominant mode of discourse, despite the fact that it does not represent the purposeful deliberations and actions that we celebrate in the great moments of our country's, and the world's, history (Parker, 2006; Wells & Arauz, 2006). Furthermore, with the implementation of high-stakes tests and the robust standards that fuel them, teachers are implicitly or explicitly discouraged from pursuing less quantifiable methods of learning such as those mentioned above, those that revolve around interpersonal communication (Noddings, 2013). Yet, society is built upon communication, and "all communication (and hence all social life) is educative" (Dewey, 2008, p. 7).

While the dominant mode of schooling fails to maximize the communicative potential of students, it also contributes to the phenomenon of social reproduction in which socioeconomic class status is reproduced through systemic inequities in resource distribution, including that of qualified teachers (MacLeod, 2009). Research shows that working-class and poor families are less likely to advocate for themselves as they navigate through institutions, and more likely to fear the power of dominant institutions, than members of the middle and upper socioeconomic classes (Lareau, 2002). The IRE mode of discourse creates a dominant relationship in the classroom and is likely to condition students to accept that dominance as an appropriate relationship when they enter the wider world. For this reason, students must be encouraged to engage in dialogue that is supported by thoughtful inquiry, and teachers must be trained to create a space where dialogue in general and discourse around issues of social and historical justice may occur (Mason & Ernst-Slavit, 2010; Parker, 2006). Though the national movement in education reform—standardized tests of students upon which a teacher’s and school’s efficacy is measured—stands in opposition to the skills that mainstream American ideology alleges to be indispensable, many educators are finding ways to incorporate discussion, cooperation, and genuine student interest into their pedagogical practices (Battistich, Solomon, & Delucchi, 1993; Hadjioannou, 2007; Slavin, 1987). The school in which this study took place is one in which these elements (discussion, cooperation, and intrinsic motivation) are the goal. Bristol<sup>1</sup> Elementary (a pseudonym) is an alternative public elementary school in a small city in western

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<sup>1</sup> All names are pseudonyms



Washington State. The Bristol Philosophy includes the teaching and practice of multiple intelligences, cooperation, social justice, and sustainability. Bristol believes that learning should nurture a sense of caring for other people and the environment, and program goals include students seeing themselves as participants in their education and students learning in an atmosphere of mutual respect and support. In order to increase and sustain students' intrinsic motivation to learn and engage, extrinsic rewards are not used as a classroom management strategy (Deci, Koestner, & Ryan, 2001). Students in the school often write about artists and historical figures who have brought awareness to social issues such as bullying, gay rights, and gender stereotypes, and they engage in community service through planting and harvesting vegetables that are donated to the local food bank. Furthermore, parents are involved in the governance of the school, are often present in the classroom, and have chosen for their children to attend a school with such ideals.

In many ways, Bristol Elementary is advanced as far as preparing students to value the rights of all members of society to engage in a democracy that seeks to provide for the common good and work towards a "more perfect union." Cooperative learning methods are the norm, and students are encouraged to find and develop their own voice regarding issues that are important to them. While cooperative learning and political awareness and engagement are pillars of Bristol's philosophy, student-led discussions, especially those in which multiple perspectives are deliberated, are limited. For this reason, I studied how the cooperative learning structures and social justice foci that are already in place can be used to facilitate dialogue and authentic discussion in the elementary classroom. The questions that

guided this study are: 1) What is the relationship between cooperative learning and classroom dialogue? and 2) How can cooperative learning models be used to facilitate dialogic discussions within the classroom?

### **Cooperative Learning**

Cooperative Learning (CL) is a student-centered, instructor-facilitated model in which small groups of students are responsible for their own learning and the learning of all group members (Li & Lam, 2005). CL has been shown to increase achievement in reading vocabulary and comprehension, language expression, and math computation (Johnson & Johnson, 1979; Stevens & Slavin, 1995). Furthermore, it improves social relations among students, reduces stigmas against students with disabilities, and increases students' ability to engage in political discourse (Johnson & Johnson, 2009; Stevens & Slavin, 1995). While there are several different varieties of CL, all share five fundamental characteristics: interdependence among group members, individual accountability, face-to-face interaction, development and use of appropriate social and collaborative skills, and group processing (Li & Lam, 2005). While many teachers incorporate one or all of these aspects into their pedagogy, few follow one method of CL exclusively. Rather, teachers pick and choose the elements that fit their beliefs, goals, and classroom conditions (Emmer & Gerwels, 2002).

### **Theoretical Foundation**

Cooperative Learning is built upon the social constructivist framework proposed by Lev Vygotsky (1896-1934). By studying the growth of children through their interaction with others, Vygotsky found what happens in the social environment, including the physical and aesthetic features, helps children learn,

develop, and grow (Bennett & Flores, 1998; Li & Lam, 2005). This social context incorporates the larger culture in which a child lives, in this case the United States, as well as the immediate setting, the public school classroom, and everything in between that shapes a child's vision of the world (Miller, 2011).

The primary contribution of Vygotsky to education is the concept of the Zone of Proximal Development (ZPD). As quoted in Miller (2011), he defined the ZPD as the "distance between a child's actual developmental level as determined by independent problem solving and the higher level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 174). Vygotsky further contended that the higher level of development cannot come to fruition without social interactive support from peers and teachers (Li & Lam, 2005). The process through which peers and teachers offer support is known as scaffolding. Scaffolding is the "assistance given to students in completing tasks that they cannot complete themselves" (Li & Lam, 2005, p. 3) and builds on the competencies that are already present in the student (Miller, 2011). Furthermore, this can be an explicit or implicit process. Children will learn as a by-product of involvement with more competent peers and, in the classroom, naturally model the behavior of those perceived as having higher competence (Gillies & Boyle, 2006; Miller, 2011). Through this process of communication, where a student conveys his or her current level of understanding and a peer responds with a degree of support, ideas are exchanged, information is received, and learning occurs (Gagné & Parks, 2013).

## **Motivation and Cooperative Learning**

Li & Lam (2005) demonstrate the amount of research that has been done to determine the cause of CL's success. While the cognitive element of Vygotsky's work has been useful in understanding how social interaction can influence academic (and social) development, researchers have studied motivation to understand student engagement. According to Slavin (1987), the degree to which students will apply themselves to their learning is a primary factor of motivation. Deci, Koestner, and Ryan (2001), in their meta-analysis of motivational studies, found that all tangible rewards that were expected and/or task-contingent undermined student motivation. The findings suggest that, rather than focusing on rewards for motivating student learning, educators should focus on how to foster intrinsic motivation through supporting autonomy, relevance, and optimal challenge (Deci, Koestner, & Ryan, 2001, p. 15). However, the analysis found that verbal rewards, often referred to as positive feedback, had the effect of increasing student motivation through augmenting perceived confidence and feelings of success when the verbal rewards are given in a non-controlling way. The author's argue that when the interpersonal context is one that is perceived to pressure a student to "think, feel, or behave in particular ways" (p. 4), it will have an undermining effect of intrinsic motivation. If not, these rewards "tend to have an enhancing effect" (p. 4). This corresponds with Emmer & Gerwels' (2002) and Schweinle, Meyer, and Turner's (2006) findings that teacher feedback was a recurring theme in the success of CL lessons and that such feedback strongly correlates to positive affect in

students. However, students who received negative feedback in the form of low report card grades demonstrated a negative correlation between feedback and internal motivation (Gottfried, 1990). This suggests that external reinforcers such as good grades and rewards have complex effects and certainly affect those who receive positive feedback differently than those who receive negative or neutral responses.

Hidi and Harackiewicz (2000) investigated the complexity of these factors in their review of existing literature. They identified two broad contributing factors to student motivation: *individual* and *situational* interest. While individual interest is conceptualized as a relatively stable motivational force over time that is associated with increased knowledge, value, and positive feelings, situational interest refers to the environmental factors that focus attention, and it is a “more immediate affective reaction that may or may not last” (Hidi & Harackiewicz, 2000, p. 152). Because less is known about how individual interest develops, and due to the constraints of the classroom, educators have focused on elements of situational interest such as task importance and the learning environment while providing choice and challenge and supporting autonomy (Deci & Flaste, 1995; Schweinle, Meyer, & Turner, 2006). After a thorough investigation of the relationship between academic interest, motivation, performance and mastery goals, Hidi & Harackiewicz (2000) concluded that, while mastery goals and intrinsic motivation lead to greater learning and positive affect, the narrative that pits external against internal motivation, and performance goals against mastery, narrows the possibility of providing an education that suits each individual student.

This tension between using rewards as a motivating force and relying on affective response to increase engagement exists within the CL literature as well. Slavin (1987) states that it is unlikely that students' intrinsic motivation will carry them through 900 hours of annual instruction, and that group contingencies based on the individual learning of group members are necessary for increased achievement through cooperative learning. However, Johnson & Johnson (2009) emphasize the cultivation of social skills, a humanistic and internal motivational factor, that contribute to the value of an academic experience. These skills can be developed in the absence of external rewards.

### **Dialogue in The Classroom**

Discussion, at its best, is a way of tapping into and contributing to the expertise of a community and is fundamental to knowledge acquisition (Berry & Englert, 2005; Hadjioannou, 2007; Parker, 2006; Wells & Arauz, 2006). However, while many teachers agree on the importance and potential learning opportunities that classroom discussion affords, its use in the classroom is limited (Alvermann, O'Brien, & Dillon, 1990; Parker, 2006). In Alvermann, O'Brien, and Dillon's (1990) quantitative analysis of what teachers do when they say they are having discussions, the authors found that all teachers in the study held intellectualized definitions of what a discussion is and what it should look like. Prior to their observations, teachers involved in the study "defined effective discussions as those in which students are active participants and thoughtful sharers of information" (p. 306). This is similar to Chinn, Anderson, and Waggoner's (2001) definition that "a discussion is the everyday principle that learners must be active agents in their own

learning” (p. 378). While teachers seem to be in agreement about this definition, these studies show that this ideal exists mostly as an aspiration that is not regularly realized in practice. Though many teachers provide intellectual definitions of discussion that align with current research, studies find that *authentic* discussions (Hadjioannou, 2007) , *true* discussions (Wells & Arauz, 2006), *open-forums* (Alvermann et al., 1990), and *Collaborative Reasoning* discussions (Chinn, Anderson, & Waggoner, 2001), all of which share similar characteristics, are infrequent in practice.

