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The Benefits of Collaborative Learning in the Elementary Classroom

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An Action Research Report
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Abstract

This study was designed to see the possible benefits of collaborative learning in an elementary classroom. This investigation was conducted at a charter school with two fourth grade classes. Data collection methods included: a pre and post student attitude survey, individual student and peer evaluation, work completion tracking, and behavior tracking. The results showed a positive effect on student learning. Student attitude reflected in the surveys showed improvement. This also was seen in the amount and quality of work completed throughout the study. Off task behaviors were also lowered. With the continuation of this positive and reflective environment, student work and on task behavior will continue to improve. The recommendation for the next step would be to continue with group roles in collaborative learning and educating students on their importance.

While teaching fourth grade for the past four years a consistent problem has been getting students to work collaboratively in class. Students at this point in their education struggle working with peers. This usually does not happen with students in pairs, but when more students are added to the group the arguing and off task behaviors surface rather quickly. Working in peer groups is a strategy used in every subject in upper elementary.

There are three main problems I notice in collaboration activities. One is the off task behaviors and arguments that stem from minor disagreements, usually over how to complete the work, or who gets to complete each part. The second is student's roles in groups. These are; roles students naturally take on, versus group roles given to them in their work. The third problem is the attitudes students have about collaborative learning from previous experiences. I had to ask myself: To what extent can students' learning about the skills and benefits of collaborative learning in an elementary classroom improve their small-group on-task behavior, task completion rate, and attitudes about small groups?

The benefits of collaborative learning have long since been studied and researched. Two leaders in this area are David and Roger Johnson. Their research shows that cooperative learning improves students' efforts to achieve. They work harder, achieve more, remember material longer, use higher-level reasoning, and develop external and also intrinsic motivation. Students in cooperative learning situations also show increased self-esteem, and confidence in the future. They also may have an increased positive attitude towards school, grades, and their teachers. According to Johnson and Johnson, "Without the cooperation of its members society cannot

survive, and the society of man has survived because the cooperativeness of its members made survival possible" (Johnson and Johnson, page 1, 2012).

Jansen mentions that when a group has at least 3 students working together on a task, it is small group work. This only becomes collaborative work when those students are interdependent on one another. (Jansen, 2012, Page 38).

Buher and Fergeson also discussed the role of the teacher's own attitude influencing student's attitudes towards group work. In the classroom, the atmosphere created by the teacher ended up influencing positively the outcomes of group work. Buher and Fergeson both observed classroom teachers and how their relationships with students and the classroom atmosphere they created had a positive effect of the outcomes of group work. Buher found teachers using team building games such as "shipwreck" helped to illustrate the need for each student to have a part in collaborative learning for the activity to work out well. The teachers would take notes on the students that showed natural leadership as well as the students for which the task created struggles. Those teachers would then use that information to build groups based on these observations (Buher, 2004).

Fernandez discussed the need for meaningful tasks in groups that require collaboration. It is important to make sure that each student has a role and understands the importance of working together to accomplish a task. The main methods of cooperative learning include: Jigsaw, Learning Together, Group Investigation, Finding Out, and the Student Team Learning. There are two characteristics of cooperative learning which the author points out as most important. First is

the social skills needed for cooperation, these must be taught. Second is group self-reflection, to reflect on the cohesiveness of the group and how to improve for next time (Fernandez – Lozano, 2012).

Jigsaw is a strategy where each student is in charge of becoming an expert on one part of the whole lesson. Just as in a jigsaw puzzle, each piece, each student's part, is needed for the completion and full understanding of the final product. Learning Together defines the different aspects that are needed for work to truly be collaborative work. The idea behind the Student Team Learning techniques is that when students learn in small, carefully structured learning teams, they are rewarded based on the progress made by all team members. They help one another learn, gain in achievement and self-esteem, and increase in respect for their classmates, including classmates from other ethnic groups and of different learning abilities.

