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COOPERATIVE LEARNING AND MINDSET WITH YOUNG STUDENTS

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ABSTRACT. Cooperative learning has been an important philosophy of teaching and learning for many years (Johnson & Johnson, 2013). The concepts of cooperative learning are now more important than at probably any other time in education. The skills necessary for the future go beyond the core subjects taught in schools (Wagner, 2008). Skills like communication, critical thinking, problem solving, innovative thinking, creativity, teamwork, collaboration, and negotiating are far more important than are the skills used to memorize facts for tests or learning the basics (Caine & Caine, 2011; Pink, 2006; Wagner, 2008; Zhao, 2013). Additionally, students who succeed in school and in life tend to be those students who can persevere during times of difficulty (Duckworth, 2013; Dweck). We need our future leaders of this world to understand how to get along with other people and solve problems in more effective ways than the use of bombs (Fitzgerald, 2013; Glasses, 2006). Education has to change or our students and our nation will be left behind (Pink, 2006; Wagner, 2008).

This study was developed to determine if first grade students could learn complex social skills and develop positive mindsets. We worked with a class of first grade students for eight weeks introducing three social skills and putting students into cooperative groups to solve complex issues. The results were encouraging and point to the idea that first grade students can grow in the positive mindsets and learn to work cooperatively with their peers. These students give us hope for our future.

Keywords: *cooperative learning, growth mindset, social skills*

ZUSAMMENFASSUNG. Kooperatives Lernen ist seit vielen Jahren eine wichtige Philosophie des Lehrens und Lernens gewesen (Johnson & Johnson, 2013). Die Konzepte des kooperativen Lernens sind jetzt wichtiger als bei wohl jedem anderen Zeitpunkt in der Bildung. Die Fähigkeiten, die für die Zukunft nötig sind, überschreiten die Kernthemen, din in den Schulen gelehrt sind (Wagner, 2008). Fähigkeiten wie Kommunikation, kritisches Denken, Problemlösung,

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innovatives Denken, Kreativität, Gruppenarbeit, Zusammenarbeit und Verhandlung sind weit wichtiger als die Fähigkeiten verwendet, um auswendig Fakten für Tests oder die Grundlagen zu lernen (Caine & Caine, 2011; Pink, 2006; Wagner, 2008; Zhao, 2013). Zusätzlich Studenten, die in der Schule und im Leben erfolgreich sind, sind in der Regel diejenigen, die in Zeiten von Schwierigkeiten beharren können (Duckworth, 2013; Dweck). Wir brauchen, dass unsere zukünftigen Führer dieser Welt verstehen, wie man mit anderen Menschen auskommen sollte und Probleme in einer effektiver Weise als die Verwendung von Bomben lösen (Fitzgerald, 2013; Glasses, 2006). Bildung muss sich ändern oder unsere Schüler und unsere Nation werden zurückgelassen sein (Rosa, 2006; Wagner, 2008). Diese Studie wurde entwickelt, um festzustellen, ob die Erstklässler komplexe soziale Fähigkeiten und positive Mentalitäten entwickeln könnten. Wir arbeiteten mit einer Klasse von Erstklässlern acht Wochen, führten drei soziale Fähigkeiten ein und setzen die Schüler in kooperativen Gruppen um komplexe Probleme zu lösen. Die Ergebnisse waren ermutigend und weisen auf die Idee, dass die Erstklässler in den positiven Mentalitäten wachsen können und lernen, kooperativ mit ihren Kollegen zu arbeiten. Diese Schüler gaben uns Hoffnung für unsere Zukunft.

Schlüsselwörter: *kooperatives Lernen, Wachstum Mentalitäten, soziale Fähigkeiten*

Introduction

As we progress through the 21st century it is becoming much more obvious that our students need to become more proficient in their problem solving skills, their ability to work in teams, their ability to negotiate, and to creatively develop solutions to issues (Johnson, Johnson, & Holubec, 2013; Wagner, 2008). Today perhaps more than at any other point in history we have to develop students who understand how to work with other people (Johnson, Johnson, & Holubec, 2013). Unfortunately it appears that our abilities to work in the realm of human relationships have not kept up with our technical knowledge (Fitzgerald, 2013; Glasser, 2006; Johnson & Johnson, 2013). Many of our best schools ignore most of the skills our students will need in the real world (Wagner, 2008; Zhao, 2012). We are often told that pedagogical philosophies and techniques like cooperative learning are too complex to implement with young students (Popa, 2010). Our observations of classrooms over the years show us that some teachers very effectively incorporate informal and formal cooperative learning on a regular basis. So, we set out in this study to implement cooperative learning with first grade students in order to begin the process of developing developmentally appropriate cooperative learning activities for younger students.