In Alvermann et al.'s (1990) analysis, researchers observed 24 middle-school classrooms in four different school districts to determine what teachers and students were doing during interactions that the teacher called discussions. Students in these schools, three rural and one urban, ranged from lower to upper-middle socioeconomic status and constituted a racially diverse sample. Data were collected over a period of two semesters and across a variety of subject areas, and researchers found that “differences in school sites, grade levels, academic tracks, and content areas made no difference in the holistic classification of discussions” (307). All of the discussions that were observed met the criteria for one of the holistic classifications—lecture/recitation, recitation, or open-forum discussions—and though the teacher’s purpose for a lesson did influence the type of discussion, the majority of interactions observed were recitations or lecture/recitations.

The researchers took formidable measures to ensure the credibility of their study by having two phases of coding, one based on tentative categories and random selection of transcript excerpts and one based on evolving theory that

compared incidents from every tentative category and property already generated. This was done by an outside coder with vague knowledge of the purpose of the study. This allowed the researchers to compare whether the excerpts they had chosen represented the same constructs to a coder not involved with the data analysis as to the researchers themselves, while also providing a basis and opportunity to modify their classifications. The authors also utilized member checks and multiple data sources and researchers to validate and triangulate their conclusions. However, the participants in the study did not confirm their conclusions. The teachers, while watching the recorded classroom sessions, maintained that they were in fact facilitating discussions, even though the structure of the talk resembled a lecture or lecture/recitation. This is not a weakness of the study, because recitations are deeply embedded in the realities of classroom practice (Chinn et al., 2001; Hadjioannou, 2007; Wells & Arauz, 2006), and discussions are so deeply embedded in the ideology of our democracy (Parker, 2006). It is understandable that teachers would struggle to accept that they are not in fact facilitating dialogue in the classroom when they have intellectualized this as an ideal form of instruction. Rather than this tension reflecting a weakness of the study, this tension points to the reality that teachers are well-practiced in the delivery of content, while students are equally well practiced in its passive reception (Alvermann et al., 1990; Freire, 2000)

Though the credibility of the study remains strong, the dependability was diminished by the minimal time spent in each classroom. Classrooms were visited twice over a period of two semesters. The first visit was meant to acclimate students



and teachers to the presence of the researchers and video equipment, and the second was used to collect data. Submerging oneself in the classrooms of middle school teachers over long periods of time is challenging due to the politics of public schools and the general inconvenience of having researchers in a classroom and, though the researchers were able to address their research question through the two observations of the 24 classrooms, multiple observations would have strengthened the researchers' ability to provide a saturated account of the interactions within each classroom while allowing researchers the opportunity to seek variation in their understanding of classroom discussion.

In order to better understand the development of classroom discussion in primary grades, Chinn et al. (2001) sought to determine whether teachers could implement a Collaborative Reasoning (CR) instructional frame for instruction when a class is well conditioned to recitations. CR shares features with other discussion methods in that it "is grounded in the idea of reasoned argumentation as a model for critical thinking, and it embodies the idea that students need to understand alternative stances on perspectives" (p. 385). As with the Alvermann et al. (1990) study, Chinn et al. (2001) found that teachers, in spite of possessing an ideology that valued dialogue, were not holding discussions in their classrooms. Wells and Arauz (2006) observed a similar phenomenon in that teachers without training remained deeply entrenched in the IRE instructional frame.

While Alvermann et al. (1990) stopped at what teachers actually do when they think they are having discussions—most often lectures and recitations—other researchers have studied what can be done to disrupt this pattern of teacher-

centered learning. Chinn et al. (2001) found that after the teachers, all of whom had equal experience with CR, conducted eight CR discussions in their fourth-grade classrooms, student talk had increased from 66 words per minute (wpm) to 111 wpm while relative proportion of words spoken by the teacher decreased from 53% to 34%. Furthermore, runs of student turns, or the frequency of consecutive students expressing an idea while being in sole possession of the floor, increased dramatically.

Chinn et al. (2001) found that, after a half-day workshop on how to lead CR discussions, teachers were comfortable beginning to implement them in their classroom. Not surprisingly, Chinn et al. (2001) found that when teachers became moderately skilled in CR discussions, the proportion of assessment questions fell from 53% to 9%, open-ended questions – those to which there are multiple possible answers – increased from 30% to 50%, and the proportion of challenge questions—those with no indisputable single answer that were nevertheless framed in a way that favored a particular answer—increased from .2% to 13%. These robust findings were strengthened by a near tenfold increase in the rate of students providing evidence and a statistically significant increase in elaborations, predictions, and articulation of alternative perspectives, all of which are cognitive processes integral to increased learning.

In contrast to this short treatment period, Wells and Arauz (2006) conducted a seven-year mixed-methods study to determine what productive dialogue looks like and under what conditions it is most likely to occur. Instead of focusing on a specific discussion structure, such as CR, Wells and Arauz (2006) chose to adopt an

inquiry-based approach to facilitate the natural arising of dialogue within various content-areas. Researchers found that across content areas dialogic interactions were more likely to occur when an inquiry orientation to curriculum was adopted. Teachers were successful over time in adopting this orientation. The benefits seen in both Chinn et al. (2001) and Wells and Arauz (2006) were a result of a specific approach to classroom talk, and within that approach is a shift in expectations of the teacher and students.

### **Classroom Climate**

The success of small-group work and whole-class discussion does not depend on the content, but rather on the climate and relationships in and through which that content is delivered and received (Battistich et al., 1993; Hadjioannou, 2007). Such an environment can be characterized as “risk-free... where the hard-and-fast rules of interaction etiquette typical of recitations are bent or changed drastically” (Alvermann et al., 1990, p. 309). This shift in etiquette shapes the nature of interactions within it by providing guidelines for what can be said, by and to whom, and for what purpose (Hadjioannou, 2007, p. 372). However, a climate that facilitates transformative learning experiences by providing a space where students allow themselves to be vulnerable by sharing their opinions, personal experiences, and reflections, is something that must be cultivated and nurtured, as it is the antithesis of what much of schooling has come to be (Hadjioannou, 2007). As Cohen (1994) notes, “If students are not taught differently, they operate at the most concrete level” (p. 7). The same can be said for teachers: If they are not taught differently, they will operate in ways that conform to the lecture, recitation, and IRE

models (Alvermann et al., 1990). However, these ways can change through the establishment and reinforcing of norms that are conducive to dialogic talk.

### **Classroom Norms**

Hadjioannou (2007) conducted a study to determine what characteristics were present in a classroom that regularly held authentic discussions. Her work was done in a predominantly middle-class school in Florida and the participants included 24 fifth-grade students and their teacher. Hadjioannou identified two subcategories that contributed to an environment in which authentic discussions can take place: explicit rules and classroom management. In the classroom that she studied, explicit regulations included hand raising, civil behavior, and completing class duties such as morning patrol and attendance monitor. However, what seemed atypical to Hadjioannou was the place that these explicit rules held as components of a broader regulation that was the foundation of the classroom's communal life: the rule of respect. This component of the classroom climate repeatedly surfaced in the field notes and ranged from focused commands and warnings to undercurrents that pervaded instructions and comments. Hadjioannou also observed students demanding rights when they felt that those rights were being violated and going out of their way to ensure adequate respect for others. The author notes the clear connection between a respect-based community and an environment where authentic discussion occurs. "If respect were not an expectation, why would a participant express an opinion and thus open himself or herself up for malevolent criticism or ridicule?" (Hadjioannou, 2007, p. 390).

Under this umbrella of respect, Hadjioannou (2007) identified several norms of participation that allowed for the development of authentic discussions. She noted that there was a standing invitation to participate in the classroom, but furthermore, students were expected to express their opinions and ideas about the issues at hand. The discussions that she observed appeared to encourage listening attentively to other members of the community, and as an effect of that encouragement, students understood that they had the right to influence the direction of the discussion by raising issues that they were interested in. In doing so, however, students were not participating in an “everything goes” (p. 392) speech genre. As explained by both the target students of the study and the teacher, opinions needed to be supported by evidence from the text. Hadjioannou (2007) concludes that participating in authentic discussions is a “socially perilous” act (p. 393) because participants render themselves vulnerable by expressing potentially controversial opinions. Furthermore, when a participant seeks to alter the course of the discussion, he or she must secure the assistance of classmates in order to pursue a new theme, thereby opening up the possibility of the community’s refusal to accept his or her suggestion.

While Hadjioannou (2007) acknowledges the limitations of generalizability in a qualitative study, her approach of studying the characteristics of a classroom that has an established modality of authentic discussion has implications for the possibilities of such an environment in other classrooms. Triangulating her data with field notes, interviews, and transcriptions of video recordings established the credibility of the study. However, she makes no mention of a peer review of her

coding, and did not utilize member checks to confirm her conclusions. This poses a problem as the feelings and opinions expressed by the students and teacher in the interviews were only interpreted by one person, thereby allowing for potential bias within the findings. In regards to the coding, peer review would have allowed for more or different environmental features of the classroom to be identified, which would have altered the major implications of the study.

The dependability of this study was strengthened by the near-daily observations over a five-month period. However, the author provides thin contextual information about the participants of the study. The gender and race of the 24 students within the class are not identified, and the socioeconomic status of the students is only referenced in the context of a “quintessentially middle-class school” (p. 376). Ultimately, the author did not provide enough information for the reader to determine whether replicating these structures in a different setting would produce similar results or findings in another setting. That being said, the design of the study was not to test a treatment, but rather to make observations of the climatic factors in which dialogic talk is already occurring and to posit that similar, though not exact, factors may be instituted and contribute to the occurrence of such talk in other classrooms. In fact, the author considers it ill-advised and impossible to try to precisely reproduce the climate of one classroom in another, as communities are “shaped by the personalities and the agendas of community members as well as by the unique circumstances of each community” (Goffman, as quoted in Hadjioannou, 2007, p. 396). In acknowledging the idiosyncrasies of

particular communities, the author addresses the inherent tensions of transferring the findings of qualitative research.