As stated by Jansen, “math is malleable” (Jansen 2012, page 37). Knowledge about it is not fixed and the literature pointed out the importance of learning from others. This can be applied to all subjects and drives home the point to students that learning from others can be essential and beneficial. As mentioned by Ferguson-Patrick the idea to praise student’s responses in class that are above and beyond, and valuable. This makes it clear to all students that they can add valuable information to the class (Ferguson–Patrick, 2012). The teachers in several studies use group work at least once per class period. Educators searching for ways to make collaborative learning run smoothly and be beneficial in their classroom will be able to see the benefits of reflection, improvement in on task behavior, and attitude of students improve during this 6 week study.

Description of Research Process

Five data sources were used to collect information during the time frame of February 3rd –March 14th, 2014. These data sources included pre and post student survey, self-reflection and peer evaluations, on/off task behavior observations, and work completion tracking.

The student survey was the first data source collected. Students were given a ten question survey about their attitude towards collaborative group work. Students were given the survey during a science class using a Quick Response (QR) code and scanning it onto the iPad to take students to the survey. The purpose of this survey was to gain an understanding of individual student attitudes and trends in group data about collaborative learning. Students answered questions about their own preferred role in a group; leader, encourager, follower, or problem solver. They chose how they preferred to work: alone, partner, with teacher, or in a group. Students decided the number of students in a group that works the best for collaborative learning. They also answered questions about their feelings when working with peers. Examples of these questions can be found in Appendix A. The results of this survey helped me with the grouping of students and how to direct the study from this point forward. The post survey data was compared with the initial survey data to see if there were any changes in individual and group attitudes towards collaborative learning.

Similar data was also collected using student self-reflections after completing group work, and peer evaluations. Students were given simple self-reflections in Language Arts, Math, and Science collaborative lessons. They evaluated their work, collaboration, and effort.

The questions were kept simple to help them reflect on their own role while working in small groups. When students became comfortable with this format, the peer evaluation was added. Students then evaluated a peer partner in the same subjects when partner work lessons were given. The final step was to have students use these skills to evaluate their role and up to four peers after working in small collaborative groups. The sections in these evaluations were participation, engagement, leadership, and listening, speaking, and community. Peers do not see how they are evaluated by others in their group. I used this data to compare an individual's response to their peer's response about them. Results of these evaluations will help students to understand the positive and negative aspects of working in a group and to reflect on how to improve.

Throughout the study student behavior was also tracked. Observations were made by me on students' individual on task behavior, if they were discussing relevant class information and were completing their work. This data was tracked and attached to group work assignments in the Technology and Information Education Services (TIES) grade book system for the school. During a group work session I would observe individual students behavior by making notes of their contribution, such as: staying with their group, staying on task/topic, and behaviors towards peers. Each session ranged from 20-30 minutes during which I observed each group for around 5 minutes each. The observations were non-intrusive so I did not intervene when problems arose, only noted behaviors observed. This data helped to identify students who struggle working in collaborative groups, and students who excel in these situations. This data was then used to reorganize groups of students to get the right group dynamics.

The final data source for this research on collaborative work was that of work completion. Each assignment that was tied to a collaborative lesson was collected and graded for completion and accuracy. The assignments were completed together by the group not individually. These scores were then entered into TIES grade book. I looked at the completion and behavior data together to note if it was an individual student causing incomplete work, or a whole group lack of effort. Any trends in this data were noted and displayed in the final results.

In the next section, I will analyze the data sources as described above, the purpose being to determine to what extent students' learning can improve about the skills and benefits of collaborative learning in an elementary classroom improve their small-group on-task behavior, task completion rate, and attitudes about small groups.

Analysis of Data

The first data collected was a student attitude survey on collaborative learning. The survey was given at the start and end of the six week study. The pre and post study surveys were analyzed separately and then together to note any trends or changes. The survey results are listed as 'Pre' and 'Post,' both consist of 44 student responses. To start off the survey I wanted to find out the preferred method of learning by students. They were allowed to choose more than one option and write in their own option. Several students added the option of working with family in the comments box. There was a shift from the pre to post responses, working by myself to with a partner.