Literature Review

Introduction

Cooperative learning has been used in education for many years and its population has grown and lessened a number of times over the years (Johnson & Johnson, 2013). With the development of concepts about 21st century learning (Wagner, 2008) problem solving, critical thinking, communication, and collaboration have become important aspects for educators. Wagner (2008) explains that schools that do not teach their students are leaving their students behind in their abilities to compete for the best jobs of the 21st century. Pedagogical practices such as Project Based Learning (PBL), Inquiry Based Learning (IBL), Sustainability Education (SEF), Problem Based Learning, Critical Thinking strategies, and other methods of teaching are all based on the concept that students have to work in concert with their peers in to develop and implement the skills of the 21st century (Caine & Caine, 2011). Sousa (2011) also asserts that the latest research on the brain supports these practices as valid in the development of the brains of our students. This research indicates that the brains grows with learning, the more one learns the more one can learn (Caine & Caine, 2011). Johnson & Johnson (2013) have been study cooperative learning for many years and conclude that the research is clear, students who work with their peers cooperatively learn more, remember it longer, and learn more deeply the material with which they work than do students who work independently or competitively. Hattie (2012) has studied hundreds of meta-research studies and has developed effect sizes on achievement for at least 150 strategies used with students (he states that effect sizes above 0.40 are significant for raising student achievement). Hattie has determined that cooperative learning vs. individual learning has an effect size of 0.59 and cooperative learning vs. competitive learning has an effect size of 0.54. In other words student achievement is significantly higher when students work cooperatively than when they work individually or competitively. Johnson and Johnson (2013) also have determined that students who work together cooperatively also gain more effective social skills and psychological strength than do students who work alone or competitively. In his description of the use of Piagetian techniques (effect size of 1.28) Hattie (2012) states, "…cognitive development is a social process promoted by high-quality dialogue among peers supported by teachers" (p. 43). Piaget's (Piaget & Inhelder, 1966) concepts of assimilation and accommodation work more effective in social settings, not in isolation. Vygotsky (1978) developed the concept of the zone of proximal learning in which students learn from their peers who understand more or more deeply concepts upon which they are working. Learning according to Vygotsky (1978) is a social endeavor.

Grit and Mindset

In an interview with Deborah Perkins-Gough in 2013 Angela Duckworth explained the power of what she calls Grit. She explained that there are two pieces to the concept of Grit, "So grit is not just having resilience in the face of failure, but also having deep commitments that you remain loyal to over many years." Her research has found that dedication to getting the job done, a hard work ethic, and resilience in the face of adversity is important for student success. Duckworth explains how non-cognitive traits are at least as important as cognitive ability. She told her interviewer, "Grit predicts success over and beyond talent. When you consider individuals of equal talent, the grittier ones do better." She goes on the say that there is not relationship between Grit and talent. Those people who end up being the most talented at something often start out being not being so talented. Their talents progress with their dedication, hard work, strategic practice, and willingness to sacrifice.

Dweck (2006) describes the differences between what she calls a growth mindset and a fixed mindset. Basically, she explains, a growth mindset is one in which a person believes that her/his intelligence, talents, and personality traits are fixed (unchangeable), while a growth mindset is when a person believes that her/his intelligence, talents, and personality traits can be changed. Dweck writes, "…people have more capacity for life-long learning and brain development then ever thought" (p. 5). She quotes Robert Sternberg, a "guru" of intelligence, as believing the major factor in whether people achieve 'expertise' "is not some prior fixed ability, but purposeful engagement" (p. 5). According to Dweck, people with fixed mindsets feel that they have to prove themselves over and over. They feel that they have to be correct or they are not a smart or talented as they thought. The biggest problems with students with fixed mindsets is that they give up easily, they do not challenge themselves, they do not seek new things to learn, they hide their deficits instead of building them up, and they deceive themselves in their self-assessments because they fear showing weakness, less talent, or less intelligence. Dweck writes, "The passion for stretching yourself and sticking with it, even (or especially) when it's not going well, is the hall mark of a growth mindset" (p. 7). In order for people to determine if they have a growth mindset in terms of intelligence and personality traits, Dweck has develop two sets of yes/no statement:

Intelligence Statements

1. Your intelligence is something very basic about you that you can't change very much.(F)
2. You can learn new things, but you cannot really change how intelligent you are. (F)

