

THE FACILITATION OF GROUPWORK ROLES DURING FIRST-GRADE
MATHEMATICS INSTRUCTION

By

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ABSTRACT

This action research project focuses upon the facilitation of roles during groupwork in a first-grade mathematics classroom. The main foci of the literature reviewed for this project include self-efficacy, learning abilities, cooperation as well as collaboration, and motivation. This research was conducted with the intention of exploring strategies that support groupwork in a first-grade classroom. The findings of this action research project first demonstrated that individual student status and student relationships must be carefully considered for successful groupwork. Second, implementing roles and groupwork norms requires much scaffolding, modeling, and practice for students. Last, time is an essential component for the successful practice of groupwork in the primary classroom. Implications include ways in which further study of developmentally appropriate groupwork practices and role enactment would be invaluable to the cultivation of self-efficacy and collaboration between students.

Keywords: groupwork, roles, self-efficacy, learning ability, cooperation, collaboration, equity, status, and motivation

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TABLE OF CONTENTS

ABSTRACT	iii
ACKNOWLEDGMENTS	iv
CHAPTER 1 - INTRODUCTION	
Problem Statement	1
Research Question	3
CHAPTER 2 – LITERATURE REVIEW	
Self-Efficacy	4
Learning Abilities	10
Cooperation and Collaboration	12
Motivation	14
Rationale for Study	16
CHAPTER 3 – RESEARCH METHODS	
Setting	18
Implementing Group Norms and Rules	20
Table 1: Monster Roles and Characteristics of Each Role	22
Table 2: Monster Roles and Characteristics of Each Role	26
Table 3: Weekly Tasks for Monster Groups	28
Data Collection	28
Table 4: Data Collection for September 12 through December 18, 2014	29
Student Surveys	33
Student Survey Matrix	34

Student Interviews	34
Table 5: Student Matrix for September and November Interviews.....	35
Video	36
Journal	37
Data Analysis and Quality Indicators	37
CHAPTER 4 – RESEARCH FINDINGS	
Shift in Research Question	43
Themes in the Research Findings.....	44
Status Influences on Students’ Understanding of Roles.....	44
Implications of the Influences of Status on Students’ Understanding of Roles	49
Implementing Roles and Norms with Scaffolding, Modeling, and Practice	51
Implications of Scaffolding, Modeling, and Practice for Students	59
Limited Time Implied Limited Implementation.....	60
Implications of Limited Time	68
CONCLUSION	70
REFERENCES	72
APPENDICES	78
A. Student Survey 1 & 2	78
B. Activities for Groupwork and Data Collection.....	79
C. Survey 1 and 2 Responses	80
D. September and November Interview Questions	81
E. Monster Role Cards	82

CHAPTER 1--INTRODUCTION

Problem Statement

Education has served many purposes throughout history. Whether its implementation has been to support a political agenda, to integrate heterogeneous student cultures, or to foster the whole child, for much of history students have been thought to either possess academic talents or not. It wasn't until I read Carol B. Dweck's *Self Theories* (1999) that I felt I could explain my opinion regarding a student's ability to learn unrestricted by fear or self doubt. Should they employ the right kind of effort and mindset towards their academic endeavors, their potential is limitless. Upon finishing Dweck's book, I became ecstatic at the prospect of helping my pupils see the difference between a fixed and an incremental mindset. By sharing Dweck's theories, I could empower students to understand the potential in adjusting their outlook on learning.

After reflecting upon my experiences working in schools abroad in Central and South America, and Spain as well as schools in Washington State, I saw much potential in helping future students develop their mindsets further along the spectrum toward the incremental rather than fixed-growth mindset. I realized the pupils with whom I worked might benefit from higher levels of self-efficacy, or their belief about their ability to achieve their goals. More specifically, I thought an environment in which collaboration between students of varying abilities was well-scaffolded would improve self-efficacy among a group of students. I was particularly motivated by the book *Smarter Together! Collaboration and Equity in the Elementary Math Classroom*

(Featherstone et al., 2011). This text provoked me to reconsider misconceptions about what it means to be smart in mathematics, among other subjects. An essential part of the model presented in the text and drawn from Elizabeth Cohen's work on Complex Instruction (cite) included assigning students to small groups, each with their own individual role. These roles can vary depending on the age of the students as well as the particular needs of the class. For my research, I was interested in using the four roles suggested by the authors: Facilitator, Resource Monitor, Recorder/Reporter, and Team Captain/Includer/Questioner (p. 42-43). These roles were created to provide each student with an invaluable set of responsibilities for a given task requiring groupwork. The intention is that no group can complete the task at hand without the support of each group member.

Status was an essential consideration for this action research project. Cohen (1993) describes status ordering as "An agreed upon social ranking where everyone feels it is better to have a high rank within the status order than a low rank," (p. 27). Cohen describes four kinds of status present in the classroom including expert, academic, peer, and societal status. The groupwork roles adapted for my action research study were developed to address status inequities during the implementation of groupworthy tasks. Lotan defines a groupworthy task as being open-ended and requiring complex problem solving, providing students with multiple entry points as well as multiple opportunities to show intellectual competence, possessing discipline-based and intellectually relevant content, necessitating interdependence as well as

individual accountability, and having clear goals which may be evaluated using the group's final product (Lotan, 2003).

Considering the implications of the academic and social status of students in a classroom setting is a fundamental aspect of creating an equitable learning environment. Cohen (1994) explains status ordering as being “an agreed upon social ranking where everyone feels it is better to have a high rank within the status order than a low rank” (p. 27). Cohen continues by defining four different kinds of status found in the classroom including expert, academic, peer, and societal status.

Research Question

The aforementioned sources of inspiration prompted me to ask myself what such groupwork practices would look like in an elementary classroom. Thinking about the various academic, social, emotional, and developmental needs of students, I decided to put theory into practice during my student teaching experience. The primary question I developed for my action research was: How does the facilitation of roles during groupwork encourage participation and attend to status differences among students? In addition to this question, I explored a number of topics relevant to educators while considering the implications of facilitating groupwork. Relevant questions included: How can educators encourage students to revise their thinking during class? and How can tasks requiring groupwork help to provide differentiation in the classroom? The intention of my action research project was to explore how groupwork strategies affected my students' self-efficacy and, as a consequence, developed their collaborative work ethic.

CHAPTER 2 -- LITERATURE REVIEW

In preparation for my project, I began to answer my research question How does the facilitation of roles during groupwork encourage participation and attend to status differences among students? by reviewing the research of scholars who have examined individual student characteristics and collective classroom practices. This literature review will summarize the content and findings of various studies and theories regarding the relationship between self-efficacy and groupwork practices in the contemporary elementary classroom. Also included in this review are salient subtopics related to the central theme of my research. These subtopics focus upon intrinsic motivation, language acquisition, collaboration between students of varying abilities and learning challenges in groups, as well as intervention strategies (explicit scaffolding).

Self-Efficacy

My interest in self-efficacy goes beyond the academic context of the elementary school in which I conducted my study. Bandura, Barbaranelli, Caprara, & Pastorelli's study *Self-Efficacy Beliefs as Shapers of Children's Aspirations and Career Trajectories* (2001) indicates a student's level of self-efficacy is known to have serious implications for their academic success as well as their potential career, social, and self-regulatory endeavors outside of the classroom. The credibility of this study is strong as evident in the prolonged and persistent engagement of the research.

Levels of the students' self-perceived efficacy were measured twice during the longitudinal project over the course of a year. The external validity of this study is strong as the participants included 272 children, 142 males and 130 females, from 11 to 15 years of age. Researchers saw a strong correlation between "The impact of parental aspirations on their children's perceived occupational efficacy [which was] entirely mediated through their children's perceived self-efficacy and academic achievement." (p. 197). The diverse community of the study participants was said to be a microcosm of society. However, I find the transferability of this study limiting because it was performed outside of Rome, Italy in a society where there is a strong emphasis on career preparation from a young age. More specifically, students' perceived strengths in different subject areas a young age are significant determiners for the future course of their studies. Because not all societies follow a similar model of career preparation, there is potential for disagreement "between the study site and receiving context," (Mertens, 2009, p. 259). Within the study sample, the following classes of laborers were represented in the participants' families: professional/managerial, merchants, operators of business, skilled workers, unskilled workers, and retired community members. Researchers stated "The socioeconomic diversity of the sample add[ed] to the generalizability of the findings" (p.191). The findings were presented in an organized fashion, providing the specifics of the study's protocol which detailed the researchers' process. This description of Bandura et al.'s (2001) methodology ensures the dependability of the research's conclusion regarding self-efficacy and its effect on children's career aspirations.

Other studies reviewed for my action research project echo Bandura et al.'s (2001) findings. A child's self-efficacy can be significantly influenced by many forces in their lives including school as well as their family's own perceptions of self-efficacy and their expectations for their children's self-efficacy (Bandura et al., 2001). One's perception of their self-efficacy directly effects the choices they make regarding activities in which they participate, the level of perseverance during various activities, the amount of effort invested in tasks, and the consequential success achieved (Bandura & Schunk, 1981). If educators can come to understand the importance of scaffolding instruction and activities so that students can become powerful agents in cultivating self-efficacy, the self-efficacy students develop in school will prove invaluable for the rest of their lives. Participation during groupwork and perceived student status are influenced by a pupil's level of self-efficacy, the exploration of which is driven by my research question.

Pajares (2002) alludes to the fact that self-efficacy is tremendously important for students once they leave the classroom and find themselves faced with adversity in the real world. This is especially salient when one considers the marginalized populations in society who suffer from the oppression by the privileged classes both in and outside of schools. Students of Color disproportionately come from communities with low socioeconomic status and consequently attend schools of lower quality than the schools of privileged, middle and upper-middle class students, a majority of whom are White (Sensoy & Özlem, 2012). In schools students with learning challenges, differently abledness, from poor communities, without fluency

in prescriptive English discourse, and others who identify their gender as not belonging to the traditional binary often suffer from low self-efficacy. With regard to the aforementioned students who do not fluently speak the standard dialect of English be them ELLs or no, it is understood that they disproportionately struggle with academics, especially literacy, when compared with their Standard English-speaking peers (Kieffer, 2010). When linguistically disadvantaged students are thrust into classrooms where Standard English is prescribed, they may experience a lower level of self-efficacy than their classmates (Klassen, 2002). Because of the time I have spent observing and teaching in the bilingual classrooms of Little Town Elementary¹, I understood that linguistic ability and self-efficacy are indeed connected. This salient relationship between language and self-efficacy helped guide my research.

At the heart of the concept of self-efficacy is the understanding that humans can be categorized by having one of two mindsets: the growth mindset or the fixed mindset. The growth mindset is described by Dweck (2006) as “the belief that your basic qualities are things you can cultivate through your efforts” while the fixed mindset is one in which “you have only a certain amount of intelligence, a certain personality, and a certain moral character...” (p. 6-7). The intention for my research was to understand how randomly designated roles and group assignments during the implementation of groupworthy tasks contributed to a student’s incremental or fixed mindset (Dweck, 1999). Essential to this exploration was the understanding of an individual student’s level of self-efficacy and its correlation to a student’s personal

¹ All names of people and institutions in this paper are pseudonyms.

theory of their intelligence. Would their mindset remain stagnant or would it perhaps change from one that was fixed to an incremental-growth mindset or from one that was incremental to a fixed-growth mindset? If scaffolded appropriately, could students with an incremental-growth mindset perhaps model optimistic academic behavior, practices, and strategies for their peers with the fixed-growth mindset? In other words, could the behaviors of students with incremental-growth mindsets rub off on peers who had fixed-growth mindsets?