### **The Teacher's Role**

Establishing norms is a community-based process, and those norms can precede the development of dialogic talk (Hadjioannou, 2007). Conversely, a dialogic model can be instituted, and through the practice of that model a shift in norms can occur as a result (Chinn et al., 2001). However, in either case, the teacher plays an essential role in maintaining an environment that is conducive to classroom discussion.

Gillies and Boyle (2006) found that students model their behavior on that of the teacher, and if the intention of a teacher is for students to engage in dialogic talk, the single most important action a teacher can take is to ask questions to which there are multiple answers (Wells & Arauz, 2006). By seeing the teacher model this approach to learning, students are likely to begin to ask their own questions regarding complex topics. In primary classrooms, students often do not come to school with the skills needed to participate in dialogic talk (Berry & Englert, 2005). As a result, teachers need to scaffold their students by modeling certain discourse moves, such as building off prior responses and maintaining coherence within a topic of discussion. As shown by Berry and Englert (2005), this scaffolding can lead to an increase in student ownership of the conversation, an increase in topic density, and a significant increase in participation for Language and Learning Disabled (LLD) students.

**Control.** When discussing the potential for classroom discussion, teachers acknowledge a fear of letting students get out of control (Alvermann et al., 1990). Tied to that fear is the concern that teachers will sacrifice content coverage by encouraging students to question the text or discuss the source and deeper implications of so-called facts (Alvermann et al., 1990). The former of these fears is well-founded, as Chinn et al. (2001) noted that as the Collaborative Reasoning framework became the dominant mode of discussion within a class, interjections and interruption increased dramatically from 0.15 to 1.5 and 0.20 to 1.80 per minute, respectively. In order to combat this fear of losing control, teachers must reorient themselves to what a productive classroom looks like. In their quantitative analysis of three different discussion modalities, Johnson and Johnson (1985) found that constructive controversy, though laden with quick turns and powerful opinions, led to the highest level of academic self-esteem as well as the open-minded incorporation of opposing information. Therefore, if we desire our students to engage in discussions in which multiple perspectives are presented and valued, and which lead to a multifaceted understanding of an issue, teachers must relinquish a certain degree of control and allow students to take ownership of their learning. Furthermore, with the abandonment of a controlling approach to management, healthier and more productive emotional manifestations, such as humor, surface in service to the learning community (Berry & Englert, 2005; Schweinle et al., 2006; Stevens & Slavin, 1995).

**Humor.** When a teacher is less concerned with maintaining total control, the opportunity arises to create and partake in a fun and enjoyable learning community.



The importance of humor in this process cannot be overstated. In their study of fifth- and sixth- grade students, Schweinle et al. (2006) found that the presence of humor positively influenced student personal and social response to cooperative situations. Furthermore, humor is a defining feature of classrooms that display better social relations and greater inclusion of peers with special needs (Berry & Englert, 2005; Stevens & Slavin, 1995). In addition to the social benefits of humor in the classroom, positively charged humor that is relevant to the conversation at hand and does not violate the rights of others is plentiful in classrooms that successfully engage in authentic discussions (Hadjioannou, 2007). This element of classroom climate is part of a low-risk environment in which students are comfortable and even enjoy sharing their opinions and engaging in discussions that deepen their understanding of academic and social content (Chinn et al., 2001). While humor and other climatic characteristics serve the development of discussion in the classroom, in many cases there are other factors that need to be addressed so that all students can participate in the construction of knowledge.

### **Status and Equity**

Along with affective components of a classroom, there are established social and academic hierarchies that condition the dynamics of small-group and whole-class interactions. These dynamics, known as academic status characteristics, are perceived differences in ability levels that determine the social stratification of heterogeneous learning groups (Cohen & Lotan, 1995). These perceptions can be perceptions of self or perceptions of others, and “one's own status is relative to the status of other members of the group” (Cohen & Lotan, 1995, p. 101), thereby not

being absolute in any way. These perceptions, which do not accurately represent actual ability, influence group dynamics and are strongly correlated to the amount of interaction between certain group members. High-status students participate at significantly higher rates than low-status students, and when given the opportunity to facilitate an academic activity, high-status students are more likely to assume that role (Cohen & Lotan, 1995). As Cohen (1994) notes, the theoretical advantages of cooperative learning are only obtainable under certain conditions. Because “the student who does the explaining is the one who benefits” (p. 9), it is essential to ensure that all students, regardless of academic status, are willing and able to participate in small-group and whole-class activities. In other words, a researcher who studies the relationship between cooperative learning and classroom dialogue must attend to the variable of academic status in order to achieve equity in participation and increase the learning potential for all participants in the study.

In order to address status inequities, teachers and researchers suggest a variety of techniques that either explicitly or implicitly shift the power dynamics of the classroom. Cohen and Lotan (1995) suggest that teachers discuss the presence of multiple abilities, the idea that certain problems—like the ones we want our students to be solving and/or talking about—require a range of abilities, and no one student has all the skills needed. This implies that the problems our students are working on actually do require collaboration, and that the discussions we facilitate as teachers are born of multiple perspectives. Furthermore, Cohen and Lotan (1995) suggest that assigning competence – or giving a positive evaluation – to low-status students for praiseworthy thinking and effort, by virtue of the teacher’s high status

in the classroom, can reorient high-status students' perceptions of their peers as well as low-status students' perceptions of themselves. In their study of 13 intermediate classrooms, Cohen and Lotan (1995) found that after teachers attended a two-week workshop on Complex Instruction in which status treatments were taught, some were able to implement these treatments within their classrooms. Though the frequency of treatments was very low, zero for some teachers, it was positively correlated to the participation rate of low-status students. Furthermore, status treatments reduced the correlation between a student's status and his or her interaction with peers during academic exercises. These strategies represent one modality to address unequal participation.

Another, more explicit, treatment used by teachers is a set of direct instructional moves to elicit responses from certain students. In their study of book discussions in a classroom with a majority of language and learning (LLD) disabled students, Berry and Englert (2005) noted that the teacher facilitated scaffolded interactions, such as shaping an ambiguous comment into an appropriate response. In doing so, she "provided the linguistic, cognitive, and social facets that students needed, but that were beyond their immediate competence" (p. 47). Essentially, the teacher and students were constructing meaning together, and by clarifying and revoicing what the student said, the teacher implied competence in a public setting. This guided participation led to a dramatic increase in the rate of participation of LLD students.

Chinn et al. (2001) also took note of the potential for equity in their study of classroom discourse. Their assumption was that by shifting the discourse mode

from *Recitation to Collaborative Reasoning*, the collective rate of participation would increase as a result of the open-forum framework. However, if Cohen and Lotan's (1995) findings hold, the status characteristics that predated the implementation of CR will merely be reproduced at the level of whole-class discussion.

### **A Return to the Problem: What Are My Students Talking About?**

Much research has been done on cooperative learning and the motivational factors that fuel its success. Also, interest in classroom dialogue and patterns of discourse has revealed discrepancies between what we, as educators and citizens, want for our students and what is actually occurring in our classrooms. Though the participants in my study did not fall, by most metrics at least, within the confines of a marginalized population, it was important that they develop the collaborative skills and ability to deliberate so that they would be able to advocate for themselves and others later in their lives. I noticed that, while my students had strong and valid opinions regarding a variety of social, environmental, and academic issues, many did not appear to have the skills or the opportunity to engage in small-group or whole-class discussions regarding issues of relevance in their lives. Our curriculum included content with social and environmental import, but the larger focus was to utilize cooperative learning structures as a springboard to dialogic discussion amongst larger groups in the class, and math was the most practical content area to integrate these two structures. The findings show that while students may not have considered math to be relevant in their daily life, the socio-academic issues inherent in cooperative groupwork are just reflections of the interpersonal dynamics present in students' lives. After all, any teacher will attest to students' ability to talk, but it is

the content and process of that talk that we should be concerned with. To augment these characteristics of classroom talk, I sought to understand the relationship between cooperative learning and dialogic/authentic discussion in hopes that such understanding would allow me to use CL to increase dialogue amongst my students.

## CHAPTER 2: METHODS

### **Actions and Practices**

For this action research project, I designed and implemented two cooperative learning (CL) activities within small groups and then facilitated classroom discussions based on the same content. The first activity was a miniunit on metric volume measurement and took five class periods. Each student had a role, though in some groups on some days roles had to be shared between two members. Each day the roles shifted and more tools and measuring strategies were introduced, and each day began or ended with a discussion regarding the previous activity. The second was an extension of my students' work with arrays and multiplication strategies and took one class period. I organized the CL activities according to the five characteristics set forth by Johnson and Johnson (as cited in Li & Lam, 2005): interdependence among group members, individual accountability, face-to-face interaction, development and use of appropriate social and collaborative skills, and group processing. Furthermore, I attended to status issues by identifying high- and low-status students and by using multiple ability and competence assignment treatments (Cohen, 1994). I utilized CL to harness the increased motivation that arises from peer interaction and mitigated the social dynamics of that peer interaction through the use of the above-mentioned status treatments.

For the cooperative activities, I created groups that were heterogeneous in terms of gender, academic and social status, and actual academic achievement. Students worked on these activities for the majority of the class, and after the small-

group work was completed, I shifted the classroom into whole-class discussion. Each group had worked on a similar, if not the same, problem or skill set and therefore had a collective framework of experience to discuss. Students remained in their cooperative groups for these discussions, with the exception of one class meeting when we reviewed the socio-academic behaviors that allow for cooperative success. This discussion took place prior to the day's activity in a circle on the floor at the front of the classroom. I also used that opportunity to role-play constructive criticism with students as well as to model efficient and precise measuring techniques.

In the discussion session, I paid attention to student engagement and the intellectual quality of the discussion (as determined by correct answers, elaborations, and the collaborative construction of ideas), and also examined shifts in control of turn-taking and topic selection from teacher to student (Chinn et al., 2001). The purpose of this methodology was to identify the relationship between cooperative learning activities and classroom dialogue. I used the following sources of data in my analysis: research journal and field notes, student surveys, video recording and transcriptions, and student work.