3. No matter how much intelligence you have, you can always change it quite a bit. (T)
4. You can always substantially change how intelligent you are. (T)

Personality and Character Statements

1. You are a certain kind of person, and there is not much that can be done to really change that. (F)
2. No matter what kind of person you are, you can always change substantially. (T)
3. You can do things differently, but the important parts of who you are can't really be changed. (F)
4. You can always change basic things about the kind of person you are. (T)

The important message from both Duckworth (2013) and Dweck (2006) is we can all change our Grit levels and Mindsets. We are not stuck where we are presently. Through strategic hard work and dedication we can improve both our Grit and our Mindset. Teachers can teach students to be grittier and to create positive growth mindsets.

Cooperative Learning

There are three basic patterns for students as they work in classrooms: individual work, competitive work, and cooperative work (Johnson, Johnson, & Holubec, 2013). In the world students will need to know and use the skills necessary for all three interaction patterns (Popa, 2008). So, it makes sense to develop a system of teaching and learning that gives students the best of all the patterns (Johnson, Johnson, & Holubec, 2013). The cooperative learning system used in this review was developed by the Johnsons to incorporate all three processes under the umbrella of cooperation. According to the Johnsons students should learn how to work and make decisions independently. They also should understand how to compete and deal with winning and losing in positive ways, keeping their emotions and actions in perspective (e.g. be gracious winners and good losers). Students should also learn how to be positive and contributing members of groups or teams. They need to understand how to be leaders and followers, and they need to learn how to do their parts to make their groups successful.

At this time in history it appears that working together in positive ways is more important than ever (Wagner, 2008). According to Wagner and the Center for 21st Century Learning (p21) one of the four most important skill areas for the 21st century is collaboration. Wagner believes that too many school's today, even some of our best schools, still do not take the skills of collaboration,

communication, problem solving, creativity, and critical thinking seriously enough. Pink (2006) believes that the leaders of the future and the people with the best jobs will be those who understand how to be innovative, creative, and problem solvers who know who to communicate and work with other people. Both Wagner (2008) and Pink (2006) believe that students need to be placed in educational activities in which they can work together on real world problems in deep and engaging ways. They believe that the real curricula are the skills associated with creativity, problem solving, entrepreneurship, leadership, collaborative efforts, and critical thinking. The Greenwich Public Schools (*http://www.greenwichschools.org/page.cfm?p=6697*) have developed ideas in relation to what people call the transdisciplinary curriculum, the curriculum that transcend subjects. In other words the most important skills are the 21st century skills listed above and the school subjects are used as the vehicles to give students access to these skills. In addition to the benefits explained earlier of cooperative learning socially, psychologically, and academically, cooperative learning also is instrumental in the critical thinking, problem solving, collaborative and communication skills necessary for 21st century and beyond learning (Johnson, Johnson, & Holubec, 2013).

In order to accomplish the tasks discussed above the Johnsons (2013) suggest cooperative learning as a major aspect of the teaching and learning process. The Johnsons advise that there are four different kinds of groups used in cooperative learning: base groups, informal groups, formal groups, and academic controversy groups. Base groups are used as long term groups in which students offer their members academic and personal support to each other. A form of base groups in middle schools and high schools are advisories in which a teacher and a small group of students work together for at least a year to support each other. Many high schools maintain these groups for four years. In formal groups are used for short periods of time within the classroom. These groups can last for a minute or up to a class could share pairs, homework check groups, reading groups, study groups, research groups, review groups, etc. The third group is a formal cooperative group that lasts for the length of an assignment. These formal groups could last for a class period or for an entire term if the students are working on a long-term project. The final group is an academic controversy group that usually lasts for up to a week as students research debate, take notes, switch sides, debate again, and then come together to develop a final solution or set of rules for some issue that can be historical, simulated, or for solving a real issue. Groups can be formed in a number of ways (random, stratified random, by interest, by ability, heterogeneously, by student choice, etc.) depending on the task at hand and the needs of the students as determined by the teacher and students (Johnson, Johnson, & Holubec, 2013).

The Johnsons (2013) have developed five basic elements for formal cooperative groups: Positive Interdependence, Individual Accountability and Personal Responsibility, Promotive and Face-to-Face Interactions, Individual and Small Group Skills, and Active Individual and Group Processing. For a formal group to be effective all five elements must be present in the group. When the group is not working effectively then usually one of the basic elements is missing from the process.