An important part of a student's self-efficacy is their understanding that one's peers are not necessarily competition, but rather can be resources from which strategies and knowledge are drawn. A student's level of self-efficacy can benefit from drawing upon a myriad of human resources in the classroom. The act of sharing as well as collaboration builds community, lowers the affective filter, and increases confidence (Shrum & Glisan, 2010). Schunk (1987) explores research supporting the belief that students are not only influenced by the modeling supplied by their teachers but also by their peers with whom they share characteristics. These characteristics include gender and competence in a given subject, among others. After extensively reviewing related research, Schunk (1987) concludes that "Using peers to help correct skill deficiencies also seems appropriate where peer teaching strategies fit well with learners' capabilities or the skills being taught." (p. 171). Being given a groupworthy task can act as the catalyst for students, provoking genuine collaboration and the utilization of capital. Capital is described by Yosso (2005) as encompassing "the total extent of an individual's accumulated assets and

resources” (p. 78). When students recognize the capital of their peers and that belonging to themselves, the difference in perceived social and academic status lessens. The understanding of assuaging status’ negative influence in the classroom coupled with encouraged participation is essential to answering my research question. It salient to recognize the goal of my research is equally significant outside classroom walls.

Apart from the presence of self-efficacy in the classroom, the world outside of the classroom provides students with limitless situations and circumstances in which their tendency to employ a fixed or growth mindset (Dweck, 2006) will determine the course of their lives. An important part of participating in society outside of school is finding an occupation that is both enjoyable and will financially sustain an individual. Such an occupation is an important part of life and significantly influences social interactions, one’s general level of happiness, and cognitive processes (Bandura et al. 2001). Klassen (2002) writes he is in agreement with Bandura regarding the fundamental characteristics of self-efficacy: “Among the mechanisms of personal agency, none is more central or pervasive than people’s beliefs about their capabilities to exercise control over events that effect their lives,” (Bandura, 1995). This statement has led many researchers to question what forces, activities, and practices help children improve their level of self-efficacy so they can best achieve their aspirations.

It is powerful knowledge for teachers, parents, and students themselves to understand how to improve their self-efficacy (Michaels, 1981; Wang & Guthrie,

2004; Alexander & Buehl, 2005; Morgan, 1984). After conducting a review of the aforementioned literature explaining self-efficacy and its implications in the classroom, I realized my action research could help me improve my practice as well as my students' levels of self-efficacy. The groupwork practices suggested by Cohen (1994) coupled with Dweck's (1999) theories about mindsets led me to design my research around facilitating roles during groupwork to attend to status differences among students. I decided that implementing roles during groupwork with my students might help them to look to one another as resources. The need for each student to use their peers as resources was inevitable as groupworthy tasks necessitated collaboration. I wished to implicitly show my students that each of their group members was invaluable with regard to the successful completion of a given math activity. Furthermore, I wanted my students to recognize themselves as resources for their peers. By being cognizant of the skills and strategies one can contribute to their group during mathematics activities, I believed a student would have an improved level of self-efficacy. Of course, in order to scaffold instruction so my students would be able to effectively employ their roles and participate in groupworthy tasks, I needed to carefully differentiate for my students' individual learning needs.

Learning Abilities

I attempted to pay special attention to my methods of instruction while teaching so my students would acquire much of the content and language delivered in each lesson. I understood my pupils owned a wide and colorful spectrum of learning

abilities, rendering my instruction worthless if I did not differentiate for their needs (Tomlinson & Eidson, 2003). Research shows small group reading instruction for ELLs helps them to collaborate with and support one another (Kamps, Abbott, Greenwood, Arreaga-Mayer, Wills, Longstaff, Culpepper, & Walton, 2007) Edstrom (2006) found that the varying linguistic ability of English speakers while acquiring Spanish benefitted their understanding of various dialects and discourses in the target language, Spanish.

In a typical classroom, students can be observed paying more attention to their peers than their teacher at times. This natural behavior can encompass what Cohen (1994) calls “status ordering- an agreed-upon social ranking where everyone feels it is better to have a high rank within status order than a low rank” (p. 27). A student can be perceived to have high or low academic or social status. As a consequence of their standing, the student attracts more or less academic or social attention from their classmates. Should a student with a learning disability or other differently-abled characteristic be put in a group with high status students, it is possible the students in the latter group will not look to their differently-abled peer for answers, active participation, nor expertise (Schunk, 1987). Such inequity in group dynamics can be remedied, or at least improved with the scaffolding of groupwork dynamics and roles. Research demonstrates how an educator’s purposeful intervention using evidence based, small-group instruction with students struggling with reading comprehension and oral academic English development is effective (Kamps et al., 2007; Tong, Lara-Alecio, Irby, Mathes, & Kwok, 2008). During

groupwork, this might look like differentiating components of groupworthy tasks based upon individual student needs. In other words, both roles and tasks could be differentiated to accommodate the levels of readiness, interests, and learning profiles of students (Tomlinson, 2005). By giving students options when participating and engaging with peers, their affective filter will lower and grant them better access to a lesson's content and linguistic targets (Shrum & Glisan, 2010, p. 15). Shrum and Glisan (2010) summarize Krashen's (1985) affective filter hypothesis by stating "Language acquisition must take place in an environment where learners are 'off the defensive' and the affective filter (anxiety) is low in order for the input to be noticed and reflected upon by the learner..." (p. 15). Especially in academic or social settings in which language production is an integral facet of interaction during an activity, a high affective filter can impede students from expressing themselves fluently and confidently. Using groupwork to attend to status inequities, encourage participation between students, as well as attend to individual differentiation needs are essential components of this action research study.

Cooperation and Collaboration

Groupwork, as defined by Cohen (1994), is when students work together in numbers which require the participation of all members on a specific task. It is the hope of a teacher planning groupwork activities that students can complete a task in their groups without much direct supervision nor frequent instruction from the teacher. Rather, the task necessitates "that members need each other to some degree to complete the task; they cannot do it by themselves" (p. 2). Such a need for one's

peers during groupworthy tasks is a significant source of motivation for cooperation and collaboration among peers.

Tarim (2009) writes “the cooperative learning method can be successfully applied in teaching verbal mathematics problem-solving skills during the preschool period” (325). This statement validates the efficacy of such instructional practices later in school such as with the first graders in this action research project. Tarim’s study proves its dependability with the controlled nature in which it was conducted. On control group of preschoolers was studied in one school while two experimental groups were studied in a separate school. The study provided ample details of the instruction program used to improve the participants’ mathematics practices. The confirmability of Tarim’s study is also strong as the data collected and interpreted can be traced back to its source in the form of tables and researcher observations during the participants’ displays of cooperative learning.

Though there was triangulation of the data sources (teacher interviews, student pre and posttests, and researcher observations) the collection of data from different sources could have been improved. Participants for the controlled and experimental groups came from three separate kindergarten classrooms, two of these classrooms were located in the same school building and all three belonged to private schools in Turkey. However, the children were said to have mostly come from families of the middle and high socioeconomic classes. Using data generated from participants in more diverse settings in which students from all socioeconomic

backgrounds were more likely to be present would have strengthened the credibility of this study.

Once self-efficacy practices are modeled for students, they can practice using new strategies together. Of course, not all students possess accurate perceptions of self-efficacy. Klassen (2002) writes “the writing performance of students with specific writing difficulties... [demonstrates some] students appear to optimistically miscalibrate their self-efficacy” (88). Of course, such students would benefit from additional scaffolded minilessons and collaborative activities. Certain studies show the impressive nature of successful collaboration by means of communication during storytelling and sharing time (Michaels, 1981). Researchers demonstrate how collaboration can be an effective method for practicing problem-solving skills and using language in meaningful ways (Calderón, Hertz-Lazarowitz, & Slavin, 1998). The practice collaborating in the classroom yields great benefit when students have the opportunity to work with their families. This allows students to flourish academically, especially in a language acquisition setting (Bronstein & Ginsberg, 1993). Collaboration is an essential component of this action research project.

Motivation

The next important subtopic of my research deals with the implications of differing levels of motivation on a student’s success in the classroom. Research has shown that students who come from economically disadvantaged communities often have less intrinsic motivation than their peers and that this can directly affect cognitive function and academic success (Alexander & Buehl, 2005). A parent’s

excessive control, encouragement, or lack of interest in their child's academic pursuits may influence a child's motivation as well as their attitude toward schoolwork. The importance put upon a student's endeavors by their community is one of many factors that can influence a student's motivation. During this action research project it was essential to understand how motivation influences students so I could adjust the facilitation of roles during groupwork to maximize student engagement. I began by reviewing literature that connected motivation to cultural characteristics.

Studies have explored how children's narrative styles depend upon their cultural storytelling practices (Michaels, 1981). In the study called Sharing Time, students were either encouraged or ignored by their teacher when they shared experiences with their class. It was found that if a student's culturally influenced style of discourse used in a classroom differed from their middle class, White teacher, the student received fewer collaborative experiences with the teacher. These experiences of collaboration between student and teacher were meant to foster informal instruction and practice in verbal literacy. This treatment correlated to the teacher's own predisposition to a specific (White-culture) style of narration. Wang and Guthrie (2004) performed a study that examined the level of motivation displayed by fourth grade Chinese and American students and its effect upon their reading comprehension. After observing modeled intrinsic motivational behavior, fourth grade students achieved superior comprehension when reading compared to their extrinsically motivated peers who received no such modeling. Similarly, Alexander &

Buehl (2005) conducted a study that examined the beliefs of individual undergraduate students regarding their thinking, motivation, and behavior as it pertained to their success in math. Researchers found that the university students' epistemological beliefs carried across content areas. In other words, intrinsic motivation was an asset to students beyond singular subject areas and extended even into areas in which students were novices. Lastly, research has been conducted to evaluate the effects of a family's surveillance of their child's homework on a student's motivation and academic performance (Bronstein & Ginsberg, 1993).

Rationale for Study

The studies mentioned in this literature review helped me to focus upon the connections between self-efficacy, learning abilities, cooperation as well as collaboration, and motivation. The relationship between these four foci is relevant to effective mathematical instruction in the bilingual elementary school. When students are actively acquiring language, they enjoy greater success when they learn in a collaborative environment with their peers where they engage in authentic, meaningful language exchanges. (Michaels, 1981; Kamps, Abbott, Greenwood, Arreaga-Mayer, Wills, Longstaff, Culpepper, & Walton, 2007; Tong, Lara-Alecio, Irby, Mathes, & Kwok, 2008; Edstrom, 2006; Calderón, Hertz-Lazarowitz, & Slavin, 1998). In summary, students require self-efficacy to be successful both in and outside of the classroom. Self-efficacy provides students with the belief they possess the capacity to achieve their goals. This understanding that one can meet their objectives is connected to motivation and incremental mindsets. No one is born capable of

solving riddles, puzzles, nor speaking multiple languages. We acquire these abilities through trial and error as well as persistence. Humans, as social animals, benefit from working in a collaborative manner in community settings. Each of the aforementioned essential aspects of a human's development from child to adult supports one another. In preparation for answering my research question, I reviewed the literature shared above. The literature clarified how self-efficacy, variation in learning ability, cooperation as well as collaboration, and motivation work together to support participation and attend to status differences between students.