### **Participants and Study Setting**

The setting in which this study took place is an alternative public elementary school in a small suburban city in western Washington. The school serves almost 300 students and is the local school for a small, middle to upper-middle class neighborhood. Due to the alternative nature of this school, seats are in high demand and there is a lottery that determines which students who do not reside in the

service area can attend. In the 2014-2015 school year, 112 out of 297 (38%) students entered Bristol Elementary (a pseudonym) through the lottery. However, only 24 of the 112 entered this year, the rest having been accepted in years prior. All the classes within the school organize around a central annual theme, and part of the school philosophy is to encourage parent involvement. There was usually a parent volunteer in my class at least once per day. The communal ideology that pervades Bristol creates a tight knit community of teachers, parent and students. As of 2014, the school population was 80% White, 10% Hispanic, 7% multi-racial, and 2% or less American Indian, Asian/Pacific Islander, and African American. 28% of students qualified for free or reduced priced meals, and 19% of students qualified for special education services.

Bristol has 12 multigrade classrooms that allow students to stay with the same teacher for two years. However, students migrate (as it was called at Bristol) to grade-level math classes to accommodate the grade-specific standards. The classroom reflects the educational values and aspirations of the parents and the households from which these children came. Some students at Bristol attend because of the social and emotional support that is lacking at more traditional schools, whereas other families chose Bristol because of their explicit focus on issues of social justice, sustainability, and democratic education. The concept-based curriculum cultivates certain skills in students, as demonstrated by their annual Measurements of Student Progress (MSP) tests.

Students take the MSP for the first time in third grade, and in both 2011-2012 and 2012-2013, the third grade cohort scored ten percentage points higher



than the state average in reading. However, the cohort was six and two percentage points below the district average during those years. In general, the school struggles in math, and the third grade scored 15% and 24% lower than the state and district averages, respectively, in 2011-2012, and .02% and 6% below state and district averages in 2012-2013. The school developed an improvement plan to address these discrepancies, which included practices to increase conceptual understanding and targeted support for achievement of the Common Core State Standards. The alternative nature of the school and the Bristol community were in tension with current educational reform, and in 2014 parents opted-out approximately 30% of the students from the 2013-2014 Mathematics MSP, thereby causing the school-wide results to skew to a degree that created an invalid statistical analysis of achievement.

The classroom in which this study took place was a third-grade math class comprising 26 students, 14 females and 12 males. For the math migration, all 12 second graders and one third grader from my class went to another class for math while 13 third graders from another teacher came to my class for their math lesson. There was one Native American student, two African American students, and one student who was born in South East Asia. Also, four students in the class were on IEPs, three of whom were frequently out of class to receive targeted support. During the data collection, students were organized in heterogeneous groups of four to six students. Lessons included whole-class instruction, small-group work, and independent work. Students filled out a brief survey at the beginning of the year that assessed their interest in small-group work as well as whole-class discussion. I also

utilized several other sources of data to understand the relationship between cooperative learning and classroom dialogue.

### **Data Collection**

During this qualitative action research project, I was in my first quarter of student teaching and also acted as a teacher-researcher. I collected my data during a six-week period beginning in the second week of class. I conducted a multi-level analysis, one at the whole-class level and the other at the individual level, and I utilized math as the primary content area from which to gather data as it allowed for both cooperative activities and whole-class, authentic discussions. The following data sources represent my attempt to ensure the credibility and dependability of my study. According to Freeman (1998), using “multiple sources of information or points of view on the phenomenon or question you are investigating” allows the researcher to minimize bias and increase confidence in findings.

### **Video and Audio Recording**

I made video and audio recordings at times during each cooperative learning session and during each discussion that followed. These recordings, and the transcripts that followed, were essential in understanding the relationship between the two instructional formats I utilized for this project. Also, in seeing the similarities between cooperative learning and authentic discussion (to be discussed in the Findings), I was better able to understand how CL can be used to increase dialogue within the classroom. While the discussions were planned in advance and focused on the preceding cooperative math activity, I often would base my questions on issues that I saw arise during the activity. In doing so, I attempted to ensure that

the discussions remained relevant to the immediate experience of the children in the class. These video recordings were coded and proved essential to triangulating the data collected in my research journal and through student surveys. My journal entries provided a subjective, immersed perspective, the video observations allowed me to witness and review events within the class that might initially have gone unnoticed. Furthermore, video allowed me an opportunity to reflect on my initial perceptions of the happenings of the class, thereby reducing bias in the findings of the research and increasing credibility and dependability.

### **Research Journal**

A primary goal of this research was to shift the locus of control from the teacher to students so that they could take ownership of the content and direction of discussions. For this, however, students required scaffolding (Berry and Englert, 2005), and to facilitate this, I had the responsibility of enacting specific pedagogical moves such as requesting elaboration or refocusing the topic of the conversation to maintain coherence. I made quick journal entries after our discussions that included the foci of the discussion, challenges I saw arise, participation, status characteristics, and turn taking. Participation characteristics included frequency of contributions, congruence with the topic, rate of interruptions, and building on previous responses. Status observations included body language, ignoring the input from particular group members, isolation from the group, and the positioning of materials to include or exclude students. This journal served as a subjective account of the classroom experience, and it provided one perspective from which I could analyze the relationship between CL and authentic discussion.

### **Student Surveys**

At the beginning of the year, each student filled out a survey about preferred learning formats and dispositions towards participating in small-group and whole-class discussions. The survey also addressed how smart a student feels in math. I used this data to identify issues that prevent students from participating, such as perceived academic status. This was essential because status issues and motivation will influence the dynamic of any classroom activity (Cohen, 1994; Cohen & Lotan, 1995; Hidi & Harackiewicz, 2000). As such, using this data to triangulate my findings essentially accounted for a variable that would affect cooperative learning and authentic discussion whatever support the former could offer to the latter.

### **Data Analysis**

Throughout the collection and analysis phases of my action research project, I attempted to ensure the quality of my study through triangulation of data sources, peer review, acknowledging my own positionality—both theoretical and as the highest-status physical presence in the class—and through a rich description of the setting and process in which this project took place. The following describes the process of analysis and attention to quality indicators in each of my data sources.

### **Video and Audio Recordings**

After an initial memo of the videos, I transcribed each recording to begin the coding process. I used an open-coding approach (Mertens, 2010) that allowed categories to surface from the data. In the initial coding, I identified 4 categories, each of which contained secondary codes and many of which contained tertiary codes. These categories and their associated secondary codes were:

- Questions
  - Open-ended
  - Closed
  - Requests
- Student talk
  - Affective Response: Experiential Response
  - Academic Response: Topic
  - Question
- Teacher Talk
  - Positive Climate
  - Negative Climate
  - Teacher Restating Student
  - Explanation/Clarification
  - Content
- Missed Opportunity

Throughout the analysis process, I engaged in peer-reviews of my transcripts and coding so as to minimize my own personal bias towards the data. While some of the questions that my fellow researchers had were similar to mine, they also allowed me to see my data from different perspectives. In doing so, I became better able to provide a holistic interpretation of the data and ensure greater credibility and dependability of my study.

### **Research Journal**

As I saw patterns and themes arise through the coding of my transcripts, I was able to refer back to my research journal to inform or challenge the words spoken in the recordings with my own perception of what transpired in the moment. The journal provided a subjective account of some characteristics that were not captured in the transcripts, and reminded me of my initial observations when I was in a deeper analysis of the other data sources. These observations, while subjective and written in the brief moments between lessons, provide the immersed perspective of a teacher-researcher on how cooperative learning and authentic discussion relate to one another in the classroom.

### **Student Surveys**

During the collection period, I distributed three surveys. The first of which was a smartness survey (Featherstone, 2011) that asked students to identify areas in which they felt smart at math (see Appendix A). This was a multiple abilities treatment (Cohen & Lotan, 1995) that emphasized that being smart at math is not one skill. Smartness surveys allow students to see that there are many ways to be smart in an academic subject, and while nobody is smart in all of them (though some students did consider themselves rather competent), everyone is good at some of the skills that math requires. While this survey did not factor into my formal data analysis, it was a status treatment that may have had a positive effect on students' perception of themselves and their peers as doers of math.

The next survey was a status survey that sought to identify high- and low-status students in the class (see Appendix B). The survey asked students to circle the names of their best friends in the class and those who they thought were good at math. While Cohen & Lotan (1995) asked these questions on two separate surveys and then combined the results to determine a costatus score, I combined the questions on to one survey, asking students to “Circle the names of the people who are the best at math in this class. Also, circle the names of your best friends.”

The final survey (see Appendix C) I distributed asked three questions:

- Do you like working in small groups in math? Why or why not?
- Do you like participating in whole-class discussions in math class, when you talk in front of the whole class? Why or why not?
- Do you think you are good at math?

I created a table with each student’s status score and the answers to each of these questions with notes regarding their justification. After the coding of my transcripts and the development of themes, I returned to the table to better understand the emerging findings. The survey results provided greater insight into student participation and encouraged me to consider aspects that were not initially visible from my video, audio, and research journal. In doing so, I was able to incorporate the variable of status into my findings and provide a more nuanced vision of how cooperative learning and authentic discussion worked, and worked together, in my classroom.

### **Limitations**

Cultivating a class environment in which cooperative learning and authentic discussion are the norm is a challenging task. So much of the success of these activities, and all learning for that matter, is a result of the relationships between students, which are largely dependent on the relationship between the teacher and his or her students. Although I was a full-time student teacher and had worked for two half-days per week with approximately half of the participants during the year prior, the other half came from another class and I was only with them for the 55 minutes of math class per day. These students came from a class that developed their own classroom agreements, norms of communication, and interpersonal relationships. Furthermore, the primary data sources, the audio and video recordings, were collected over a three-week period, and my time with these students was limited to ten weeks. As a result of this minimal time together, and the potential incongruence between my classroom's climate and that of my "migratory" students, the depth of our community bond was limited and students' willingness to participate in authentic discussion may have suffered as a result. This also may affect the dependability of the study, as it is encouraged that the researcher be submerged in the collection phase over a long period of time (Mertens, 2010). While it is difficult to determine what this time should be before the data collection begins, I believe that a longer-term placement in this setting would have yielded greater results regarding the support that cooperative learning can offer authentic discussion.