Positive Interdependence occurs when every member of the group believes that her/his job is to learn all of the material, accomplish the tasks of the group, do their individual parts, support every member of the group, and believe that together they can accomplish more than they each could individually. Positive interdependence is the key to cooperative groups at any level in school or on the job. Individuals in the highest functioning groups anywhere believe in and support each other (Popa, 2005). We see these kinds of groups in sports on a regular basis and in companies or schools that promote and support cooperation. These groups believe in synergy, the idea that our abilities as a group are greater than the mere sum of our parts. Teachers structure interdependence in different ways (e.g. limited materials that members have to share, individual jobs in the group, a common task, individual tasks to put together for the final task, bonuses for group participation, break up the learning material and members teach each other, etc.). Any process that makes students count on each other will help with Positive Interdependence (Johnson, Johnson, & Holubec, 2013).

Individual Accountability and Personal Responsibility is the second basic element of cooperative learning. Here each individual is responsible for learning the academic material and for completing the assigned individual tasks. Each individual will have to prove they have learned the material (e.g. do the homework, pass the quiz or test, write an exit slip proving what they know, be interviewed by the teacher, be assessed by the other members of the group, self-assess and defend their scores, do a presentation, write an essay, etc.). The goal is that every student learns all of the material and can prove her/his knowledge and/or skills achievement. Each individual student is also accountable for doing her/his part of the tasks to complete the final product for the project or activity. Students have to learn how to positively hold each other accountable for their efforts, as they will need to do in the career fields. The point here is that every individual is responsible for her/himself and for her/his efforts for the group (Johnson, Johnson, & Holubec, 2013).

The third basic element of cooperative learning is Promotive and Face-to-Face Interactions. In this element students must learn how to support each other. Here students employ the Caring Habits discussed earlier so that they support each other in their efforts. Students are required to support, challenge appropriately, assist, encourage, ask for help from, and offer information to each

other. Even when students are working independently on their tasks, they are asked to find material and ideas that they can share with their teammates. Students are also asked to give each other feedback that is honest, specific, helpful, and positive in order to promote the growth and success of each member of their group (Johnson, Johnson, & Holubec, 2013).

Individual and small Group skills compose the four element of cooperative learning. For this element to occur the teacher must teach, allow students to practice, and give students feedback for improvement for specific social skills. There are four groups of skills in this process. The Johnsons have broken these social skills into four categories:

1. **Forming:** The bottom-line skills needed to establish an effective group.
2. **Functioning:** The skills needed to manage the group's activities in completing the task and in maintaining effective working relationships among members.
3. **Formulating:** The skills needed to build deeper-level understanding of the material being studied, stimulate the use of higher quality reasoning strategies, and maximize mastery and retention of the assigned material
4. **Fermenting:** The skills needed to stimulate re-conceptualization of the material being studied, cognitive conflict, the search for more information, and the communication of the rationale behind one's conclusions.

In order to learn these skills the Johnsons suggest a process in which the teacher demonstrates: a. the need for the skill, b. the definition and practical skills needed for the skill, c. Allows for practice and feedback, d. continues the process until students use the skill in an unconsciously competent way (Johnson, Johnson, & Holubec, 2013).

The final basic cooperative learning element is Active Individual and Group Processing. Caine and Caine (2011) believe that active processing is integral to deep learning. The Johnsons (2016) agree. They state,

Students do not learn from experiences that they do not reflect on. If the learning groups are to function better tomorrow than they did today, members must receive feedback, reflect on how the effectiveness of their actions may be improved, and plan how to be even more skillful during the next group session. (p. 4)

Students need to think individually, process within their group, and share their ideas with the entire class, as well as receive feedback from their teacher. Then individuals, the groups, and the class create goals for improvement (Johnson, Johnson, & Holubec, 2013).

Cooperative learning takes a great deal of effort, planning, and feedback to be successful. The goal of preparing our students for the 21st century and beyond though makes it imperative to engage in such a process. Our future is dependent on the skills of our students as they become adults. We cannot afford to allow our students to be prepared for a century gone by. If we do not engage our students in cooperative and collaborative learning they will be left behind.

Methodology

In this study we conducted a series of lessons with the first grade students introducing cooperative learning and the social skills of taking turns, voice levels, and encouragement. We introduced each skill to the students and then we had the students practice the skills so they could reflect on them and gain feedback from the instructors. After students had practiced each of the skills we developed a project based series of activities in which the students learned the basics of storytelling. Students were then placed in groups by the topics the students chose for their story. Each group wrote a story based on their common topic. Students in each of their groups then developed a Big Book by copying their story into the Big Book and then illustrated their books with pictures from the internet and/or pictures drawn by the students.