After having reviewed this research, I was looking forward with much anticipation to conducting my own action research. I felt prepared to learn from the lessons that blossomed from the groupwork I implemented during mathematics instruction in the first grade classroom using randomly assigned groups and randomly assigned roles to measure a change, if any, in my students' levels of self-efficacy. The review of the literature helped me better approach my research inquiry of how does the facilitation of roles during groupwork encourage participation and attend to status differences among students?

CHAPTER 3--RESEARCH METHODS

Setting for Research Study: The School Environment

The elementary school in which this study was conducted was quite a unique academic institution because of both the student demographics and the bilingual program implemented in the pre-kindergarten program through the 5th grade. Of the approximate 500 students at the Little Town Elementary School, 65% of the students were native Spanish speakers and over 90% of the students were eligible for free/reduced lunch. Although the bilingual program was believed to provide students with a bright future due to their acquisition of multilingual abilities, the middle and high schools in the district did not offer bilingual instruction. This meant that the elementary students would require motivation and the means to maintain their bilingualism outside of the traditional upper level academic institutions, potentially determining the remainder of their academic and professional careers (Bandura et al., 2001). Because many students struggled with the acquisition of a non-native language at school, and as the poverty rates were high in the community, it was important to consider the effect of the students' self-perception of self-efficacy with regard to academics, their learning community, and their professional potential outside of the classroom.

In the first grade English classroom where I conducted my research, I had 23 students in the morning group and another group of 23 students after lunch. The

two groups of students were instructed in English for half of the day and Spanish during the other half of the day. The staff at the elementary school made a great effort to honor the Spanish Days and English Days at school during which one of the two languages were be spoken in the hallways between staff and students, over the intercom, and when answering the school's telephone. Because of the linguistic environment outside the school's walls, Mondays, Wednesdays, and Fridays were designated as Spanish Days and Tuesdays and Thursdays were English Days. I respected the need for my students to have equitable access to the designated target languages inside and outside of class, though the kindergarten and 1st grade teachers were allowed to use Spanish at their discretion to help their young students gain access to lesson content. Especially considering the number of unexpected students who arrived after the beginning of the academic year from Guatemala and Mexico, who often did not speak Spanish fluently but a native language instead, it was vital that I spoke both Spanish and English in the classroom.

Of my 46 students, 3 had an IEP for mathematics, 13 were ELLs, 3 were considered gifted and were candidates to move to the next grade, and 2 were developmentally delayed with individual 504 plans. 26 of my students were boys and 24 were girls. I used various pedagogical practices in my first grade classroom to support my students including encouraging communication between teacher and student and between students, the use of Guided Language Acquisition Design (GLAD) strategies, comprehension checks and informal assessments, as well as

employing strategies and activities which complemented the variation in learning styles of my students.

Implementing Group Norms and Roles

During the beginning of the year, I gently introduced the implementation of roles for groupwork during mathematics instruction. I relied heavily upon the work by Cohen and Lotan (2011) to guide my creation of roles as well as expectations for groupwork. I explained the classroom was a community for learners to students before putting them in groups. I also made sure students understood that as a class we were going to collaborate in our community to learn together. I explained that learning together required patience, practice, and communication between students. In order to work together, there were guidelines which we needed to follow to provide an optimal learning environment for one another. I facilitated a large group discussion about what community and groupwork might mean.

The roles assigned to group members during math activities were adopted and adjusted to fit my pedagogical and research agenda from Smarter together! Collaboration and equity in the elementary math classroom (2011). These roles included: the facilitator or Time Monster who gets their team off to a quick start, makes sure everyone knew what they were to do, and organizes the team so they can complete the task; the resource monitor or Tool Monster who collected supplies necessary for a task, called the teacher to the group if help was needed (a responsibility I reassigned to the Question Monster in my classroom), and returned materials to their proper place after a task had been completed; the recorder or

Question Monster who gave updates on the progress of the group, made sure group members were recording necessary data, attempted to answer the group's questions before going to the teacher, and asked the teacher questions on behalf of the group; and the team captain or includer or questioner or Fair Monster encouraged their teammates to participate, used norms, made sure everyone was on task and fulfilled the requirements of their role.

September 15 was the first day I introduced the Monster Roles to my first graders. I explained that we would be working in groups almost everyday during math. We would work in groups that were randomly assigned. I would pick students to be in groups using popsicle sticks with the students' names written on them. Each group would have four members, or Monsters. The groups would change each week, which meant the same four students would be in a group together for five school days, or five consecutive math lessons. Students would be assigned a new Monster Role each lesson to ensure they had an opportunity to assume and practice each role. After explaining the rotation of the groups and the group composition, I told my students who the four Monsters in each group were. There was a Fair Monster, Tool Monster, Time Monster, and Question Monster (see Table 1). I showed students the Monster Role Cards and asked them what each Monster might do or how they might act when working with the other three Monsters. While students sat on the carpet, I encouraged them to first think in their heads what a certain Monster's Role may entail. After waiting 30 to 60 seconds, I asked students to share their ideas with their neighbor. Once students had ample time to share, I asked volunteers to share what

their peer had told them. I repeated the ideas shared by students and repeated the characteristics of the Monster that were important to my action research study. After our conversation, as a class we had decided upon the characteristics, which both set the Monsters apart and made them irreplaceable in the Monster Group. These characteristics loosely followed those prescribed in NCTM's Smarter Together! (2011). My class and I collaborated upon the roles, which would suit the developmental needs of the students (see Table 1).

Table 1

Monster Roles and Characteristics of Each Role

Monster	Characteristics
Tool Monster	Gets tools ready for task, takes care of tools, ensures all Monsters respect tools, make sure all tools are put away properly and completely upon finishing task
Time Monster	Know how much time group has for activity, listen carefully when Miss Kelly says how much time is left for activity, watch stop-watch on screen, alert team when time is almost up, keep team on task during activity
Fair Monster	Make sure all Monsters are taking turns, ensure all tools are distributed equitably, include Monsters who may feel left out, if a problem arises try to solve it (go to Question Monster as a last resort who in turn can talk with Miss Kelly to resolve conflict), acknowledge when Monsters are working well together in group
Question Monster	If a Monster in the group has a question help them answer it by asking other group members for a solution, if a question or conflict cannot be resolved by group alone speak with Miss Kelly (Question Monster is only Monster who is supposed to speak with the teacher, a guideline meant to encourage the group to solve problems together without automatically seeking the help of the teacher)

Each subsequent time Monster Roles were used, I asked the students to supply the characteristics of each Monster Role before beginning a task. This occurred after the group's task had been introduced, explained, and modeled for students. I began this Monster Role review by asking students to raise their hand

when they thought of one of the four Monsters we used during groupwork. Once one Monster had been shared, I asked the student who shared the Monster Role's name to tell me about that particular Monster. Using the document camera, I showed the Monster Role Card (see Appendix E: Monster Role Cards) corresponding to the Monster shared by the student. Once the student described the Monster Role to the best of their ability, I asked other volunteers to add information to our lexicons, developed our understanding of each Monster. If the entire group was unable to recall all facets of a Monster's responsibilities, I made sure to provide information to fill in the gaps of Monster knowledge. Once each Monster Role had been described thoroughly (see each Monster's characteristics in Figure 1: Monster Roles and Characteristics of Each Role) students began the math task in their Monster Groups.

The use of these roles took a significant amount of practice. In fact, it was quite disappointing to terminate my research in November after a few short months of its implementation due to time restrictions before my students were granted the opportunity to become comfortable with their Monster Roles. I could see the students quite enjoyed using Monster Roles during math lessons, although each Monster was regarded differently.

I knew that most of the class favored Tool Monster, though not for the reasons I had anticipated. Tool Monster was asked, without fail, to distribute, care for, and collect the tools each lesson. This role was predictable, safe, and entertaining for my first graders. The Tool Monster Role was not easier than any other to perform. I observed Tool Monsters disregarding their peers when they blew cards from the

table to the floor, purposefully rolled dice onto the ground, and yanked a material from their peers' hands. I believe that the Tool Monster Role, just like the others, required more practice and modeling than I provided rendering these Tool Monster oversights quite natural.

Fair Monster was also highly regarded as a fun Monster to play. This Monster somehow became synonymous for "The Boss", fulfilling the NCTM Team Captain's duties of enforcing the use of norms (p. 43). One student was particularly upset when he was assigned the role Fair Monster because he thought that Fair Monster assignment automatically granted him the right to go first. This was an assumption that he made because the day before, the student in his group who was assigned Fair Monster was asked to go first during the group activity. After this six-year-old erupted out of indignation, I calmly explained that the Monster who begins the task may change each time. I silently noted that my students would perceive having a more predictable system as fair. There were many occasions during which the Fair Monster did indeed solve problems, especially those that involved deciding whose turn it was during an activity. The simplest method for making such a decision involved the first grade Fair Monster to ask their arguing fellow Monsters to rock-paper-scissors for the turn. Students quickly accepted this simple, quick, and irrefutable method facilitated by the Fair Monster for determining whose turn it was.

Question Monster was unpopular because some students misinterpreted its role as one of being the sole Monster responsible for answering all questions from their group members. During my weeks of observations, I found when a group was

stuck or had a question, only a small fraction of the time did the Question Monster answer a question or approach the teacher for help. I was slightly disappointed that when the Question Monster did indeed have a question to ask me, rarely was it about the task at hand. Rather, it had to do with their group members not getting along smashingly.

Time Monster was not regularly given what students may have perceived as important tasks during groupwork. In the beginning of my action research project, I asked each group's Time Monster to come to the front of the classroom so that I could tell them how much time was left for a particular activity or relay a special piece of information to them including how to clean up after completing an activity as well as an adjustment to the activity at hand. Because I observed some students sighing with boredom upon being assigned this role, I made an effort to make their role more entertaining than watching a stopwatch which, in truth, any of the Monsters could have done upon casting their eyes on the big screen at the front of the room.

Table 2
Monster Roles and Characteristics of Each Role²

Facilitator	Resource Monitor	Recorder/Reporter	Team Captain/ Includer/Questioner
<ul style="list-style-type: none"> - Gets the team off to quick start - Makes sure everyone understands the task - Organizes the team so they can complete the task - “Who knows how to start?” - “Does everyone get what to do?” - “I can’t get it yet. Can someone help?” - “Can someone explain it another way?” - “We need to moving so we can...” 	<ul style="list-style-type: none"> - Collects supplies for the team - Calls the teacher over for a team question - Cares for and returns supplies - Organizes cleanup - “I think we need more information here.” - “I’ll call the teacher over.” - “We need to clean up. Can you... while I...” - “Do we all have the same question?” 	<ul style="list-style-type: none"> - Gives update statements on team’s progress - Makes sure each team member records data - Organizes and introduces report - “We need to keep moving so we can...” - “I’ll introduce the report, then...” - “Did everyone get that in your notes?” 	<ul style="list-style-type: none"> - Encourages participation - Enforces use of norms - Finds compromises - Ensures that each person is doing his or her role - Substitutes for absent roles - “Remember, no talking outside the team.” - “Let’s find a way to work this out.” - “We need to work on listening to each member of the team.”