Another potential effect of our short time together was the inability to address overall status issues. Students who self-identified or were identified by their peers as not being good at math did not have an opportunity to demonstrate their academic skills in other areas, and status is not subject-specific (Cohen, 1994). Had there been more opportunities for this group of students to converse in subject areas other than math, the patterns of discourse may have naturally transferred across content areas. In the reductions of status characteristics, I may have had a more pure indication of how CL could be used to facilitate authentic discussion.

Because every classroom is different, it is impossible and ill advised to seek to replicate an exact pedagogical system (Hadjioannou, 2007). Rather, for this study, I intended to foster a classroom climate that would support connections between students, and see if those connections would allow for a greater frequency of authentic discourse. In order to strengthen the confirmability of my study, I attempted to leave the philosophical framework under which I have been teaching aside and let the data guide my coding. In doing so, I identified 26 teacher codes, 14 student codes, and coded for missed opportunities as well.

Lastly, I used multiple sources of data to triangulate my findings and ensure reliability. However, due to the demands of the classroom, the entries in my research journal were thin on some of the days in which I collected other forms of data. This led to my research journal only being used to triangulate two of my three findings. Had I been more diligent in my daily observations, my journal would have been a richer data source that would have strengthened the reliability of my study.

Though I attempted to reduce my bias and increase the strength of my study through attending to the quality indicators of qualitative research, that does not alter my perception that students who can communicate their thinking articulately and diplomatically, whether it be in the field of mathematics or politics, will be better citizens as they function in our democracy. My goal was to get students talking, all students, and get them all listening as well. As my findings demonstrate, certain themes indicate a relationship between cooperative learning and authentic discussion. These themes, when attended to, can increase the authenticity and inclusion of classroom talk. It is my hope that the skills students develop in these venues will transfer to the greater role as they become independent members of our society.

### CHAPTER 3: FINDINGS

Although one of my intentions as an educator is, and the specific intention of this action research project was, to facilitate and encourage students' skills of dialogue and diplomacy, I attempted to distance myself and my analysis from what I wanted to happen so that I could better understand what did happen. In admitting my bias against the competitive and anti-collaborative nature of the standardized classroom, I recognize that I look through this lens in hopes of seeing students working together and engaging in meaningful discussion about how their work can be more successful. Academic content is merely a vehicle to develop these skills of communication and collaboration.

With my bias exposed, I looked beyond it in my data analysis. As I examined my data in regards to the relationship between cooperative learning and authentic discussion (my first research question), it became clear that the norms and skills necessary for success in these venues are similar, if not identical. Where CL activities engage students in hands-on, cognitively demanding tasks, dialogic discussion provides a venue to reflect publicly on the learning, affective experience, and the challenges and solutions possible in cooperative group work. Though the form changed from small-group to whole-class, the importance of climate remained paramount, and the presence of status continued to exert immense influence on who spoke and what they said.

If my first research question elicited a more general relational understanding, my second allowed for a more nuanced exploration of how the two instructional formats influenced one another. Through the open-coding of the audio

and video transcripts, patterns and themes began to emerge. The data led me to several areas of interest, namely what was said in the discussions, who said it, and what was present in the environment that may have encouraged such dynamics. These themes—climate, blame, and participation—and the findings that followed from them, represent the most significant patterns in my research as they relate to cooperative learning and authentic discussion in the classroom.

### **Climate**

The importance of classroom climate in the literature on authentic discussion cannot be overstated (Alvermann et al., 1990; Chinn et al., 2001; Hadjioannou, 2007; Wells & Arauz, 2006). As I reviewed the data in my transcripts, a theme that arose was my attempts at creating a positive classroom climate, and the effects those had on student response. Codes for my comments that arose in this category were: *multiple abilities, humor, equity, student centered, empathy, assigning competence, and respect*. It should also be noted that I coded for *negative climate* as well, which manifested in threats of loss of recess and drawing attention to students who were not following classroom norms. As the literature states, a “general climate of trust and safety enabled the risk taking involved in authentic discussions” (Hadjioannou, 2007, p. 387). When the discussions my class participated in veered towards authenticity, I was interested in what aspects of the classroom climate could have influenced such turns. Indicators of authentic discussion include but are not limited to expressing opinion, reflecting, providing clarifications, making connections with experience, and the exploration of ambiguous issues (Hadjioannou, 2007, p. 371)

While classroom climate is a multifaceted and cumulative phenomenon, one identifiable component of it in my research was my own comments during our discussion and how those potentially influenced the discussion on that day. What effect did positive climate statements have on the discussion for that day? What kinds of responses were students giving when I contributed to a safe climate for risk taking?

In the transcript discussed in the Participation section (p. 53), students built on each other's responses, offered diverse accounts of their experience, and controlled the conversation by proceeding without constant prompting from the teacher. According to Hadjioannou (2007), "authentic discussions are dialogically oriented classroom interactions where participants present and consider multiple perspectives and often use others' input in constructing their contributions" (p. 370). By this definition, and the more extensive ones given in the literature, the preceding transcript is an example of an authentic discussion. Perspectives ranged from "It was really fun for my group because we all cooperated with each other and we all listened to each other and we also learned a lot of new stuff in the process," to "Sometimes it was frustrating for me because my group was talking over each other," to "it was really kind of crazy." Furthermore, leaving positive versus negative affective response aside, there were several co-constructions of understanding as demonstrated by students beginning statements with "She said it was really hard for her because..." and "connecting to Ashley because..." The speaker of the first statement acknowledged the contribution of her classmate, and the second empathized with the previous speaker's sentiment. This is not to say that when

exchanges like this do not arise, or when there is much silence in between responses, that the conversation is any less authentic. No single exchange defines the authenticity of a discussion, but rather each exchange, and the climate in which it occurs, brings the class closer or farther away from dialogic communications.

As mentioned in the Limitations section, the elementary classroom is an environment in which many variables are out of the teacher's control. Admittedly, the day in which the discussion quoted above occurred was smooth and reminded me of the joys of being an educator. In those times, it is much easier to contribute to a positive climate, but whether it was the climate the students brought to class or the climate I provided as a teacher that encouraged the collaborative nature of the discussion is still unclear. Instead of trying to prove causation, I sought correlation between the talk of the students and my contributions to the discussion as its initial facilitator. For example, this was my statement that began our talk:

Teacher: Mathematicians, you may sit down at your table spots and turn your work over. Why don't we take our voices down to a zero so you can listen to the speaker? One way I can know you're listening is because you're looking at me. Let me see those bright mathematical eyes. Very bright mathematical eyes.

Paige: My eyes are brown, [inaudible 00:00:26].

Teacher: Brightness in the eyes comes from behind the color. It's really just a reflection of the clarity of your own mind.

I coded this as positive climate due to the acknowledgement of the mental clarity, potential or realized, that I see in each of my students.

The immediate response from Paige was to remind me that his eyes were actually brown, but I felt this comment set the tone for the constructive nature of the conversation that followed. I proceeded to ask a string of related open-ended questions and, when the opportunity arose, acknowledged and elicited the thinking of students who were not able to enter the conversation on their own.

Teacher: Go ahead and pass that. Pass that [microphone] to Rachel, she's had her hand up for a little while.

Also, while some students had the inclination to raise their hands to signal that they wanted access to the discussion, others did not and required more explicit permission to share their ideas.

Teacher: Does anybody want to speak to that? There's several people that keep raising their hands. Who else has some ideas? I want to hear from someone who hasn't spoken much about our learning.

This request led to a string of three new participants in the conversation and reemphasized the inclusive ideals in our discussions.

As Wells & Arauz (2006) noted, the single most important factor in encouraging *true* discussion is the use of open-ended questions, or those in which there are multiple answers.

Teacher: Does anybody else want to share anything about this activity that we did? Because I know that it was different and I think people had very strong experiences, positive or negative, so I'd really like to hear more about peoples' experiences.

This question, or request rather, invited students to comment on any facet of the activity that they found important. As my philosophy of education rests on the value of the social and developmental equally as much as the academic, there is no wrong answer to this question and the potential answers are as diverse as the students in my classroom. This request, much like the one quoted above it, invited new participants into the conversation and led to students connecting their experience with that of their classmates and furthering our exploration of constructive socio-academic norms. This standing invitation to participate was a feature of the classroom that Hadjioannou (2007) studied, and beyond the invitation, there was an expectation that students would express their opinions and ideas. As the transcript indicates, the discussions encouraged listening and responding, and students felt safe guiding the conversation in ways that were meaningful to them and relevant to the context of our work.

In exploring the relationship between CL and dialogue, it became clear that the norms that governed our discussions were the same norms that students felt were lacking in the cooperative activities. This implies that the norms are the same and can be cultivated across certain modalities of instruction. Also, as the following section demonstrates, the issues that arose in the CL groups were the fodder for our rich discussions. In this way, and perhaps in others, cooperative learning facilitated authentic discussion in my class.

This was not an experiment, so I did not have a control group to test what happens when the teacher does not make comments that contribute to a positive climate. What is clear, however, is the correlation between positive climate



comments and higher rates of participation, personal and reflective responses, co-construction of ideas, and the exploration of more nuanced areas of experience such as social dynamics and potential solutions to problems. When these characteristics were present, and based on the aforementioned correlation and the similarity of my finding to those in the literature, I concluded that positive climatic factors were at work. Interestingly, a positive climate did not necessarily imply positive comments. In fact, many of the comments that were made regarding students' affective response to the cooperative activities were of a critical nature.

### **Blame**

As I coded the transcripts, certain patterns began to reveal themselves. To strengthen the confirmability of my study, I attempted to separate myself and my analysis from the constructivist framework under which I was trained and operating (Mertens, 2010). However, I could not help but notice the recurrence of student talk regarding social and behavioral norms in a groupwork setting. I will take some responsibility for facilitating and encouraging discussion on this topic, as it was my goal for students to reflect on and implement behaviors that are conducive to deliberation and working across barriers of difference. However, I can't take responsibility for the input that the students had, and I noticed one very defining feature of the conversations regarding our groupwork: blame.