Setting and Participants

The participants were 30 students in a fist grade classroom in a city in Romania of approximately 200,000 people. The school is within walking distance of the city center and house grades Per K to eighth grade. This school has a reputation as being a good school in the city. There were 19 girls and 11 boys in this study. There are diverse families in the school (Romanian, Iranian, Turkish, Hungarian) and the families have a range of socioeconomic standards.

The classroom teacher was an observer in the study as she allowed two pre-service teachers from the local university along with their university supervisor to conduct the 12 lessons implemented during the study. She also followed up the lessons with opportunities for the students to continue their practice of the social skills.

In addition to the students and teacher there were two pre-service teachers and their university supervisor who conducted the surveys, observations, and lessons during the study. Both of the female pre-service teachers were in their last semester of their program. Their supervisor is a lecturer at the university who regularly supervises pre-service teachers in the field.

Design

Creswell (2003) developed three important questions for designing research:

1. What knowledge claims are being made by the researcher (including a theoretical perspective)?
2. What strategies of inquiry will inform the procedures?
3. What methods of data collection and analysis will be used?

Our perspective in relation to the first question is a constructivist view. We believe, „The goal of research, then, is to rely as much as possible on the participants' views of the situation being studied" (Creswell, p. 8). Our strategies of inquiry were developed from a mixed methods perspective, collecting both quantitative and qualitative data. „In this design, the investigator collects both forms of data at the same time during the study and then integrates the information in the interpretation of the overall results" (Creswell, p. 16). In our study we used both quantitative (survey, inventory) and qualitative (observation and interviews) data collection methods.

The quantitative methods used in this study were a pre and post classroom life survey (Popa, 2008) related to the classroom environment (academic and personal care and support from peers and the teacher; level of general cooperation among the class) and a pre and post mindset inventory (Dweck, 2006). The qualitative methods used in this study were observations of students in their group work (cooperative social skills: taking; mindset behaviors: perseverance, asking for assistance, providing assistance). Pre and post observations were implemented, as well as ongoing observations during the study. The classroom teacher also participated in a post study interview.

Table 1 displays the methods and tools applied during the study.

Table 1. Mixed Methods Design

Quantitative Method	Quantitative Tool	Qualitative Method	Qualitative Tool
Survey	Classroom Life Survey	Student Observations	Pre and Post Observation Protocol
Inventory	Mindset Inventory	Student Observations	Researcher Journal
		Teacher Interview	Interview Protocol

Research Questions

This study was based on two research questions:

1. What effects will the introduction of formal cooperative learning lessons and activities have on the social skills of first grade students when they work in groups?
2. What effects will the introduction of formal cooperative learning lessons and activities have on the mindsets of first grade students as they work together in groups?

The first hypothesis for this study was that if we taught students social skills they would gain better skills for working in groups. The second hypothesis was that if students gained more social skills their mindsets would be more positive when they faced difficult work in their groups. Our fear was that because of the timeframe of this study (8 weeks) students would not have enough time to go through the implementation dip of learning new skills to make enough gains to give us a true picture of where they will be after another term of work.

This study employed a mixed methods design to gather and analyze data. Quantitative data was gathered through the use of a pre and post surveys for the students. More qualitative data was gathered through pre and post study observations using a standard chart for each observation. During the course of the study instructors maintained researcher observations of the students during the nine lessons/activities. Finally, at the completion of the study the classroom was interviewed to gather her observations during the study.

Phases of Inquiry

The following 15 phases of inquiry were applied during this study:

1. Gain administrative consent
2. Gain teacher and student consent
3. Pre student observations
4. Pre student class life survey
5. Pre student mindset inventory
6. Introduce concepts of cooperative learning and social skills
7. Introduce concept of mindset skills
8. Teach and practice social skills and mindset skills
9. Implement final project to implement cooperative social skills and mindset skills
10. Post student observations (cooperative social skills and mindset skills)

11. Post student classroom life survey
12. Post student mindset inventory
13. Teacher interview
14. Data analysis
15. Development of final conclusions and recommendations

The study began with a pre observation of the students. During these observations the two university students and their supervisor divided up the class to observe the students' social skills (taking turns and encouragement) and growth mindset concepts (perseverance, effort, asking for help, helping others). This data gave us a baseline for the students in the classroom. The observation was repeated at the conclusion of the project in order to analyze growth from the beginning to the end of the process.