By practicing the implementation of roles during groupwork (see Table 2), I made a great effort to lower my students’ affective filters during mathematics instruction. The cooperation and collaboration between students while implementing their roles during groupwork tasks was essential for lowering the affective filters of my students. In order for students to successfully implement their roles with their peers, it was necessary for them to help one another remember their responsibilities while enacting each role. I made an effort to ensure each role was necessary for each

² Featherstone, H., Crespo, S., Jilk, L. M., Oslund, J. A., Parks, A. N., & Wood, M. B. (2011). *Smarter together! Collaboration and equity in the elementary math classroom*. Reston, VA: The National Council of Teachers of Mathematics.

groupworthy task. Before beginning a task, I asked students what they imagined each role would look like during the task they would complete. Using the think-pair-share strategy, I invited all students to participate in brainstorming what the collaboration between roles during an activity would look like. According to Wood (2007), six year olds engage in more elaborate and cooperative play than they did at five years of age (p. 79) although at seven years of age, students are said to enjoy working by themselves (p. 91). By scaffolding the activity so each student understood what cooperation with their peers would look like, they were motivated to perform their individual roles well.

Table 3

Weekly Tasks for Monster Groups

Week	Examples of Monster Groupwork Activities
Week 1	Students are given cards with numbers on them and asked to take turns choosing one card and asking the Monster next to them to choose the number one more or one less. The focus of the activity is to meet the learning target (becoming proficient with teen numbers) as well as practice groupwork norms and Monster Roles.
Week 3	Students participate in an activity which focus upon tens and ones place value practice. Students take turns in Monster Groups casting dice and reading teen numbers.
Week 4	Students continue to practice ordering numbers. Given number cards 10-39, they are asked to work in their groups to put the mixed up cards in order on their desks.
Week 5	Students will play more than/less than/equal to game with cards and greater than/less than/equal to sign which represents the numbers' relationship to one another.
Week 6	Students will work in Monster Groups and use dice to create numbers after which they will say which number is one more/one less than rolled number. Students will take turns with dice. The person next to the roller will say what number is one more or one less before taking the dice themselves and challenging the person next to them. This activity can be revised to include more dice and challenge students to instead say which of the two rolled values is greater than the other or which is less than the other.
Week 7	Students will be given a worksheet which has different objects on it that correspond to actual objects found in a basket at each group's table. Students will be asked to estimate and then measure these objects with cubes, recording their data and that of each group member on their worksheet.
Week 8	Students will be given a worksheet similar to that from Week 7 which has different objects on it that correspond to actual objects found in a basket at each group's table. Students will be asked to use different sized paperclips to estimate and then measure the objects, recording their data and that of each group member on their worksheet. Later there will be a discussion at the tables about why different group members got different answers.

Data Collection

I used a mixed methods approach to collect both qualitative and quantitative data for my study (Mertens, 2009). Data was collected over the course of 15 weeks beginning the first week of my student teaching at Little Town Elementary School. I collected data in the form of student surveys, student interviews, video footage of groupwork activities, and a reflective journal. By employing various strategies for

acquiring information regarding the effects of groupwork on my students, I was able to triangulate my data, ensuring its credibility (Mertens, 2009). Table 1 displays the data collection timeline for my action research project.

Table 4

Data Collection for September 12 through December 18, 2014

Week	Data Source for Collection
Week 1	Journal, First Student surveys
Week 2	Journal, First Interviews Students 1-10
Week 3	Journal
Week 4	Journal, Full-time Student Teaching
Week 5	Journal, Full-time Student Teaching, edTPA
Week 6	Journal, Full-time Student Teaching
Week 7	Journal
Week 8	Journal, Video
Week 9	Journal, Video, Second Interviews Students 1, 3-10
Week 10	Journal, Video
Week 11	Journal, Second Student Surveys
Week 12	Journal
Week 13	Journal
Week 14	Journal
Week 15	Collect Last Interview Student 2

I commenced research collection after having told my students I would give them a survey in the beginning of the autumn and at the end of the autumn so I know how best they liked to work (See Appendix A). I noticed a few trends upon collecting September student surveys. Some students colored in the smiley face in response to every question, indicating they were in agreement with all of the survey's statements.

I thought perhaps I had not been clear enough when explaining what each face implied and the importance of choosing the face that best corresponds to the students' disposition related to the statement, especially to my ELL and native English students. Ten of the 47 students colored the same face icon for each statement, rendering their responses questionable and most likely inconclusive sources of evidence. Continuing to review the September student surveys of both the Morning and Afternoon Group, I found many students indicated they were unwilling to explain their thinking. Few students enjoyed learning new information and few students indicated they enjoyed using manipulatives. From the responses I reviewed during the September surveys, I chose five students from the Morning Group and five students from the Afternoon Group for interviewing.

I told my students that I would be filming them as they worked in their Monster groups some days. I explained that I filmed them during groupwork activities so I could later watch the recordings and concentrate on how they worked well together as well as how I could help them improve their ability to work in groups. I told students that it would be best if when they were being filmed, they pretended like the camera was not there. When filming groupwork, I used both a handheld recording device and my laptop. The handheld device was useful for gathering data as I visited different Monster Groups in the classroom. I was able to efficiently check-in and troubleshoot while recording student concerns, frustrations, and successes. The laptop was a useful recording tool as I was able to leave it unattended and situated so that it would record a specific group's interactions during

an entire activity. Video data collected with the laptop gave me a unique perspective on the students' work in groups. Uninhibited by the presence of an adult or the threat of reprimanding, students engaged quite authentically together. In the footage captured I observed horseplay, bickering, exclusion, inclusion, persistence, collaboration, silence, and laughter among other activities (math-related or otherwise). By employing a handheld camera, I was able to focus on situations in which I interacted with students, asking them how their group was working well or not so well together. After a few minutes, the first graders ignored the laptop I used to record groupwork. I found such observations in the video footage useful for my research because they offered valuable information about the social and academic status, both that which was detectable and that which was more inconspicuous. Using video as a source of data was invaluable for my research.

Journaling provided me with a means to synthesize and organize the information gathered from observations of student groupwork in the classroom, video footage, student surveys, and interviews. I used my research journal as a means to take notes while observing the other sources of data. When writing in my research journal during groupwork activities, my informal comments and questions helped me develop codes to employ when reviewing my research data as well as potential inquiries that may provide salient findings. I was able to find themes in my data related to my research inquiry by following steps one through four for coding (Auerbach & Silverstein, 2003). On the first page of my journal, I wrote my research concern clearly. This central allocation of my research question made it easy for me

to revisit the wording and focus of my research inquiry. Next, I used a highlighting system to choose between relevant and irrelevant text in my journal. As I began to group questions and thoughts into ideas, I found themes developing which related to my research question. These themes included group harmony, group conflict, isolation, inclusion, multilingual capitol, student frustration (sometimes in the form of outbursts and aggression), insufficient time, and missed opportunities for reflection/scaffolding/modeling among others.

I labored to keep an open mind as I observed trends in my data, understanding findings can sometimes be unexpected. I color-coded the themes I found while scrawling new comments and questions arising from these themes in the margins. The color-coding of observational, video, interview, and survey data was organized and coded in my journal. Themes were condensed into findings. It took longer than I expected for my findings to be succinctly categorized into no more than three findings. This was because I found most ideas were related to others, resulting in a web of findings. Auerbach and Silverstein (2003) suggest when coding and analyzing qualitative data that the researcher be cognizant of the implications of broad and narrow ideas. It is also essential to consider the value of second thoughts. If one idea suddenly seemed to fit better with a theme different than before, it is best I made adjustments as my research inquiry and good sense dictated. After making the necessary changes, I was able to develop my research's themes into findings.

Student Surveys

Before beginning my research, I wanted to acquire a better understanding of my students' dispositions toward mathematics, collaboration, learning styles, and academic activities in general. Shortly after the academic year commenced in September 2014, I gave all 46 of my students a mathematics survey. The survey included the following statements which students were asked to rate with a frowning face, indifferent face, and a smiling face:

1. I like working with a partner.
2. I like working in a group.
3. I like working by myself.
4. I like when a student helps me.
5. I like when the teacher helps me.
6. I like to help others.
7. I like playing games with math.
8. I like explaining my thinking.
9. I like learning new things.
10. I like using manipulatives.

I took great care to explain the instructions to my students before we began the survey. Each student was asked to use a crayon to write their name atop the survey and with which they could color in the face that corresponded to their feelings toward the ten I like... statements. The crayons were employed so changes in opinion would be obvious during the administration of the survey should a student suddenly realize upon further reflection they did not agree with an answer they gave. I read each statement aloud to the students one at a time. After reading the statement, I motioned to the whiteboard where I had drawn a similar set of faces to those on their surveys. Pointing to these faces, I reiterated their meaning with an explanation, the tone in my

voice, and a matching facial expression to emphasize the meaning of the symbols for my ELLs. I waited for every student to finish coloring in their chosen expression before moving on to the next statement.

Student Survey Matrix

Once I had the completed surveys in hand, I created a matrix of the students in my morning and afternoon classes. This matrix included trends in the answers provided on their surveys, distinctive academic or social behavior observed and noted in class (especially that pertaining to perceived status), as well as pertinent information found in IEPs, 504 plans, and student profiles from the previous year's kindergarten educators. Using this Student Survey Matrix, I selected 10 students, 5 from the morning group and 5 from the afternoon group, who I wished to interview in September. I planned to conduct the same survey in November after having implemented the groupworthy tasks and roles during mathematics instruction. Some of the students I selected were chosen because their varied answers piqued my interest. Other students were chosen because they provided the same answer for each survey statement. I was curious to speak with a number of the students who only colored in the smiley faces with crayon, ignoring the indifferent and unhappy faces (see Appendix C for Survey 1 and 2 Responses).

Student Interviews

I conducted interviews with 5 students from the morning group and 5 students from the afternoon group (see Table 2). Beyond selecting an equal number of pupils from each group, I attempted to choose an equal number of girls and boys

(though I interviewed 6 girls and 4 boys in the end), ELLs and native English speakers, as well as students with and without diagnosed learning challenge (see Student Matrix). The cause for my interviewing one more girl and one fewer boy than I had planned was because I decided to interview students who represented a variation in multilingualism, a fondness or dislike of mathematics, as well as students with both heterogeneous and homogeneous survey responses (i.e. surveys with only smiley faces colored). Table 2 displays the different traits, which distinguished between one surveyed student from the next.

Table 5
Student Matrix for September and November Interviews

Student	Group	Gender	Defining Characteristics
1	AM	M	L1 is English
2	AM	M	L1 is Spanish Slower processing time
3	AM	F	L1 is English Held back in kinder for social and emotional immaturity
4	AM	F	L1 is Spanish, bilingual
5	AM	F	L1 is Mam ELL and Spanish language learner
6	PM	M	L1 is English IEP for Autism, hyperactive tendencies, sees speech specialist
7	PM	F	L1 is Spanish, bilingual
8	PM	F	L1 is English
9	PM	M	L1 is Spanish, bilingual
10	PM	F	L1 is Spanish, bilingual

In order to assess any change in disposition regarding working alone, with a partner, with a teacher, or in a group as well as a student's current fixed or incremental-growth mindset, I asked students the same questions during the September and November interviews except for numbers 10 and 11 which were only

used during the November interviews. Examples of these questions included (See Appendix D for the entire list).