In the category of *student talk*, I coded for *affective response*. The most common subset of this code was *blame*. When I examined my data sources further, I found that some students were able to understand and interpret their affective response in more constructive ways than others. Whether these responses were

more or less constructive, it became clear that students' willingness to share their perceptions of the cooperative activity during the discussion was indicative of the empowerment they felt in the classroom. Whether it was blame or reflection, students' affective responses demonstrated a democratic element of our discussions in that they believed, rightly so, that their feelings mattered. That being said, when students direct their negative affective response outward, they are reducing the potential for the co-construction of knowledge and increasing the potential for competition and antagonism. Therefore, teaching students constructive methods of critique through understanding their own internal states is essential when using cooperative learning as a catalyst for authentic discussion.

Due to the nature of the cooperative activities, there were many opportunities for students to disagree about the use of tools, their roles for the day, equal (or not) participation, and other socio-academic dynamics. I noticed these and expected them to develop, and I adjusted the subsequent discussions and lessons to accommodate for the need to reflect on and improve the nature of our work together. As the discussion progressed, students willingly admitted their frustration with the behavior of others in their group or in the class at large. This pattern began to surface in the discussion that preceded the second day of our volume measurement activity. I changed the lesson so that we could revisit the norms of our cooperative activities and to model efficient measuring strategies before the students began their work. The following excerpt, in which I noted three positive-climate comments, began and set the tone for this discussion.

Teacher: Thank you Josh, for coming. And Marlo. Remember to think of somebody who you really want to talk to right now and then don't sit next to them. Or think of somebody that you really, really don't want to talk to at all right now and then sit next to them. So I'm going to ask you - Paige and Steve, do you think that that's a good spot for you to sit?

Paige: Nope, not at all.

Teacher: I don't think so too. So, yesterday was pretty crazy. We had a short amount of time and we tried to get a lot done. But in the time that you were all working with one another did any problems arise that we should address right now? Because these are hard tasks. You know the important part about this is working together and making sure that everybody's voice is heard. Paige?

Paige: Yeah?

Teacher: Come forward. Come a little closer. Sit right there. So did anybody have any problems with that or with anything else?

I coded the introduction to this talk as positive climate (humor) because of my tone of voice and the laughing response of my mentor teacher. While my students may or may not have seen the humor in my approach to their decision-making, the fun that I was having, I believe, contributed to an environment where risk-taking and authentic discussion could take place. I also coded my second statement as positive climate because I affirmed the value of equity in our discussions. Lastly, the open-ended nature of my final question, again a characteristic of a positive climate, allowed for the students' needs to govern the discussion. The comments that

ensued, though not entirely unpredictable, were not all positive. However, they were authentic, or true, because students were “given the opportunity to participate in the cumulative construction of community problem solving” (Wells & Arauz, 2006, p. 415). The above transcript continues:

Laura: I don't know, I think the fairness monitor wasn't really doing their job, but they were just letting people boss other people around.

Teacher: Okay.

Laura: And some people weren't letting Ray have a turn because even though he didn't want a turn I thought it might be good for him to have a turn because he was like on the other side of the table and everyone else was on the table where all the water is and he wasn't really doing anything so I thought it might be good to include him.

Teacher: So Laura brought up a good point and I see Marlo kind of agreeing, that you can tell a lot by how a team is working together by where everyone is standing. So if four people are standing right next to each other huddled over the tools and one person is on the other side of the table, that's not okay. That's not okay. And so even if you're not the fairness monitor, everybody, I think, inside should be the fairness monitor. So you can say, "Hey, let's join. Why don't we join together? Why don't you come over on this side?" But it's not like, “fairness monitor do your job,” because that's not a nice thing to say. But you can just make an observation; "Well I see that this person is on the other side of the table so maybe they should come over here."

Here we have two examples of outwardly directed negative affect: “I think the fairness monitor wasn't really doing their job, but they were just letting people boss other people around,” and “some people weren't letting Ray have a turn.” The transcript continues...

Lloyd: At my table me-

Teacher: So we don't need to name names either. So if you just want to say what happened.

Lloyd: Yeah, so Graham and some other people, I mean some people at my table were just- two people at my table were doing all the work ...

Teacher: It doesn't matter [that he said their name]. While other people weren't doing the work?

Lloyd: Yeah, well constantly in my group and [inaudible 00:03:32] were just sitting watching the other two people do all the work and they weren't, they didn't want to do the work and they didn't get to do anything they just sat there and didn't do the work at all.

This was the classic example of blame. This student placed the entirety of his focus on behaviors of other people in the group and, unlike Laura above, did not correlate that with his internal state. Instead, he named a student, even though I tried to prevent that, and that student, who often participates, was silent for the rest of the discussion. This alludes to the effect that explicit blame has on students who are negatively correlated to group work by their classmates. As blame became a theme in the data, I began to notice the nuanced way in which students spoke about things they did not like about the activity. Laura laid blame on her group while expressing

her own constructive tendencies (“I thought it would be good to include him”) while Lloyd did not include himself in his assessment of his group’s dynamic. As the transcript shows, I followed up each student’s concern with my own interpretation of what the problem, or rather the solution, was. Each student statement was followed by an attempt to reinforce a positive climate in both the cooperative groups as well as our whole-class discussions.

The statement that follows from the above transcript was an example of my own attempts to provide direction to the students, and the subsequent comment by Eleanor was of a notably different nature than the previous critical response.

Teacher: So today when we work I'm going to be circling around, and this is what I'm going to be assessing. At the end of this activity we're going to have a written assessment, you know, where people are- you're going to write. But until then what I'm really going to be assessing is how well you work with one another. And so it's your job to make sure that everyone has a turn. And it's not okay for somebody to not have a turn no matter what. Even if they say, "Oh, I'd rather have you do it." That's not acceptable because everybody needs to learn how to use these tools.

Eleanor: I kind of agree with Laura that the fairness monitor was really not doing a good job, but I was kind of frustrated because I had to share my job both times and I thought the water monitor should have had to share their job.

This affective response, which I coded as negative but not blame, was leaning towards the most constructive form of negative affect, as the speaker took

responsibility for her emotion (frustration), offered explicit justification, and proposed a solution.

Teacher: Thank you for saying that. So one thing, the first part of that, the fairness monitor is a hard job. So going and getting water we can all do that. Going and getting a bucket full of stuff we can all do that. But really paying attention to the needs of other people and being aware of the dynamics in our group, that's like a big job and it takes a long time to get good at. So you can help each other. And it's everybody's job to make sure that there's equity and fairness in the group.

As mentioned in the Climate section, there was a strong correlation between teacher's positive comments about climate and many forms of authenticity such as the reflection in Eleanor's response. That being said, Eleanor was one of the more mature students in the class and, as with many young girls, she had a more developed emotional intelligence compared to boys of that same age. This is one explanation for the quality of her statement, but there are many things that I could have said that might have changed her response to something less authentic. Equally important is the qualitative difference between her statement and the more focused examples of blame, and the value of orienting students to this method of critique in classroom discussions.

While the presence of blame was undeniable in the way students justified their experience, there were also occasions where students expressed a negative affective response but it was not outwardly directed. In these situations, students made an objective observation about the class or group environment and then

expressed an internally focused, negative affective response. Although these occasions were rare, they represented a much higher form of social-emotional intelligence, and one that is essential for students and citizens to develop if they are to confront the diversity of ideas that exist in the classroom and in the wider world. As I found examples of this type of response, I became interested in whether the question I asked may have elicited this type of response, whether it was primarily a function of the student's personality (which I came to know somewhat intimately), or if these responses were correlated with the survey results from the beginning of my time in the classroom. The transcript above continues:

Amelia: Some people I saw yelling at each other because they did something wrong and sometimes that happened to me and I didn't really feel good.

I initially struggled to code this statement. The first clause is an objective assessment of what the student saw, though not specific to any other member of the class, while the second is a statement of her personal discomfort with the situation. It is a negative, or unpleasant affective response but there is no blame. Furthermore, this is a universal experience that all students can relate to. This student, without directing her emotion outward, took a risk to say that the way she was treated did not feel good. Why did this student respond in this way? The transcript reveals positive-climate comments (by the teacher) immediately preceding this response.

But really paying attention to the needs of other people and being aware of the dynamics in our group, that's like a big job and it takes a long time to get good at. So you can help each other. And it's everybody's job to make sure that there's equity and fairness in the group.



However, there are always more factors at work. In order to better understand other potential catalysts for the types of discourse in this discussion, I reviewed my surveys to better understand the students involved and potentially identify motivational factors for their contributions.

In the above transcript, there were four student participants. When I returned to the survey results (which I had not reviewed since they were distributed), I expected to find each of these students with a high number of status votes and to see that each of them liked “whole-class discussions in math.” However, both Lloyd and Eleanor were in the lowest quintile of the class in status votes, meaning that their peers did not rank them as either friends or good at math. In Eleanor’s case, the survey results may have been skewed because she was new to the class and had not made an impression on her classmates by the time the survey was given. Also, her participation survey, where she wrote “I feel [sic] like I’m participating,” attests to her affinity for whole-class discussions. In Lloyd’s case however, he did not find whole-class discussions “fun,” yet he contributed to the conversation nonetheless.

In Amelia’s case, she had both a high number of status votes (4<sup>th</sup> quintile) and liked whole-class discussions “bekus I get to shar mi thinking and I fill good abot mysillf,” she says. However, she does not like small groups because sometimes she does not know the people and gets shy. Her interest in discussion no doubt was a cause of her participation, and the importance she gives to feeling good about herself correlates with her above comment on what didn’t feel good about the cooperative activity.

This section was an exploration of the most common theme that arose in our discussions. Students consistently implicitly and explicitly attributed problems to other members of the learning community for the difficulties that they experienced in their groups. Through the exploration of this pattern, I was struck by how valuable even the strongest statements of blame were in creating an authentic discussion. While there was a distinct, qualitative difference between Laura's, Lloyd's, and Amelia's affective responses, each was a true representation of their perceptions and was equally valued by the class. Furthermore, social norms are an ambiguous area to explore and are contextual, subject to dynamics of age, gender, class, prior relationships, and other factors. Therefore, their exploration will inevitably lead to different interpretations and perspectives, essential characteristics of authentic discussion.