The three instructors surveyed the students giving them fifteen statements related to cooperative learning to rate on a scale of 1 to 5 (always false to always true). One instructor led the process while the other two people circulated through the class to answer questions or assist students. There were five statements in each of three categories: 1. personal support in learning from peers, 2. personal support in learning from the teacher, 3. cooperation. The statements for personal support in learning from peers were as follows:

1. In this class my peers like to help me to learn.
2. My peers want me to learn well.
3. In this class the other students care how much I learn.
4. In this class my peers like me the way I am.
5. In this class every colleague is my friend.

The personal support in learning from my teacher statements were as follows:

1. My teacher really cares about me.
2. My teacher cares how much I learn.
3. My teacher likes to see the results of my work.
4. My teacher likes to help me to learn.
5. My teacher cares about how I feel.

The cooperation statements were as follows:

1. In this class I like to cooperate with other colleagues.
2. In this class we help each other.
3. In this class we learn more when we work together.
4. In this class learning in cooperative groups is better than learning alone.
5. In this class it is a good that we have students help each other in their learning.

The instructors then gave a mindset inventory to the students (see Appendix A). The inventory consisted of twenty statements about growth and fixed mindsets. There were five statements for each category: fixed ability, growth ability, fixed personality, and growth personality. The students rated each statement on a four point scale from strongly disagree to strongly agree. The inventory results were based on the following scale: 0 – 20: Strong Fixed Mindset; 21 – 33: Fixed mindset; 34 – 44: Growth Mindset; 45 – 60 Strong Growth Mindset.

After completing the pre study observation and surveys, the university pre-service teachers and their supervisor began a series of nine lessons with the students. They implemented two lessons/activities for each of the three social skills: taking turns, voice levels, and encouragement. The process for each of the social skills lessons included helping students to become aware of the social skill; working with students to define each social with the use if a T chart (what does the skill look like and what does the skill sound like); initial practice of the skills; individual and group processing of progress; more practice; individual and group processing. During the practice phases of each skill students were placed in small groups and observed by the classroom teacher and the three people from the university. In addition to the student processing, the three university instructors and the classroom teacher processed in order to adapt for the next lesson.

After the completion of the six lessons working with social skills, the instructors taught the students how to develop and create stories. The students practiced working in groups with the three pieces of a story, beginning, middle, and end. Students practiced creating and telling their stories using pictures and words. Students then brainstormed a list of possible topics for their final task. The class voted on the items until they had chosen six topics: Lego, memories from my childhood, love, princesses, ghosts, and pets. Then students were placed into groups based on their topics. There were seven groups (two groups worked with the topic of pets).

Students then were given the task to develop and then write a story based on their chosen topic. Each student in the group wrote two sentences for the group story. The instructors then edited the sentences with the students, and each student wrote her/his sentences into the Big Book. Each student then either drew or cut put a picture for each of his or her sentences. Then each group created a title for their story and after sharing it with an instructor, wrote the title on the front page of the book. Finally, each author wrote her/his name on the front cover of the book.

At the completion of this process the students were again given a group activity to accomplish and the three instructors observed the students taking notes as they did in the pre study observation. They rated the students in relation to their social skills of taking turns and encouragement and their mindsets by charting their perseverance, effort, asking help, and helping others. Finally students were given the post study survey, which was the same survey used in the pre study process.

During this process the instructors observed the students in their efforts and kept researcher journals for this notes. They analyzed their notes in order to draw conclusions about the progress of the students during the entire study. The classroom teacher was interviewed at the completion of the study to gain her insights for the study.

Results

Cooperative Learning Survey

The cooperative learning survey was divided into three categories with five statements in each category: peer support, teacher support, and general cooperative learning attitudes. Teacher support (4.8) and cooperative attitudes (4.6) had high scores in the pre survey. After working at learning the social skills and completing the complex activities in their formal cooperative groups these scores remained high but were slightly lower on the post survey (teacher support 4.5 and cooperative attitudes 4.3). In the area of peer support the score in the pre survey was 3.9 and in the post survey was 4.1. Again the positive difference was slight. In this class the students have a high level of trust in their teacher and in general want to be cooperative. Their amount of trust that their colleagues will help them rose during study but remains lower than the other two categories.