In the beginning of each interview, I asked students if they preferred I conduct the interview in English or Spanish. Unfortunately, I do not speak Mam nor Q'anjob'al³ like many of my students. My polyglot shortcomings left Student 5 at a disadvantage. She did not have equitable access to the interview questions as they were not expressed in her native language.

During the first series of interviews, I asked students questions 1-9 and 12-13 without using voice or video recording technology to ensure I could catalogue all of their responses. I quickly typed their answers into a document on my computer, sometimes asking them to wait a moment while my racing fingers caught up. During the second round of interviews, I made sure to videotape the conversation I had with my students. This allowed me to pursue certain trails of thought belonging to myself as well as my students.

Video

In order to collect data for this research project, I used video cameras to record footage of students working together in math groups. The video footage focused on individual groups performing specific tasks and the interactions between members. I collected footage of the initial scaffolding lessons, which were meant to prepare students for their groupwork. I also collected footage of students working in their groups with and without teacher supervision so that I could understand how

³ Mam and Q'anjob'al are two Mayan languages spoken in Guatemala as well as Mexico.

their dispositions and interactions changed depending upon the level of perceived adult supervision.

Journal

I kept a journal in which I reflected upon my observations, emotions, questions, assumptions, and inquiries that guided the study. I put forth a great effort to use the journal to make observations that were as objective as possible. I was sure to include the date and time of each journal entry so that I was able to easily return to my entries and compare my notes to video footage of students working together. This journal helped me to modify and adjust my research efforts in the case that my focus shifted. My research question did not change, but where I looked for and found answers did change somewhat unexpectedly. The journal was employed as a paper trail of my action research project with the first graders.

Data Analysis and Quality Indicators

To analyze my findings, I created a Data Analysis Matrix of the information I collected from my 46 students. This matrix included space for me to record brief notes from the interviews, surveys, video footage, and journal entries. This matrix helped me to mentally and tangibly organize my data so as to make it less cumbersome and more inviting during the coding process. I coded the data first starting with the surveys and then moved to the interviews. I continued by coding the video footage, taking care to see similarities or differences between the codes I had already established and to identify holes in my coding. Last, I used the journal I kept

while conducting my research to contribute to the codes from the other three sources of data. I carefully watched for trends and commonalities while coding.

Using Auerbach and Silverstein's (2003) coding strategies, I proceeded to use the following steps to organize and code my data. First I revisited the question driving my research. With my research question in mind, I was able to better focus upon the relevant information in my data. This focus kept me from becoming overwhelmed with what Auerbach and Silverstein (2003) call "... A filtering process, in which you choose which parts of your text you will include in your analysis..." (p. 42).

Having completed the first step, I began the second stage of the coding process. I reexamined interview and video footage transcripts, survey results, and journal entries. I concentrated on reviewing my data with my research question at the forefront of my mind. With practice, it became easier to distinguish what Auerbach and Silverstein (2003) call relevant text, which "... refers to passages of your transcript that express a distinct idea related to your research concerns" (p. 46), from less salient information present in the data. In my research journal, I kept a growing list of questions, concerns, and thoughts fueled by my deep exploration of the data. These ideas were rarely consolidated nor deleted, as I wanted to have a proverbial paper trail of the development of my research findings. Using the bold, underlining, and highlighting features of my word processor, I emphasized the importance of a particular wondering or surprise found in my data.

The third step entailed grouping repeating ideas together, providing the foundation for developing findings and implications of those findings (p. 54-55). Though Auerbach and Silverstein (2003) recommend this process be completed by a group of researchers, I made due with my own observations. In lieu of benefitting from the perspectives and sets of eyes of others, I carefully viewed and continued to review my data while grouping ideas and continuing to write in my research journal. Examples of such repeating observations in my data include bossy peers, ELL's observation and imitation of task as performed by peer, bilingual support, ignoring negative behavior within Monster Group, secretly trading task cards, high status and low status Monster Roles, resolution for unfair situation (turn-taking strategy), mediation between two or more people (students or students and teacher), exclusion within Monster Group, retreating from interaction with Monster Group members, random grouping, group reassignment, groupwork unexpectedly shifts to work in pairs or individual work, frustrations building to physical altercations, tattling, sharing, huddle, etc. These ideas were consolidated into themes prevalent throughout the sources of data.

The concentrated themes were reorganized into categories during the fourth step of the coding process. Using an idea web on a pad of paper, I began to associate the repeated observation from step three into coherent themes. In the beginning of this process, I did not mind if there was overlap of ideas between two or more themes. As I continued to review my data, I developed stricter guidelines for themes. My smorgasbord of data was transformed into main ideas and finally, the following

themes: inharmonious groupwork, collaboration, cooperation, exclusion, and inclusion.

Once I had successfully formulated my research question upon beginning this action research project, I listed different quality indicators I would include to enhance the quality of my research. I used credibility, transferability, confirmability, dependability, and transformative quality indicators (Mertens, 2009).

In order to meet credibility requirements, I made sure to have no fewer than three sources of data, which would help me to answer my research question. I administered the same disposition survey once in September and again in November to observe differences in student opinion regarding mathematics and groupwork. I conducted student interviews once in September and again in November during data collection to explore how and why student opinions regarding mathematics, Monster Role status, incremental and fixed-growth mindsets (Dweck, 1999), and groupwork may have changed over the course of the study. I recorded video of my delivery of directions before groupwork, the scaffolding of Monster Role development, as well as students working in Monster Groups. I kept a tidy paper trail of pertinent information from the surveys, interviews, video, as well as my observations during class in my research journal. These four methods of data collection meet the standards for data triangulation (Mertens, 2009, p. 258-259).

This study meets the requirements for transferability in the form of the thick-rick description present in the description of context, action implemented, and data collection procedures. Mertens (2009) writes “...thick description enables

readers to make judgments about the applicability of the research findings to their own situations.” (p. 259). One may see the utility in transferring the findings offered by this action research project to their own practice because of the thorough commentary provided in this paper. Although the school environment in which this research was conducted is quite unique, an educator can surely determine how this study would have worked similarly or differently in their own school community given the description of the research conducted.

Mertens (2009) claims “Confirmability means that the data and their interpretation are not figments of the researcher’s imagination. Qualitative data can be tracked to their source, and the logic that is used to interpret the data should be made explicit” (p. 260). Given that this action research project was peer reviewed, the interpretation of the data is indubitably not a figment of my imagination. The collection of qualitative data sources implemented throughout this study can be tracked to their source, be it journal entries, video footage of groupwork, student interviews, or student surveys.

“Transformative criteria for quality in qualitative research are situated in concerns for social justice and human rights,” (Mertens, 2009, p. 260). I consider this action research project to be built upon a foundation of equitable pedagogy. The research inquiry itself seeks to ameliorate injustices present in student status and to make learning accessible for all. Especially given the numerous ELL students present in the classroom, I formulated my research question so that I was able to attend to the academic scaffolding which supported all of my students, especially my ELLs, to

access lesson content in a safe, predictable, and enriching environment. Such was my intention upon using NCTM's (2011) Smarter Together! and Dweck's (1999) Self-Theories to guide my research and my teaching practice.

CHAPTER 4--RESEARCH FINDINGS

A Shift in the Research Question

The change from the fourth grade classroom in which I developed my research question to a first grade classroom where I implemented my research study had an undeniable effect on the outcome of my action research project. My research question *How does the facilitation of roles during groupwork encourage participation and attend to status differences among students?* began to recede from the spotlight of my inquiry as I began gathering data from surveys, interviews, journaling, and video footage. My priority became answering the question *How can one best facilitate roles during groupwork with first graders?* I realized before I could focus on equitable participation and attempt to address issues of student status, I had to help students practice their Monster Roles so that I may later observe participation in groups and gauge student status. I was disheartened to find it was very challenging to successfully scaffold instruction to support my students as they attempted to implement the Monster Roles I had created in the 15 weeks I completed my research. I did not feel my former research question was irrelevant. However, I did believe that in order to answer the question, my study would require much more than the ten weeks I had with my first graders.

While analyzing my data, my questions and thoughts turned into categorized ideas. These ideas yielded themes, which eventually developed into findings for my research. The themes that preceded my findings are explored below.

Themes in the Research Findings

As I analyzed my data, three salient findings emerged, which included a) student status and interactions between students influenced the productivity of Monster Groups; b) implementing roles and groupwork norms required much scaffolding, modeling, and practice for students; and c) time was an essential component for the successful practice of groupwork in the classroom. I found that I was challenged to support my first grade students to use the roles in a way that facilitated equitable groupwork. This was due, in part, to the way I implemented the roles with my students. Although various factors influenced this realization, I found a lack of time during which students were able to practice the implementation of Monster Roles to be at the heart of the matter. These three findings are inextricably linked to the difficulty my first graders and I experienced when the children were asked to work autonomously in their Monster Groups without frequent teacher assistance. In the following section, I review these findings.

Status Influences on Students' Understanding of Roles

At the close of the 2014 school year, I was moved from the fourth grade classroom to a first grade classroom. I could no longer be in the fourth grade classroom in which I did my student practicum because the teacher found employment in another school district. Having used the fourth grade as a foundation

for my literature review, cultivation of my research question, and planned implementation of my data collection methods, I was apprehensive to conduct the same action research project with 1st graders after planning to work with 4th graders. It did not take the full 15 weeks I spent conducting my research to come to the conclusion that asking first graders to work in groups independent of much teacher guidance required different planning and scaffolding than that for fourth graders.

I found across my data sources that students had varying preferences for groupwork. These patterns were linked to students' status and interactions between students. In the surveys collected in September and November, I found students had a slight preference for working with a partner or alone than in groups. The interviews I conducted helped me to better understand this partiality. Gloria told me during the November interview that she enjoyed working alone because sometimes her classmates were distracting and other times she liked working with a partner, but only "sometimes". She did not like participating in group activities because "there were times when [my peers] were talking too much and I couldn't concentrate." Another student, Nicole, explained that she did like Monster Groups, especially the Tool Monster, "Cause you get to go up there do stuff like get the tools." However, when I asked her how she felt when she was a Monster that was not assigned a special job such as being called to a huddle or gathering materials for the group, she responded that she felt sad. The survey, interview, and video data suggested that most students did not like Monster Groups because of the perceived unfairness of the different Monster Role jobs. Some students did enjoy Monster Groups because of the special

treatment they sometimes enjoyed when assigned a particular Monster. Featherstone et al. (2011) state that “The roles are not supposed to bestow unequal status. However, elementary school students tend to covet particular duties, especially collecting materials and calling over the teacher” (p. 45). The data I collected suggested a student’s affinity for groupwork was due to the fact that they enjoyed special jobs rather than learning how to collaborate with their peers. Because there were infrequent instances in which the first graders experienced equitable groupwork practices, collaboration, and cooperation, most students expressed their preference to work alone or with a partner during mathematics instruction.

Given the students’ differences in opinion regarding preferences for mathematics instruction, I decided to ask students for suggestions of how I could improve Monster Groups. Upon interviewing Clementine, I found that her solution for conflicts in Monster Groups was to move disruptive members to another group.

MK: Ok. Is there a way that I could make the monster groups better?

C: I know if we could.

MK: How could I make them better? I’d love some advice.

C: Hmm. You could like move Jos... ‘Cause Josi... Actually there was... Oh yah! Fighting... That is one thing I don’t like about Josiah and, uh... Mabel! There we go!

MK: Fighting is something you don’t like about working in monster groups with Josiah and Mabel?

C: Yah.