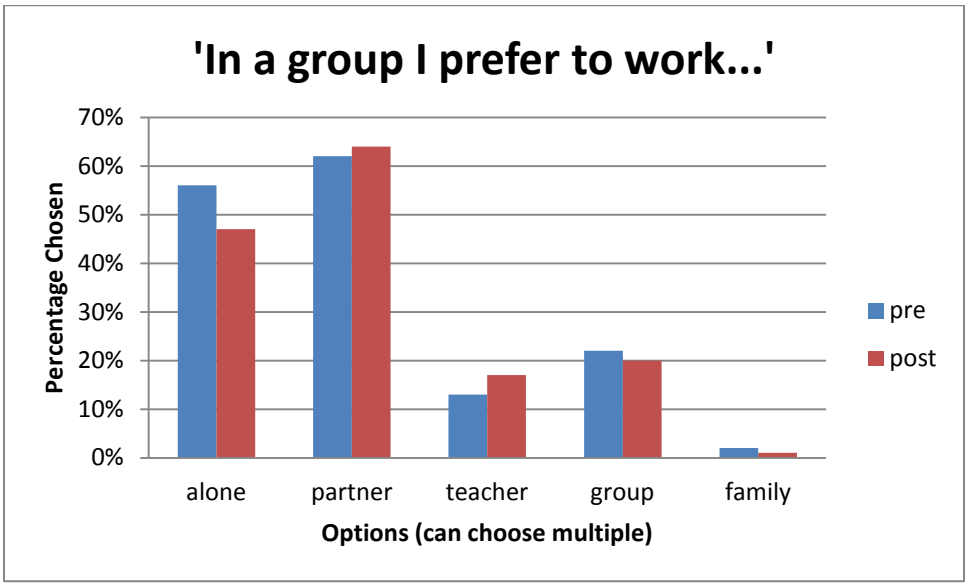

Figure 1. In a group I prefer to work____.

Part of the survey was also to find out student attitudes about working with peers in general. As well as if that attitude changed over time. The changes noted were movement from bad and good to very good. You can note that start in the attitude change in Figure 2.

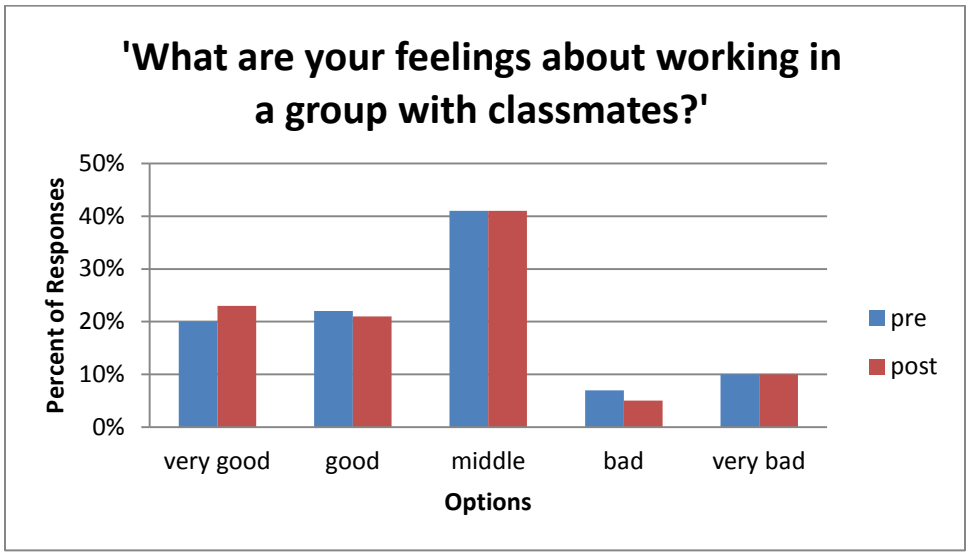

Figure 2. How do you feel about working in a group with peers?

To gain an understanding of student roles taken while working in groups the question of preferred role was asked. Role names were changed in the pre and post survey due to student confusion over what each meant. Roles were discussed in class during the study to provide students with a better understanding of the roles. There was a small amount of change from leader to problem solver or follower. With more knowledge and practice with roles in a group, I could see this becoming a more definite shift. Students were also allowed to choose more than one option.