Mindset Inventory

In the pre inventory for mindsets there were 18 (67%) students who scored in the Fixed Mindset range and 9 (33%) students who scored in the Growth mindset range. There was no student who scored in either the Strong fixed or the Strong Growth Mindset ranges. In the post inventory 11(41%) students scored in the Fixed Mindset range and 16 (59%) students scored in the Growth Mindset range. One of those students scored in the Strong Mindset range. Three students also fell from the Growth Mindset to the Fixed Mindset range. This inventory indicated a 26% overall increase in students in the Growth Mindset range from the beginning to the completion of the study.

Cooperative Skills Pre and Post Observations

Prior to and at the end of the study the three instructors observed the students as they completed grouped tasks. The students were charted as to their display of the social skills of taking turns and of encouraging their peers in their work. In the pre observation the activity had students working in pairs and in the

post observation the students were working in groups of four. This caused a problem in trying to compare the results. When students are working in pairs the complexity of the interactions is much less. Students in pairs tend to either be the speaker or listener. When working in groups of four the communication becomes more complex because the students have to interact with and try to understand three times as many people. In addition the observers' task became more complicated as they observed four students at a time rather than two. In spite of these complications the data proved interesting.

For the area of taking turns there were three items observed: students waiting for their turn, students looking at the speaker, and students making some sort of sign that they would like to speak (e.g. raising a hand). In the pre observation there were 19 observations of student waiting for their turn to speak and no interruptions of the speaker. In the post observations there were 12 observations of students waiting for their turn to speak and 17 times of interrupting another student to speak. In the case of looking at the speaker there were 39 observations of students accomplishing this skill in both the pre and the post observations. In the pre observation there were 16 times when students were observed not looking at the speaker. In the post observations there were no such observations. In terms of students making signs to try to gain a time to speak, in the pre observations there were 33 times students made a sign for attention for a turn. In the post observation there were 10 such instances. In both cases there were no negative attention getting signs used by students. In the pre observations there were 23 more positive observations (91 to 68) for taking turns than in the post observations. In the post observations there were 10 fewer negative behaviors (27 to 17) than in the pre observation in relation to taking turns than in the pre observations.

In the area of encouragement there were also three categories observed: smiles, nods, and saying something positive. In the pre observation there 35 times when students were observed smiling at the speaker; in the post observations there were 50 such observations. In the pre observation there were 18 instances of students making negative faces while another student was talking. In the post observations there were 12 such instances. In terms of student nods to the speaker, there were 10 observations of student nodding in the pre observation and 4 instances in the post observation. In the pre observations one student was observe saying something positive or helpful to the speaker and one student saying something negative. During the post observation there were 5 instances of students saying positive things to the speaker and one observation of a negative comment. There were 13 more instances (59 to 46) of positive observation in the post observations as compared to the pre observations. There were also 3 fewer instances (16 to 19) of negative behaviors in terms of encouragement in the post observations.

In summary, in spite of the more complex nature of the task in the post observation, the students displayed fewer negative social behaviors both in terms of taking turns and in encouraging their peers. There were more positive observations in the pre observation time in terms of taking turns, and there were more positive observations in the post observations in terms of students encouraging one another.

Mindset Skills Pre and Post Observation

For the pre and post observations for Mindsets the instructor observed four categories of a positive mindset: perseverance, effort, asking for help when needed, and offering help to peers. In the pre observation there were 26 instances of visible perseverance and in the post observation there were 20 such instances. In the post observations there was one instance of a student giving up during the process. In terms of effort in the pre observations there were 18 instances of obvious effort and one case of a lack of effort. In the post observations there were 16 cases of visible effort and two instances of negative effort. In the pre observations there were 9 observations of students asking for help and one observation of a student refusing to accept help. In the post observations there were three instances of students asking for help. Four students were observed offering help to a peer in the pre observations and there were 6 students who refused to help a peer. In the post observations 8 students agreed to assist their peers and 2 students refused to give help to a peer. In addition the instructor observed 1 student in the pre observation and 13 students in the post observations who exhibited behaviors that she considered positive in terms of mindset. In terms of negative mindset actions the instructor noted 7 negative mindset behaviors in the pre observation and 3 in the post observation. In summary there were a total of 58 positive mindset visible behaviors by students in the pre observation and 60 such behaviors in the post observation. There were 16 negative mindset behaviors in the pre observation and 8 in the post observation.

Teacher Interview

We interviewed the classroom teacher to gain insights from her perspective. The first question was, *To what degree did you observe any differences in your students in their use of taking turns in your classroom during this study?* She replied that:

In the beginning of the research the students did not use this skill successfully, Gradually, I notice an improvement. They get along by looking at each other. They accept and respect each other in their groups.