MK: So do you think... is there a way to fix that?

C: I think you could by changing Josiah and Mabel to a different table.

MK: So you think I should plan the groups?

C: Yah. ‘Cause those two are fighting.

MK: Yah. I shouldn’t just have random people together?

C: Yah. ‘Cause... You should move Josiah and Mabel to a different table and switch two other kids to this table...

MK: Ok.

C: To the table I work at.

(MK = Miss Kelly, C = Clementine)

The data in this excerpt reveals that my students were not yet prepared to work in heterogeneously mixed groups of the size suggested by Featherstone et al. (2011) and Cohen (1994). Instead of receiving the scaffolding necessary to ease the transition from independent to partner to groupwork, students were expected to learn to work together in their Monster Groups after brief modeling. The goal of lessening status issues in the classroom during mathematics instruction was not met. There was little difference in their development of collaborative engagement observed in the video and survey data. It is important to recognize more time would certainly have provided students with the means to develop collaborative and cooperative groupwork practices.

One of the essential structures I implemented was randomized groups. I did not place students in ability-based groups but instead chose groups using popsicle sticks with students' names written on them. Cohen (1994) supports the use of heterogeneously mixed groups in multilingual, multicultural, mixed-ability classrooms because:

...There are such differences in what each child will need to understand... conventional methods of ability grouping do not really simplify the situation. If teachers group children by language proficiency (as has been recommended by the federal government), what do they do with the academic differences? And if they group by

academic ability, how can they be sure that everyone understands the languages of instruction? (p. 147)

The use of randomly assigned groups can greatly benefit students who vary on the linguistic and academic spectra. However, for students to benefit from mixed-ability grouping they need to have sufficient time for modeling, scaffolding, and practice.

The data provided by video of students working together demonstrated that randomly assigned groups were not necessarily appropriate for all students especially given the short time frame for this action research project. For example, I randomly placed Lazarillo and Cecilia in a group together during one math activity. Both of these students had high social and academic in the classroom. Because of their high status, both students attempted to dominate the groupwork by directing their peers towards certain tasks. Neither of the students wanted to be told what to do by the other which resulted in a conflict. After my meetings with the group and attempts to diffuse tension, I decided because of a lack of time it would be easier to simply separate the two and diverge from my randomly assigned Monster Groups. Before the change, Lazarillo had lost his temper and was shutting down, ignoring adults and students alike who attempted to talk with him. Cecilia was indignant and unresponsive to my request she find a way to work cooperatively with Lazarillo. After I made the group changes, both Lazarillo and Cecilia benefited from this adjustment, evident in their harmonious cooperation with their new

groups. At the time, I decided that moving these students to a new group was the best solution given the time limitations for the activity.

The surveys, interviews, and video data supports the first finding of my action research project which is that student status and interactions between students affected their ability to harmoniously work together in Monster Groups. The conflict experienced by Cecilia and Lazarillo in their Monster Group led me to make the decision to separate the students, placing Cecilia in a new group and moving a student from that group to Lazarillo's group. As Clementine commented in her interview, some students had a very difficult time putting aside their differences during groupwork. Gloria declared it difficult to work in groups because of the level of noise caused by disruptive group members. This evidence provided triangulated data which supported my first finding. Adequate scaffolding, modeling, and practice of groupwork norms and roles combined with sufficient time for practice were necessary to attend to student status inequities.

Implication of the Influence of Status on Students' Understanding of Roles

The implication of this finding is that given the age of my students, it was essential that I take both status and social interactions between students into account before having grouped students. Patience on my part was a fundamental requirement of this study. I could have better supported my students if I had demonstrated a more patient transition from individual work to work with a partner to groupwork. Using this succession of work practices, I

could have first concentrated on implementing the three norms of showing respect, making good decisions, and solving problems. After ensuring most students understood the norms, I could have incorporated the use of two of the four roles with partnered students and later in Monster Groups.

Wood (2007) writes that industrious six year olds engage in cooperative play, enjoy the process more than the product, and can be ready to take on individual or group responsibility. On the other hand, seven year olds are at a stage of development in which they prefer to take fewer risks and avoid making mistakes, enjoy structure, prefer working with a partner or by themselves, and prefer laboring slowly. Such considerations must be made in the future when my students of different levels of maturity and ability are asked to work together. With my first graders, jumping from individual work to groupwork was too much responsibility and autonomy too soon. As stated earlier, scaffolding instruction so students begin working with norms individually, then in pairs, and finally in small groups would have benefitted my students greatly. The progression would have created a more solid foundation upon which they could have built a repertoire of skills, strategies, and methods for collaborative problem-solving. When I use this method in my future teaching practice, I will be sure my students slowly practice and acquire activities with partners, then small groups, and finally in Monster Groups.

Implementing Roles and Norms with Scaffolding, Modeling, and Practice

It was obvious that much additional scaffolding was needed as I began reviewing the video footage of Monster Groups in action during data analysis. In the video, I paid special attention to what happened after giving each student one of the four Monster Roles. After walking away from a group to continue dispersing role cards to other students, I saw students jubilantly celebrating the assignment of a desirable monster (Tool Monster or Fair Monster) and wince upon receiving an undesirable monster (Question Monster or Time Monster). In one video, a student can be heard saying “Yay! Fair Monster!” while another two students can be seen beaming upon receiving the Question and Tool Monster Roles. A different student grimaced when they were given the Time Monster.

The positive, neutral, or negative student reactions prompted me to inquire about which students preferred which Monster Roles and why. I found many students considered the Fair Monster to be synonymous with the Monster in charge. During week 2, Emilio shouted, “Hey! That’s not fair!” when his group became confused with turn-taking order. He attempted to resolve the issues after declaring in his own words that as Fair Monster, he was entitled to choose who goes next. Other times, I did observe students successfully finding ways of solving problems without bossing their peers about. During week 7, Romeo asked, “Whose turn is it?” When two of her peers claimed it was their turn, she asked them to play rock-paper-scissors to determine who was to go next. The other two students obliged and quickly began the activity again after one student won with “rock”. The following day, rock-paper-

scissors had become the go-to method for students when there were disputes about whose turn it was. I observed Abel asking his peers to play rock-paper-scissors instead of dictating whose turn it was next like he had before. However, not all Fair Monsters caught on to the meaning of their role.

During groupwork, I observed video of Lazarillo continuing to boss his group around, telling them what to do or what not to do. In the footage I ask this student what his role entailed. His response made it clear that he understood the Fair Monster to be the boss of the group. Sensing prevalent Monster status issues, I was prompted to talk about this misconception during our wrap-up reflection on the carpet. Featherstone et al. (2011) warns “...roles with unequal status may in the long run reinforce your classroom’s status issues” (p. 45). She then suggests the students in one’s classroom should determine the characteristics of the roles employed during groupwork. All roles should be regarded as important by every student. In order to have made this a reality during the implementation of groupwork, students should have used roles that fit their classroom context. They needed sufficient scaffolding, modeling, and practice of these customized roles. After revisiting Featherstone et al.’s advice for authentic collaboration and equity in the math classroom, I reflected a great deal on which Monsters had high status in my classroom.

Tool Monster was one of the most coveted role assignments of the four Monster Roles. It didn’t take long for me to realize that this was because Tool Monster regularly had a consistent, predictable, and active role in groupwork. During almost every mathematics activity this monster was called to the front of the class to

receive the resources for a given activity as well as careful instructions to relay to the other Monsters before beginning a task. During the second interviews, Student 10 said she liked Tool Monster best “...because we get to pass out the toys, I mean not the toys, the tools!” Student 8 said, “...because, um, it gets to go up and grab the tools and tell everyone how to respect the tools.” Most students understood that Tool Monster’s job was to ensure students were taking care of the tools and using them as described by the teacher. The results of the student surveys reflected that most students enjoyed working with manipulatives, supporting the popularity of the Tool Monster who distributed and maintained manipulatives used during groupwork.

Time Monster was one of two Monster Roles the assignment of which did not receive much enthusiasm from students. I attributed this lack of enthusiasm to the fact that Time Monster had inconsistent involvement with their group members. For 1/3 of the activities that necessitated Monster Roles, I called the Time Monsters to the front of the class so that I could give them a warning of how much time remained for the activity before cleanup. This message, however important, was met by disappointed faces, as the Time Monster relayed the information I had shared with them to their peers. Upon reflection, I am not surprised that students were not enthusiastic to receive the task of cautioning their peers it was nearing time to tidy up which I delegated to the Time Monster. Once relayed to their group of Monsters, this message was seldom met with exclamations of *hurray!* or *yes!* Instead, students sometimes scowled or sighed at the prospect of cleaning up their workspace. No student wished to be the bearer of such tidings.

During my second interview with Student 7, I was told she liked Time Monster least “porque a veces es el último,” *because sometimes he was the last one*. In order to expedite turn-taking, I gave students an order in which to work on an activity instead of asking them to decide for themselves who would begin an activity and which monsters would go next. I did not give enough thought to rotating which Monsters went first. Mateo observed that more than once, Time Monster was designated to go last during activities that required turn-taking. This same issue led to Lazarillo to completely disengage from a task, ignore his peers, and pout with his arms crossed and brow furrowed. When I asked him to talk with me about what he was feeling Lazarillo took a deep breath and said, “It’s because last time Fair Monster got to go first!” I asked him if because he was Fair Monster this time and he didn’t get to go first but Question Monster was told to go first, he was upset. He affirmed this to be true and I apologized for not having better explained that the Monster that goes first changes each day.

Question Monster was a monster whose assignment some students feared. When introducing Monster Roles in the beginning stages of my research, I told students that the Question Monster would help answer questions posed by their peers. Students were told that if no one in the Monster Group could answer a peer’s question, only the Question Monster could approach the teacher with the group’s questions. I wanted students to see each other as resources that could potentially answer their own questions. This was also a practical request on my part as I was short on time and wished to spend as much time observing students during

groupwork, and less time answering questions the students' peers could possible answer. Although I felt I had explained this clearly, I was surprised to find many students interpreted the Question Monster's role to mean they were the only monster that could answer their peer's questions. For example, with Jordi I found the reason he shied from asking questions was because he misinterpreted the role of Question Monster:

MK: Y hay un monstruo que no te gusta ser?

Jordi: El cuestión monster.

MK: Por qué?

Jordi: Es porque el grupo te hace un montón de preguntas.

MK: Es porque el grupo tiene un montón de preguntas? Ok.

Jordi: Es por eso.

MK: Son buenas respuestas. A ver, te gusta trabajar con la maestra cuando estás haciendo la matemática? Sí? (S9 asiente) Seguro?

Jordi: Mhmm.

MK: Sí, ok, y por qué?

Jordi: Porque a veces es que no sabes algo...

MK: No sabes algo y la maestra sí lo sabe? Ok y si tú pudieras elegir, te gustaría hacer la matemática sólo, con pareja, en grupo, con toda la clase o con la maestra? Qué te parece?

Jordi: Pareja.

MK: Con pareja, es lo que más prefieres tú? Ok. A ti te gusta preguntar preguntas. (S9 indica no con la cabeza) Por qué no?

Jordi: Porque luego se enojan a veces mis padres.

MK: Ah hah! Tus padres se enojan? Pero cuando estás aquí en la clase cuando estamos haciendo la matemática te gusta preguntar preguntas? (S9 asiente)

Porqué?

Jordi: Mis compañeros a veces saben cosas.