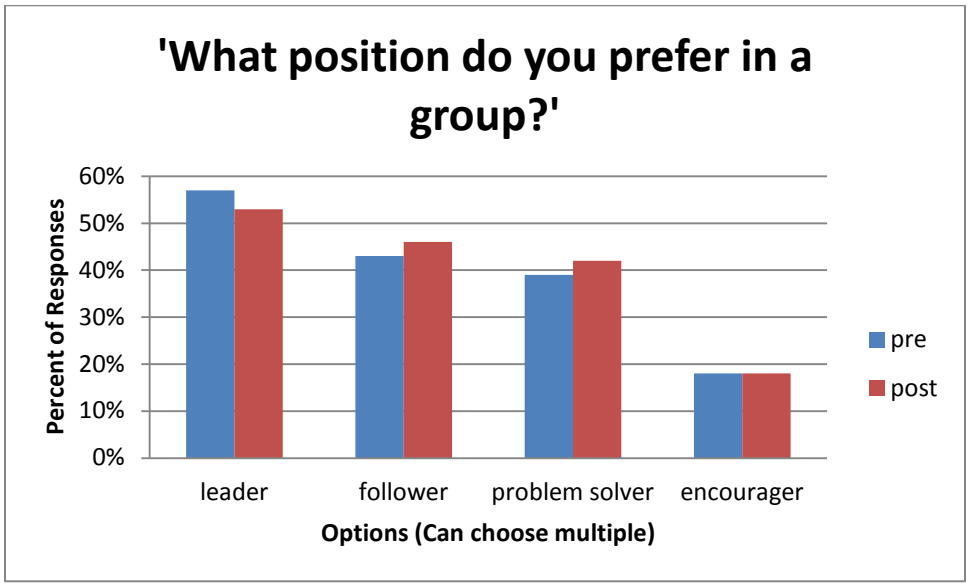

Figure 3. What position do you prefer while working in a group?

Being able to be open and honest with peers is something I have noticed as a problem. The next question was to determine how comfortable students are sharing in a group setting. There was a large shift in responses from difficult to either unsure or easy. This is good to see that students were starting to feel more comfortable speaking their mind with their peers.

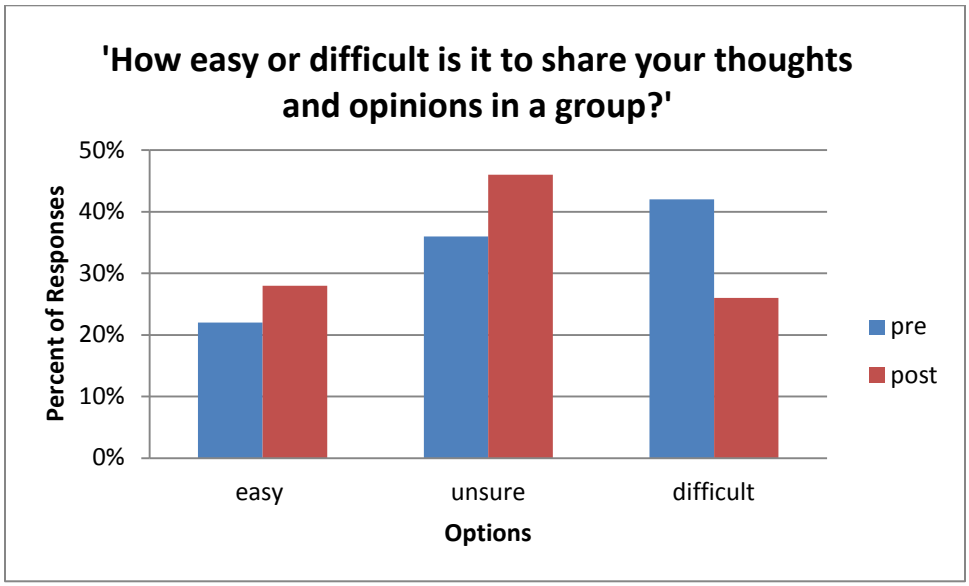

Figure 4. How easy or difficult has it been for you to share your thoughts and opinions in a group?

One major problem observed in this study was the interactions between students. Disagreements arise quickly and often lead to arguments and off task behavior. The following figure shows how they view agreement amongst peers in a group setting. It was most interesting to see that responses changed from difficult to unsure or easy.