The second question was, *To what degree did you observe any differences in your students in their use of encouragement in your classroom during this study?* She answered that:

I noticed that they encourage each other and that they are challenged. The students that had a tendency to not be involved in the lessons are more active even with traditional lessons.

The third question was, *To what degree did you observe any differences in your students in their use their voice levels in their groups in your classroom during this study?* Her response:

This skill needs more work. There are students who talk a very loud, even shout, when they are working in groups. Still I noticed groups that are using a low voice/tone.

The fourth question was, *To what degree have you seen students persevere in their work if they face a difficult task?* She stated:

Unfortunately, I noticed this only once during your work with my students. I liked what I saw. Slowly, but surely they are learning to persevere.

The fifth question was, *What do you see as the benefits of this work with your students?*

I feel that this action helped my students to become closer. They successfully came to know each other better, and they made new friends within the classroom.

We finally asked the teacher if she had any other comments she would like to add. She stated,

This study showed me another approach of teaching that I would like to try.

Instructor Observations

The three instructors also maintained observations throughout this study. They major conclusion from their experience was that they saw progress from the students. One instructor stated, *At the beginning the students would not share materials or ideas with each other. At the end when they were making their big books they were very willing to share and help each other complete their books.* Another instructor said, *Even though it was hard for the student to always keep their voices low, they knew that it was better for everyone when they did.* An instructor said, *It was special to observe the students and hear them encourage each other when they knew we were observing. Even though it was difficult they wanted to learn the skills, and they were proud to show us what they were learning.* One of the instructors stated, *I was so excited to see the students move into the mechanical stage of encouragement. We have talked about the stages of skill development and it was so exciting to see it in action with these students.* Finally, an instructor related, *This is really hard work but it is so cool when you see students grow in front of you. It was amazing to see the progress of the students from the beginning of the study to the end.*

Discussion

The objective of this study was to work with first grade students to see if we could help them to learn social skills necessary to work effectively in groups. We also wanted to see if we could begin to help students to strengthen their positive mindsets. Both of these issues are complex and our study is just the beginning stage of a much larger process. We agree with people like Wagner (2008), Pink (2006), Caine and Caine (2011) that the future success of our students in their post education lives lies in their abilities to problem solve, understand diversity, think critically, communicate effectively, be creative, innovative, and flexible, and to understand how to work with different kinds of people effectively. We also agree with people like Dweck (2006) and Duckworth (2013) that our students need to have the skills to persevere through difficult times and the attitude to face challenges with a positive mindset. These kinds of skills will not be gained by passing standardized tests or sitting rows learning how to spit back to teachers what they have been told. If we really want our students to be independent thinkers, innovators, creative problem solvers, and collaborative adults then we have to work with them in ways that assists them in developing the attitudes and skills needed to accomplish those goals (Zhao, 2012). We have to change what and how we teach if we are going to help our students be prepared for the future (Wagner, 2008). Cooperative learning (Johnson & Johnson, 2013) is a philosophy of teaching that allows teachers and students to learn about and develop the skills necessary to be effective citizens of the future. This study is one small piece of the process but it is important because it does show that young students want to and can begin the work to begin gaining these skills at early ages. First graders can learn to develop positive mindsets and they can learn important cooperative social skills. We are not encouraging this work because it is easy, we are encouraging it because it essential to the future our students and our world.

Limitations

This was small study conducted over a relatively short period of time. The results are interesting and give us some great food for thought. But these results cannot be generalized beyond this study. This study was conducted by people who were not part of the regular classroom of the students. That caused some normal issues of disrupting the normal flow of the day for students when we were present in their classroom. Although the teacher and the students were gracious and wonderful this process would probably have been even more effective if we had been a regular part of the school. We had three people implementing the

study in the class and that is something that most classrooms do not have the ability to do. It would be good to see studies like ours accomplished in schools with the regular number of personnel that work in a classroom.

Recommendations for Further Study

We have become convinced that young people can learn the complex social skills needed for cooperative learning, and we are convinced that we can teach young students Grit and positive mindset skills. More research with young students needs to be developed so that we can learn even more effective ways to help young people gather these skills. We also believe to would be worthwhile to conduct research on the effects of Mindset on teachers and administrators. We also believe that further research on teaching important social skills to young people to develop the most developmentally appropriate techniques to employ with our young students. Finally, we recommend longer term studies to understand the longer term effects and needs for effective cooperative learning in elementary schools.

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