(MK = Miss Kelly)

MK: Is there a monster role you do not like?

Jordi: The Question Monster.

MK: Why?

Jordi: Because you get a ton of questions.

MK: It's because your group asks you a ton of questions? Ok.

Jordi: That's why.

MK: These are great answers. Let's see, do you like to work with the teacher when you do math? Yah? (S9 nods) Are you sure?

Jordi: Mhmm.

MK: Yes, ok, why?

Jordi: Because sometimes you don't know something...

MK: You don't know something but the teacher does? Ok and if you could choose, would you like to do math by yourself, with a partner, in a group, with the entire class or with the teacher? What do you think?

Jordi: Partner.

MK: With a partner, that is what you prefer? Ok. You like to ask questions. (S9 shakes his head) Why not?

Jordi: Because sometimes my parents become angry.

MK: Ah hah! Your parents get angry? But when you're here in class doing math, do you like to ask questions? (S9 nods) Why?

Jordi: Sometimes my buddies know things.

(MK = Miss Kelly)

I could have better supported my students' understanding of the value of asking questions by incorporating asking questions into minilessons interspersed with other content areas. I could have used question frames prompting students to formulate questions communicating their needs, curiosities, and confusion. These question frames would have been useful additions to the Monster Roles cards. Instead of seeing questions as intimidating or daunting, students could view them as puzzles to be solved and our demonstration of knowing what we don't know yet.

This finding represented themes that are related to scaffolding, modeling, and practicing Monster Roles and group norms for students. I found students had a strong affinity for some Monsters and a dislike for others. Fair and Tool Monsters

were overwhelmingly preferred over Time and Question Monsters. The dialogue I had with Paola during our November interview demonstrates the students' disinterest in some of the Monsters.

MK: ...Y cuál es el monstruo que menos te gusta?

P: Time monster.

MK: Time monster, por qué?

P: Porque a veces es el último.

MK: Porque es el último... Por ejemplo si están tocando turnos para hacer un juego, de vez en cuando Time monster es el último y por eso no quieres ser Time monster? (P shakes head) No? Ok.

(MK = Miss Kelly, P = Paola)

MK: Which is the Monster you like the least?

P: Time monster.

MK: Time monster, why?

P: Because sometimes it's the last one.

MK: Because it goes last... For example, if the Monsters were taking turns playing a game, sometimes Time Monster goes last and that is why you don't like to be Time Monster? (P shakes head) No? Ok.

(MK = Miss Kelly, P = Paola)

The fact that Paola does not wish to be Time Monster because there is a pattern of Time Monster going last when taking turns demonstrates the Monster Roles were not explained well enough for students. Each Monster Role was designed to carry equal weight during groupwork and have equitable responsibilities contributing to a collaborative, cooperative work environment. Both my failure to communicate each Monsters' importance in the Monster Groups as well the need to take turns fairly made this experience less enjoyable for students like Paola.

I noticed in the video footage of students working together in their Monster Groups that many students equated Fair Monster with the boss of the group. During

one activity, Lazarillo says, “No! That is not how you do it. It is like this... I am the Fair Monster. You have to listen to me.” I did not sufficiently prompt my students with modeling how Fair Monster acts and what they sound like in different situations. Lazarillo determined Fair Monster to be the keeper of the justice, which a 7 year old may interpret as being the boss.

Status was a factor in the level of success a particular Monster Group experienced during groupwork. In one video of students working together, I found that Lazarillo had been telling his peer what to do. His peer, the Time Monster, did not agree with Lazarillo, the Fair Monster. Enzy, the Tool Monster, usually was at odds with Lazarillo but she decided to take his side and give Mateo grief. Mateo repeated his argument in the face of two academic adversaries while the fourth student, the Question Monster did not become involved. After some moments passed, Mateo sat in his seat, indignant, and surrendered his head to his arms folded atop the table. He remained this way for well over a minute despite the calls from the Question Monster for the Time Monster to participate. Both Lazarillo and Enzy, two of the 10 bilingual students in class who had high social and academic status, had a status advantage over Mateo. In most situations Mateo was headstrong, confident, creative, and obliging. In the video data he was not himself because of the balance of status in the group dynamic. With better organized and more frequent practice this sort of conflict could be resolved more quickly.

Implications of Scaffolding, Modeling, and Practice for Students

This understanding prompted me to think about the best way I could have supported my students and may have scaffolded instruction to have prepared them to work effectively, efficiently, and harmoniously in their Monster Groups. Zull (2002) describes his model of the learning cycle (including a concrete experience, reflective observation, hypothesizing, and active testing) as a requirement of authentic learning. In layman's terms, practice makes perfect. Debbie Diller (2011) writes "...the best way to ensure student independence is to have modeled well... Simply showing something once isn't enough for most learners, even adults..." (p. 14).

The implications of these findings, especially given the young age of my students, is that in the future I should scaffold instruction to build on my students' understanding of working well with one another and of the classroom norms in our Monster Groups. I needed to have frequently modeled what employing our Monster Roles would have looked and sounded like. For my students with diverse ways of learning, it would have been best to have modeled and asked them to role play poor and admirable Monster behavior for the entire class. Both poorly and well modeled behavior could have been discussed between students, helping them engage in Zull's (2002) learning cycle. In my future practice, I plan on using a *what it looks like & what it sounds like* T-chart (see Figure 1). This chart would help students engage in conversations about optimal behaviors while working in Monster Groups. Their brainstorming would lead to a group discussion during which students would next help to concentrate their ideas into norms for our work together which I would add to

our class T-chart. The T-chart could accommodate new ideas as they are developed during the course of the year.

Another implication for my future teaching practice which was informally mentioned before is that it would be helpful for the Monster Cards to have prompts written on the back. These prompts would have assisted my students in remembering their Monster's responsibilities, providing ideas of how to linguistically and socially interact with peers, as well as acting as a language support for emerging readers, ELLs, and other students who benefit from extra linguistic cues.

Limited Time Implied Limited Implementation

My research experienced a number of unfortunate limitations. Time was a significant limitation as I simultaneously conducted my action research project while student teaching as well as completing the edTPA (Student Teacher Performance Assessment). As I attempted to focus my attention to these three separate projects while giving my students the proper support, scaffolding, care, and compassion they deserved, my action research project suffered from lack of diligent and thorough study. The most salient ways in which too little time affected my research was that I did not design many truly groupworthy tasks nor was I able to properly model and practice groupwork roles and expectations for my students. This led to math activities, not groupworthy tasks, being conducted in the student Monster Groups. Without groupworthy tasks, the facilitation of roles was not authentic. Without the proper scaffolding of expectations for students working in Monster Groups, I found myself bouncing from one group to the next, attempting to ameliorate the first

graders' frustrations with their group members as well as remind them of the purpose of their Monster Roles. A lack of sufficient time exacerbated this frustration.

Both the creation and implementation of true groupworthy tasks require much time to be successful. Because of a lack of time, I did not give the preparation of groupworthy tasks the attention they deserved. I was able to clearly see how modeling and scaffolding was lacking in my instruction from the data collected from video footage. A groupworthy task is one that no individual can complete on their own. Within a group working on a true groupworthy task, each student should be the resource of another's. Featherstone et al. (2011) suggested that an educator consider many aspects of a task to ensure it is groupworthy. Will every student be mathematically challenged? What ideas do I wish for my students to focus upon and how might these ideas support the learning target? Does the task have more than one starting point, allowing more students to become engaged with flexible ways to begin the task? What decisions will students likely make individually or collectively? Can the work be easily divided so each member performs separate parts of the task or must all students participate together to complete the task? (p. 110-11). Considering these questions would have provided me better foresight before designing activities for students to complete with their peers during the time in which this action research project was implemented.

After reviewing the filmed footage of both my explanation of groupwork tasks and expectations for performing Monster Roles with students, I quickly realized that there was an integral component missing from the implementation of my

research: genuinely groupworthy tasks. Many of the tasks I created for groupwork were not, in fact, groupworthy. I attribute the absence of such tasks to the limited timeframe I had for my action research project. Also, I made the assumption it would be easier for students to work on simpler, less complex tasks before diving into more dynamic groupworthy tasks. I see now that it was ineffective to ask students to practice their roles with tasks that would not necessitate cooperation and collaboration on the part of every Monster. Instead of thinking of groupworthy tasks as being too complicated for my students and causing confusion about the roles, these tasks could have encouraged students to see the value in their peers' Monster Roles. Using groupworthy tasks, I now see, is a fundamental part of equitable groupwork. They should have been implemented from the very beginning.

In order to design groupworthy tasks, I should have carefully followed the advice of Lotan (2003) who says groupworthy tasks have five important facets including being open-ended and complex, possess multiple entry points and the means to demonstrate different kinds of competence, the learning targets are enriching for students, positive interdependence and accountability are practiced, as well as the presence of a rubric to help students understand expectations. An example of a groupworthy task as found in *Smarter Together!* (2011) includes having one student place a pattern block on the carpet before another student in the group, then another. The students create a pattern together and then work in turn to continue the pattern. The pattern can then be recorded and colored by students (p. 112). Another possible activity is Mystery Numbers in which students use counters to find missing

numbers in a tin cup (p. 114). They are also asked to take turns and to create a visual representation of their participation in the activity. Activities can be adjusted to fit the learning target's need as well as to differentiate for students. These strategies are only valuable if students are given sufficient time during which they can practice these activities.

Groupworthy tasks would have improved equitable access for students to the content of math lessons because of their inclusive nature. Because no task should be able to be completed on a student's own, groupworthy tasks by nature require collaboration and cooperation of group members. The intention of the Monster Roles and groupwork norms was a good place to begin preparing students for groupwork, but without groupworthy tasks the benefits were unsubstantial. Considering the academic, social-emotional, and linguistic spectrum upon which my students found themselves, the differentiation inherent in groupworthy tasks had much potential in my classroom. This potential could have been realized if my students had more than a mere ten weeks to practice working together during the implementation of groupworthy tasks.

Beyond my creation of bonafide groupworthy tasks, students must have been able to fulfill the Monster Roles they were randomly assigned. Had the class had the entire academic year to practice Monster Roles and groupworthy tasks, I believe students would have been able to reach a high level of autonomy with their peers in each Monster Group. Should the students have demonstrated their ability to use one another as resources, follow the three classroom norms (make good

decisions, show respect, solve the problem), and fulfill their practiced Monster Roles, they would have proven that the inhibiting effects of status seem to melt away with this equitable mathematics practice. I am certain my first grade students could have used one another as resources within their groupworthy tasks if they had ample time to rehearse what this prescribed resourcefulness looked like during Monster Group activities.

As explained above in the Implementing Roles and Norms with Scaffolding, Modeling, and Practice section, status interrupts groupwork because students can easily take sides and engage in conflicts with their peers. The conflict can be the result of a lack of patience, communication, and successfully practicing the Monster Roles. During one lesson in which I videotaped one Monster Group working on an activity, I observed Annalise, a student with high social status, convince the others to do the activity a certain way. Annalise's peers had the right idea but she persuaded them to proceed with the activity her way which did not follow directions. In the video, the girls in the group looked at one another, determining whether or not to listen to Annalise. One shrugged her shoulders and another said, "Ok. We can do it like that." It wasn't long before the Monster Group got stuck and I came by, asking students what their group was doing. I helped them get back on track. After I walked to another group, one of the Monsters said, "We told you that wasn't the right way!" to Annalise. She acknowledged her peer's comment but appeared unperturbed and began working on the task. Had Annalise not held the high level of social and academic status she had, I do not think the other members of her group would have

listened to her with as much confidence as they did. Softening the inhibitory affect of student social and academic status within the Monster Groups requires much practice, and consequently, time.