Though the presence of blame was not a negative aspect of our discussions, and in fact contributed to their authenticity, much of the blaming was negative, or less constructive, than others. When students say, "This person did this," and there is no statement as to the effects of the action on either the group or the individual, it invites very limited responses from other students, and in most cases building on such a response would either be more blame or a defensive attitude. Knowing the four participants quoted in this section as I did, I believe that the social and emotional intelligence that the three girls possessed was a major factor in their ability to be more reflective and constructive in the discussion. These were some of the more mature students in the class, and Lloyd was one of the less. This is understandable, given that girls tend to mature sooner than boys. Be that as it may,

many people, boys and girls alike, never develop the skills to participate in discussions in constructive ways. This is, in part, due to the patterns of discourse that we model in the classroom, and through teaching students to reflect on social experiences in a more positive ways, we are teaching them to create more positive relationships with the world around them. These positive relationships may lead to increased dialogue between a greater number of participants.

### **Participation**

Another theme that surfaced throughout both the literature I reviewed and my own research was participation. As Cohen (1994) notes, "The student who does the explaining is the one who benefits" (p. 9). Whether we hope the student to benefit in terms of content knowledge or skills of communication, neither are cultivated if students are not talking. Therefore, I attempted to create opportunities for students to talk in both the cooperative groups and the whole-class discussions.

In my coding process, questions arose as to who was doing most of the talking. Did I ask some questions that elicited more student thinking than others, and from a more diverse body of students? Also, I wondered why sometimes a direct request for participation from students who had not shared led to exactly that, and other times it did not.

Again, my primary source of answers to these questions came from the transcripts. Even before I began collecting formal data for my action research, I developed a sense of who the talkers in the class were. It should be noted too that some students were better than others in their ability to constructively contribute to the discussions through maintaining topic coherence, not interrupting others,

building on previous ideas, and other components of dialogic talk. Along with my own perception of students' participation, I was able to review the results of the status and preference surveys and correlate survey results with the transcript evidence. Lastly, I was able to triangulate my findings by reviewing my research journal, in which I made quick notes about the discussions, some of which were directly related to participation.

Specifically, after the first day of data collection, I was struck by the challenges that the groups faced. My research journal includes the following comments: "Challenging due to new format of learning... Roles not firmly followed, especially fairness monitor... Not enough time for discussion, norms seem poorly established for this." The transcript from that day supports this observation. As a result, I spent a significant portion of the next day's class revisiting groupwork norms in our class. I also role played with a student on how to disagree in a constructive manner and gave direct instruction on the efficient and precise use of the tools necessary for the activity.

Interestingly, the next day's journal entry reads, "Revisiting norms may have had positive effect on work time", and "Some students absent->smaller groups, less noise, better environment." A transcript from the same group mentioned above reinforced the positive effect of smaller groups on efficiency and participation, and video evidence from another group demonstrated equity and efficiency, both of which were goals of the prior day's discussion.

The following transcript is selected from a discussion, which, at the time and during my data analysis, seemed to be the most authentic and dialogic of those that I

recorded. There were long strings of students talking without my furthering or focusing the conversation, a high number of positive climate codes, and a significant amount of student talk regarding students' learning, experience, and affective response. After the positive-climate comments quoted in the Climate section (pp. 40-42) I initiated the discussion with the following string of questions:

Teacher: We just have a little postassessment on what we talked about in our measurement and we also, the way we learned about that was a little different than what we've been doing all year, like we were working in groups and we were working with our hands. What do people think about that? I'd like to have a conversation about that activity that we had. Some ways you can think about it is what did you learn, what skills did it help you develop? Did you like it, did you not like it?

As I reviewed this transcript, I realized that I asked two qualitatively different questions here. One I coded as open-ended reflective ("What did you learn, what skills did it help you develop?") and the other, open-ended experiential ("Did you like it, did you not like it?"). To my delight, students were able to answer each of these questions, but what struck me more was the string of student talk that occurred after this prompt. Three students, all high-status, spoke in turn. The last of which follows:

Erika: Sometimes it was frustrating for me because my group was talking over each other.

I took this opportunity to orient students to Erika's thinking while directing the conversation in the direction of the socio-academic norms that I hoped to establish in these activities.

Teacher: Does anybody want to talk more about that? Want to talk about that, what Erika said? What did Erika say?

Ashley: She said it was really hard for her because her group was talking over her and not listening to each other. It was the same for me because with the root beer, everybody was taking the bottle and they were shaking it and pretending that they were drinking it and we didn't really get stuff done.

Teacher: Go ahead and pass that [microphone]. Pass that to Rachel, she's had her hand up for a little while.

Rachel: It was really fun for my group because we all cooperated with each other and we all listened to each other and we also learned a lot of new stuff in the process.

Teacher: Like what? Can you say one thing that you learned?

This question of mine represented a topic change from social to academic, but the conversation quickly returned to the challenges in the cooperative activity.

After one of the three original participants spoke again, I posed the following question:

Teacher: Does anybody else want to share anything about this activity that we did? Because I know that it was different and I think people had very

strong experiences, positive or negative, so I'd really like to hear more about peoples' experiences.

This led to another string of three students, two new to the discussion, talking in turn, after which I again shifted the topic to whether or not this (groupwork) is a good way to learn. After a short exchange, I requested participation from unheard voices by saying:

Teacher: Does anybody want to speak to that? There's several people that keep raising their hands. Who else has some ideas? I want to hear from someone who hasn't spoken much about our learning.

This request elicited responses from four students who had not participated in the conversation, each of whom spoke in turn, without a teacher turn in between their statements. At the end of this 14-minute discussion, 12 students had spoken, and three exchanges consisted of at least three student turns in a row. This was an unusually high percentage of speakers for our discussions.

When I first examined this transcript, I noticed that the initial questions I asked in succession were each asking something different. One possible result of this could have been that students would be confused as to which question I wanted answered. Another possibility is that the variety of the questions would invite a variety of responses appropriate to the needs and experiences of the class. While I did not consider either of these possibilities prior to asking the questions, my goal was to open the floor and see what happened. Based on the above analysis, it is clear that these students were able to navigate the terrain that the diverse questions offered, some doing so in the same response. Therefore, in line with the findings of

Wells & Arauz (2006), open-ended questions led to dialogic discussion and a low-risk environment that encouraged participation.

Beyond questions of what students want to talk about, my data indicate that requests for increased participation were highly successful in these discussions. However, I cannot analyze the results of the requests without taking into consideration the context of the conversation: the climate, the questions, and the content. The climate of this conversation was examined in a prior section and was characterized by positive-climate comments by the teacher as well as reflective and co-constructed comments by the students. The questions were almost entirely of an open-ended nature, which elicited the various perspectives present in the class without a risk of them being wrong. Lastly, the content was directly related to student experience. However, it was not just students' experience of a purely academic exercise, but rather the social dynamics and emotional experiences that characterized the content of our discussions. Regardless of the grasp that students had on the academic content, cooperative learning provided each student with a unique social and emotional experience that, in terms of being an asset to the discussion, was equal in value to every other student's. In this way, discussion participation increased because of cooperative activities.

### **Summary of Findings**

To research the relationship between two very different classroom modalities required an acceptance that the results of my action research project would be unpredictable. Prior to my research, I had almost no experience designing cooperative learning tasks or facilitating authentic discussions. However, as my



research progressed, the relationship between the two became evident. In short, the norms that govern a successful CL task are identical to those that ensure dialogue and authenticity in whole-class discussions. Of course, the formats for learning are distinctly different, and each provides benefits and challenges based on social dynamics and the personal interests of students.

The relationship between cooperative learning and authentic discussion is strong, mutual, and supportive. Content can be explored in one way through cooperative learning and conceptually reexamined through discussion. The authenticity of the discussion may depend on the constructive quality of the cooperative learning experience, but as my data show, students can have unpleasant CL experiences and then create authentic discussions during reflection. The presence of frustration and blame emphasized this point, and the need to reduce it to increase the positive affect needed for sustained motivation were clear in my research. Also, some students were better prepared to reflect constructively on their work than others. This indicates the need for greater focus on socio-academic norms (to be discussed in the Implications section).

In my analysis of participation, several findings arose. First, status and interest played a pivotal role in who spoke during class. This has been well documented (Cohen, 1994; Cohen & Lotan, 1995; Featherstone, 2011) and was supported by my research. Students who were identified with high social and academic status were more likely to talk than those who weren't. However, some students enjoyed whole-class discussions, as indicated in the survey results, and this interest sometimes superseded status characteristics. Another factor that affected

participation and seemed to reduce the role of status in student participation was my questioning strategies.

The use of open-ended questions and requests for participation increased the amount of voices in our discussions. Each time that I asked to hear from other students in our discussions, I was successful. This may have been due to the simple request, but I think it was due to the context of our discussion. The questions that were being answered by students were not right/wrong questions, but rather questions that sought to provide an outlet for the complexity of student experience in the classroom. In other words, while asking students what they learned about metric volume measurement is an open-ended question, questions such as, “did any problems arise that we should address right now?” or the following string, offer a greater range of responses, most of which focus on the students’ experience rather than the academic content of the exercise.

What do people think about that? I'd like to have a conversation about that activity that we had. Some ways you can think about it is what did you

learn, what skills did it help you develop? Did you like it, did you not like it?

Students were encouraged to be honest, and they were seldom reprimanded by me or by their peers for their contributions, even if they directly accused a group member of wrongdoing. The context of the discussion created a space where dialogue and authenticity could occur, which leads to my last finding, the classroom climate.

The above findings all occurred in a time and space that was created by the members of the community. This included the students and teacher in the class as

well as the larger school and parent community that shaped my students' vision of what education is. The school vision was one of inclusion, and as a class we worked towards this ideal from day one. Our class agreements, though perhaps different in letter—but not spirit—from those of the students who migrated to my class for math, strove towards respect and appreciation. Humor pervaded much of my instruction and interaction with students and overall engagement in learning was high. As a result of these climatic factors, cooperative learning was a possibility and students were able to take their academic and social observations from that forum and transfer them into a more public setting, that of the whole-class discussion. In this way, CL can be used to facilitate authentic discussion because it provides meaningful fodder, both social and academic, to talk about. Furthermore, students who are less comfortable in talking in a public forum have the opportunity to test their ideas in smaller groups before bringing them to the class at large. Whether CL is used to generate topics for discussion (along with developing content understanding) or as a preliminary venue for testing students' ideas before discussion, dialogue will not develop in CL or discussion in a climate that is not respectful and welcoming.

## CHAPTER 4: CONCLUSIONS

### **Implications and Recommendations**

When I began this action research project, I had very little experience as an educator and even less experience reviewing educational research to design and implement pedagogy. I began my literature review with an interest in motivation, which led to the peer interaction that is the hallmark of cooperative learning. At this time, I began my practicum experience and became further interested in the value of communicating across barriers of difference. This can be accomplished in both CL and classroom discussion, both of which draw on intrinsic motivational factors. As my own identity as an educator developed, my interest in the skills that are needed to access and communicate content knowledge became a driving force in my pedagogical choices.

I found that students had a similar interest in these skills, as demonstrated by their focus in discussion about the socio-academic norms that existed during the cooperative activities. Whether students were commenting on the pleasantness, or lack thereof, of their experience, or the academic skills and knowledge they were accessing, an environment of active listening often pervaded our classroom discussions. Furthermore, several students commented on the importance of inclusion, and it happened that those they wished to include were low-status students who often felt excluded in class and on the playground. Active listening and inclusion are essential to a true democracy, one that strives for equity in both theory and action. Perhaps the reason that traditional education does not prepare students to participate in the democratic process (Battistich et al., 1999; Noddings, 2013;

Parker, 2006) is that authentic communication is hard. It may even get harder as we grow, but in the classroom, the relinquishing of control, which empowers students to take risks and talk, continues to prove a daunting task (Berry & Englert, 2005; Schweinle et al., 2006). However, I believe that the success of my discussions, and the success of cooperative learning in general, is dependent on the teacher's conviction of students' ability to take ownership of their learning. This can only be accomplished by adjusting our vision of a productive classroom from a teacher-centered, direct-instruction focus to an empowering environment where constructing meaning and understanding through words and interactions is the rule rather than the exception.

As conscious as a teacher may be of how much space he or she allows for students to influence the course of instruction, status issues, if unmitigated, will continue to determine who participates and who benefits from modalities such as cooperative learning and authentic discussion (Cohen, 1994; Cohen & Lotan, 1995). As the relationship between my transcripts and survey results showed, status characteristics strongly correlated with who the initial participants of the discussions were. Through requesting further participation and through asking open-ended questions, I was able to provide access to a greater number of students. Also, though difficult to demonstrate in my research, other researchers have shown the value of multiple-abilities praise in addressing students' perception of their own and their peers' academic competence (Cohen, 1994; Cohen & Lotan, 1995). I incorporated this treatment into my instruction on several occasions, but the design of my project did not allow me to draw conclusions as to its effect.

As I reviewed my data and reflected on my student teaching experience, I felt grateful to have been able to conduct my research and develop my skills as an educator in an environment that emphasizes the social and emotional growth of students as much as the academic. The community-oriented philosophy of Bristol Elementary pervaded my classroom and the climate of mutual respect was familiar to my students before I became a part of their lives. True cooperation and dialogue cannot occur in a class where students fear that their peers will not respect their ideas or feelings. While I believe that the blame present in much of my students' discourse can and should be transformed to a more reflective and constructive form of criticism, had there not been a culture of active listening and respect in my classroom, students may not have felt comfortable discussing what they rightly perceived as barriers to their learning. This culture should be developed from day one, and the teacher, through his or her own behavior, can model this by utilizing humor and maintaining open channels of communication with his or her students.

### **Unanswered Questions**

The elementary classroom is a dynamic environment in which the personality of each student, his or her entire history, compounds with the classroom environment to create distinct variance in day-to-day interactions and operations. This complex web of social and emotional processes is further influenced by the rapidly changing nature of the students themselves, as they are in a state of accelerated growth and development. A teacher can never attend to all of these variables, but can help create an environment in which the strength of the relationships present can absorb the potentially negative manifestations of them.

With the current focus on academic achievement, measured by standardized tests that do not assess what is truly important in learning—effort, creativity, and the ability to learn from mistakes—showing no sign of slowing, I fear that the skills I attempted to develop in my students through cooperative learning and authentic discussion will continue to be marginalized, even though they are truly what will prepare students for economic and social success in the future. That being said, I do wonder what effect that these skills have on academic achievement. My research was not focused on achievement, and the assessments I gave during my research did not factor into my findings. In the face of the demand for measurable student growth in core content areas, did my action improve student learning?

### **Areas for Future Action Research**

While the literature extols the value of cooperative learning and classroom discussion, especially that of a dialogic or authentic nature, it is clear that these modalities were not the preferred style of learning for all of my students. This was indicated in the survey results, but more so in a few isolated incidents of extreme detachment from the activity and the group and in emotional outbursts of frustration and anger. Knowing my students as I did, it was not entirely surprising that certain ones would react in certain ways, but the social component of some of the activities actually proved to be a barrier to some, though very few, students. An area of future research that interests me is identifying the factors that prevent students from succeeding in these settings. Status and climate are two, but perhaps there are more individualized difficulties that are common among students who are challenged by cooperative activities.

Another element of my research that may have influenced my findings was that I chose math as the content area. This was practical because the content was suitable for cooperative activities. However, in our discussions we were not able to address social issues in ways that did justice to some of the overall philosophical goals of the school. Though we worked through immediate social behaviors and how they affected our work together, I am interested in the content of discussions that focus around greater systemic issues such as racism, sexism, environmental degradation, income inequality, and other societal phenomena that all students will interact with as they grow. Designing cooperative learning activities with this content in mind seems challenging, but I am interested in how the dynamics of a discussion around topics such as these would differ from the discussions born from our cooperative math tasks.

### **Closing Comments**

I was fortunate to be able to conduct my research in an environment that supported the social and emotional growth of students through the foci of community and social justice. Unfortunately, this is not the norm in mainstream public education. The increasingly high stakes of standardized testing loom over teachers, and it is a constant struggle to remain faithful to the vision that brings teachers to the profession while preparing students to demonstrate the narrow forms of achievement that these tests measure. Many teachers have already given up the fight. Education is not the great equalizer, as we have had public education in this country for generations and success continues to skew towards the dominant members of society. If education is ever going to reduce the achievement gap, it is



going to happen because teachers and schools give students the skills to observe and reflect on the ways in which we communicate across barriers of difference. That is because the gaps we see in society are very much drawn by visible characteristics of difference; gender, race, social class. The classroom can be, must be, the place where these skills are developed and refined and their importance is understood. There are so many educated people in the world, even in our own country, and yet inequality and judgment persist. What good is knowledge if we don't know how to use and communicate it in ways that serve the greater good? Education may not be serving that cause currently, so what should we do? We can start by talking about it.

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## Appendix A: Smartness Survey

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- |  |   |
|--|---|
| <input type="checkbox"/> I am good at explaining my thinking aloud | <input type="checkbox"/> I ask questions if I'm not convinced           |
| <input type="checkbox"/> I am good at explaining my ideas on paper | <input type="checkbox"/> I ask questions to help others understand      |
| <input type="checkbox"/> I am good at revising my thinking         | <input type="checkbox"/> I am good at adding and subtracting in my head |
| <input type="checkbox"/> I am good at finding my mistakes          | <input type="checkbox"/> I am good at coming up with examples           |
| <input type="checkbox"/> I am good at planning things out          | <input type="checkbox"/> I am good at staying focused                   |
| <input type="checkbox"/> I am good at making predictions           | <input type="checkbox"/> I am good at keeping others focused            |
| <input type="checkbox"/> I am good at estimating                   | <input type="checkbox"/> I am good at making connections                |
| <input type="checkbox"/> I am good at remembering vocabulary       | <input type="checkbox"/> I use math to solve real life problems         |
| <input type="checkbox"/> I am good at listening to others' ideas   | <input type="checkbox"/> I can think of creative solutions              |
| <input type="checkbox"/> I am good at drawing clear diagrams       | <input type="checkbox"/> I am curious about why things work             |
| <input type="checkbox"/> I am good at taking guesses               | <input type="checkbox"/> I like working with others                     |
| <input type="checkbox"/> I am good at finding patterns             | <input type="checkbox"/> I like figuring things out on my own           |
| <input type="checkbox"/> I am good at visualizing                  | <input type="checkbox"/> I keep trying when I get stuck                 |
| <input type="checkbox"/> I ask questions when I get confused       |   |

Three things I would like to work on are:

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## Appendix B: Status Survey

**Circle the names of the people who are the best at math in this class. Also, circle the names of your best friends.**

**Pete****Rachel****Phil****Eleanor****Ray****Chris****Heather****Steve****Amelia****Josh****Lloyd****Marlo****Rose****Erika****Graham****Paige****Amy****Ashley****Nicole****Jerry****Laura****Maurice****Adam****Sage****John****Luca**



## Appendix C: Learning Style Survey

Name: \_\_\_\_\_

Do you like working in small groups in math? Why or why not?

Do you like participating in whole-class discussions in math class, when you talk in front of the whole class? Why or why not?

Do you think you are good at math?

## Appendix D: Survey Results

	Status Votes	Good at Math?	Like Small Group?	Like Whole Class?
Pete	11	Y	N	N
Heather	7	N	M-Friends	N
Nicole	11	M	Y	N
Graham	11	Y	N	N
Marlo	14	Y	Y	N
Ray (IEP)	4	N	Y	N
Lloyd	5	Y	Y	N
Chris	12	Y	N	Y
Adam	6	Y	N	Y
Joseph(IEP)	6	Y	Y	N
Amelia	11	M	N	Y
John(IEP)	7	Y	Y	N
Amy	9	N	N	N
Ashley	8	Y	Y	Y
Sage	ABS			
Erika	10	Y	N	N
Steve	12	Y	N	Y
Luciah(IEP)	10	Y?	Y	M
Laura	10	Y	N	M
Rachel	7	Y	N	N
Brad	7	Y	Y	M
Maurice	13	Y	N	Y
Josh	11	Y	Y-Friends	N
Paige	10	M	N	N
Rose	10	Y	N	Y
Eleanor	6	Y	N	Y

---

Y – Yes

N- No

M- Sometimes/Maybe