After introducing an activity for students, it would have been valuable to have role-played what each Monster Role would look like during this activity. By showing students a particular situation in which there was conflict and asking them to help me implement my Monster Role as necessitated by the situation, students would have been better prepared to practice such responsibilities as they occurred in their groups. Based on my observations in the classroom, the students seemed to distill the information I shared with them regarding roles and responsibilities into their own brief interpretations: *The Fair Monster tells the others what they can or cannot do. The Time Monster sometimes goes to the front of the room. The Tool Monster makes sure everyone respects the tools. Question Monster has to answer the group's questions.* In the video footage, evidence of these misconceptions was plentiful. Students especially supplied the homogenized opinion that Fair Monster may boss others about. With sufficient time for modeling and review of these roles, I believe first graders possess the ability to participate equitably during groupworthy tasks.

When reviewing the Survey Data (Appendix C: Survey 1 & 2 Responses), I saw that little changes appeared from the September and November survey data. The quantity of students indicating that they enjoy groupwork increased as did the indication that students enjoyed working by themselves. The number of students who stated they enjoyed the process of learning new things also increased. The number of

students who provided homogenous answers, or set of responses which were all the same, on the surveys was very low. These responses may have been the result of two more students who had just arrived from Guatemala to our classroom. These students had not acquired much English, not to mention Spanish, yet. When faced with a survey providing three different faces to color, these students were content to color in all the smiling faces. Given more time, I feel I would have been able to better scaffold, model, and practice math activities and practices with my ELLs in the classroom.

Beyond the new students' responses to the surveys, I found the meager changes from September to November survey data trends slightly puzzling. I thought after our hard work together in Monster Groups surely students would overwhelmingly indicate their favor for groupwork. Hadn't extrinsic motivation been imbedded in the implications of their working together? In the end, I can see that limited time and inefficient scaffolding left students scant evidence the Monster Groups were changing how they felt about math and learning in general.

Insufficient time also affected the use of a huddle during groupwork activities. Often huddles during groupwork activities was inconsistent and poorly scaffolded. This method of engaging students had potential to be useful in supporting student status during groupwork activities. Although I could tell the selected Monsters were thrilled to return to their groups with important information for the activity, the act of selecting one out of four group members may have caused jealous feelings from the other three group members. Also, I was not consistent nor equitable

about which monster I chose for the huddle. This prompted students to voice their frustration and say “I never get picked for huddle!” or “Why does she always tell the Time Monsters to go?” This frustration shared by students was valuable for my practice of implementing Monster Groupwork roles and norms. If more time had been allowed for this action research project, I feel students would have benefitted from a more practice with equitable distribution of responsibility of tasks and groupwork norms.

My intention for this strategy was an attempt to raise the status of a particular Monster, or student. I noticed from the evidence in student interviews, surveys, and video of Monster Groups that most students found the Time and Question Monsters to be unimportant. Essentially, students found the Tool and Fair Monsters to have higher status than the Time and Question Monsters. Though I tried to ask each of the four Monsters to come to a huddle during the course of this action research project, I often asked the Time or Question Monster to come to the huddle more frequently. This was my attempt to raise the status of these particular Monsters. The use of huddles during my research has provoked me to think more carefully about the implications of choosing a particular direction or set of instructions to ask select Monsters to deliver to their group members. I now know the implications of choosing one Monster over another regarding the effect on Monster and student status.

After analyzing the video, survey, journal, and interview data I came to the conclusion that limited time absolutely restrained the productivity of my students

during this action research project. The unfortunate repercussions of limited time was one of the most salient findings of my action research project. Focusing upon the evidence provided by interviews with students, surveys, video footage of groupwork, as well as the entries in my research journal I was able to conclude that time is indeed invaluable in the classroom. Time is especially precious when an educator is implementing new practices as I was. This action research project has provided me with invaluable experiences, observations, and implications for my future teaching practice.

Implications of Limited Time

Watching the video footage of the Monster Groups in action showed me that the end of the activities were often rushed, cut short, and disorganized. The inadequate time we spent as a group closing activities impeded students from having authentic reflection about how their groups did well and how they could be improved during the next lesson. In one video, I was reminded by another adult in the room that it was almost time for lunch. This comment implied that in the next few minutes students needed to finish their work, tidy up, wash their hands, grab their jackets, line up, and walk to the cafeteria. Because the minutes until lunch were scant, I neglected to lead the students in a closing meeting. Instead we hurried to prepare ourselves for lunchtime.

Upon finishing the collection of data for the action research project, I realized that I did not provide much closure for the students nor myself with regard to the project in its entirety. Because the loose ends were left untied and the children

were not guided through a process of ultimate reflection about the Monster Roles, I feel like the lack of time devoted to these important processes left students consciously or subconsciously unmotivated by groupwork. In one November interview, I asked Matilda if she enjoyed the Monster Groups. She responded with an unconvincing “Sí.” When I asked her if she would miss them when this project were over she simply shrugged with indifference. Beyond the excitement of being assigned a coveted Monster Role, most students were nonchalant when engaged in Monster Groups. I attribute this to not having enough time to properly practice and appreciate the Time, Fair, Question, and Tool Monsters.

Surveys indicated that there was not enough time for students to demonstrate a change in their dispositions toward mathematics and learning in general. Had students benefitted from the Monster Groups as I had anticipated (raised levels of self-efficacy, intrinsic motivation, cooperation, collaboration, and homogenized levels of student status) I would have thought students had had enough time to demonstrate effects of groupwork. Instead the little change in their attitudes toward groupwork, helping one another, and working alone supported the observation that students were not benefitting from having labored in Monster Groups. Surveys conducted and analyzed beyond the 15 weeks of this project’s duration might have shown gains in self-efficacy as well as motivation and a decrease in fixed-growth theory mentalities.

Fifteen weeks was too little time to introduce, scaffold, model, and practice Monster Roles with my first graders. Although my students did a magnificent job of

trying out a new method for mathematics instruction and activities, I do not believe they benefitted from the potential benefits of this teaching strategy because of a lack of time. In the time students were given to use their Monster Roles they demonstrated their ability to negotiate how to work well with one another, found different methods for equitably taking turns, practiced working with their peers and resolving conflicts, and proved that regardless of their age, they are capable of acquiring new strategies, concepts, and language in a short period of time.

An implication of this finding is that with more time, students would have been provided more modeling of groupworthy activities. This modeling would have enabled them to enact their roles more successfully. In my future teaching practice, I will be sure to use these roles following a more gradual, structured, and thoughtful method of implementation.

Conclusion

I believe using specific roles and norms in groupwork to attend to status disparities in the classroom is a natural and engaging strategy for mathematics instruction. I will use the groupwork model presented by Featherstone et. al. (2011) during math instruction in my future classroom. However, I will be careful to heed the warnings I have included in the findings and implications section of this action research paper. Although facilitating roles during groupwork is an essential part of the framework presented by researchers who study groupwork such as Cohen and Lotan (1994) as well as Featherstone et al. (2011), I will not overlook the importance of student status, modeling and practice, as well as time. Not to be dismayed by the

unanticipated result of my research, I will focus upon what I have learned from this action research. Such findings will be invaluable resources for me as I continue to develop and improve my teaching practice.

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APPENDIX A

Student Survey 1, 2

Name _____

1. I like working with a partner. 
2. I like working in a group. 
3. I like working by myself. 
4. I like when a student helps me. 
5. I like when the teacher helps me. 
6. I like to help others. 
7. I like playing games with math. 
8. I like explaining my thinking. 
9. I like learning new things. 
10. I like using manipulatives. 

APPENDIX B

Activities for Groupwork and Data Collection, Sept. 12 through Dec. 18, 2014

Week	Activities for Groupwork	Data Source for Collection
Week 1	Student introduction to research project	Journal, First Student surveys
Week 2	Explanation of and practice with Monster Roles Teen Numbers Group Bingo	Journal, First Interviews Students 1-10
Week 3	Revisit and practice Monster Roles Number Order Activity (Which number comes before, after?)	Journal
Week 4	Revisit and practice Monster Roles Roll the Dice: Number Sense Activity (Focus on thirteen vs thirty)	Journal, Full-time Student Teaching
Week 5	Revisit and practice Monster Roles Bingo Activity (Teen numbers)	Journal, Full-time Student Teaching, edTPA
Week 6	Revisit and practice Monster Roles Which Number is Greater/Less Than Activity (Using number cards in groups)	Journal, Full-time Student Teaching
Week 7	Revisit and practice Monster Roles Alligator Song and Worksheet (Roll die, take turns writing number value more than/less than rolled value in groups)	Journal
Week 8	Revisit and practice Monster Roles Tens and Ones Practice with Die; Bingo Using Concept of Less Than/More Than	Journal, Video
Week 9	Revisit and practice Monster Roles Measurement with Various Materials,	Journal, Video , Second Interviews Students 1, 3-10
Week 10		
Week 11		Second Student Surveys
Week 12		
Week 13		
Week 14		
Week 15		Collect Last Interview Student 2

APPENDIX C

Survey 1 and 2 Responses    (sad - indifferent - happy)

Statement	Harris September	Harris November	Bejarano September	Bejarano November
I like working with a partner.	0-6-16	4-3-13	4-4-14	2-4-17
I like working in a group.	5-6-11	4-4-12	4-4-14	4-2-17
I like working by myself.	5-10-7	5-4-11	4-1-17	4-2-17
I like when a student helps me.	2-5-15	4-2-14	2-6-14	7-4-13
I like when the teacher helps me.	2-2-18	1-2-17	2-4-16	2-1-20
I like to help others.	4-5-13	2-2-16	3-3-16	4-2-17
I like playing games with math.	1-4-17	4-3-13	2-3-17	1-3-20
I like explaining my thinking.	8-3-11	9-1-16	9-3-10	6-9-8
I like learning new things.	3-4-14	3-1-16	2-1-19	1-2-20
I like using manipulatives.	3-2-17	2-4-14	2-3-17	3-3-17
# of students with all same answers	4	2	4	4

APPENDIX D

September and November Interview Questions

1. What is math? What do you like about math? What do you not like about math?
2. Do you like to work by yourself when you are doing math? Why or why not?
3. Do you like to work with a partner when you are doing math? Why or why not?
4. Do you like to work with a teacher when you are doing math? Why or why not?
5. Do you like to work in a group when you are doing math? Why or why not?
6. Do you like to ask questions? Why or why not?
7. Do you like to explain how you got an answer? Why or why not? Does it help you to learn if you explain an answer? Why or why not?
8. Do you feel nervous sometimes when you do math? Why or why not?
9. Do you feel bored sometimes when you do math? Why or why not?
10. Do you have a good memory from working in Monster Groups? Do you have a bad memory from working in Monster Groups?
11. How could I make the Monster Groups better?
12. Do you think we are born good at some subjects and not others? Do you think we can get better at subjects if we practice and use effort?
13. Are you good at math now? When you grow up will you be good at math?

APPENDIX E

Monster Role Cards

Adapted from characters in Mike Austin's (2014) Monsters Love School.