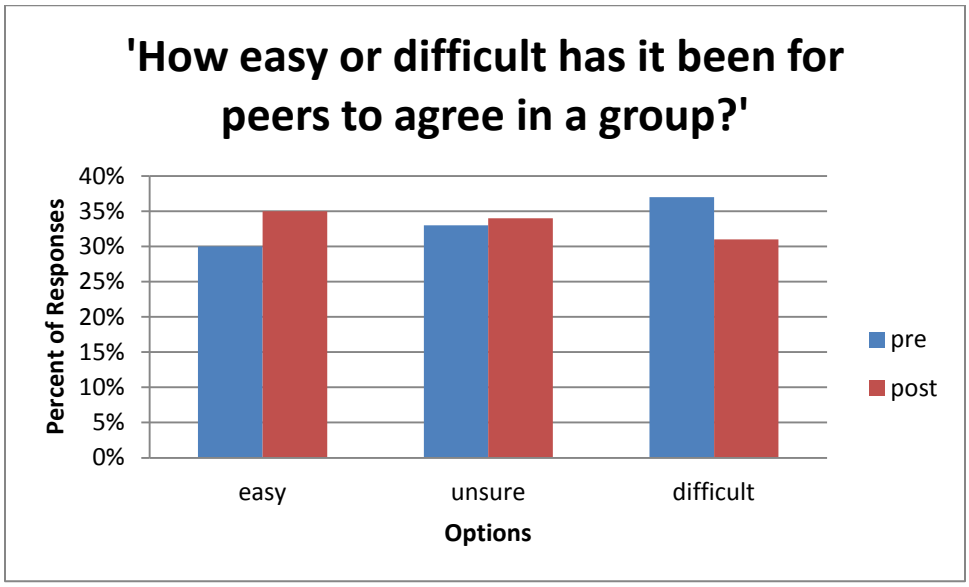

Figure 5. How easy or difficult has it been for peers to agree in a group?

In terms of learning new concepts from peers, students started the study with the majority seeing this work as beneficial in their learning. There was a small change from false to true.

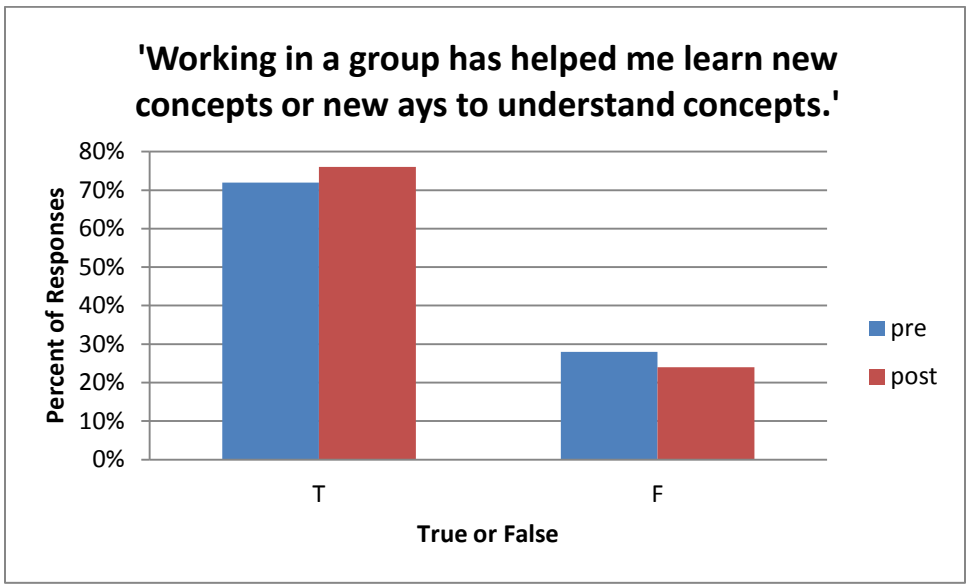

Figure 6. Working in a group has helped me learn new concepts or new ways to understand concepts.

The following showed that at the beginning of the study students mainly identified getting along with peers in collaborative learning. This response change was most surprising as several students changed from true to false. This does not match with Figure 5 in which it seemed students felt working in a group had been improving.

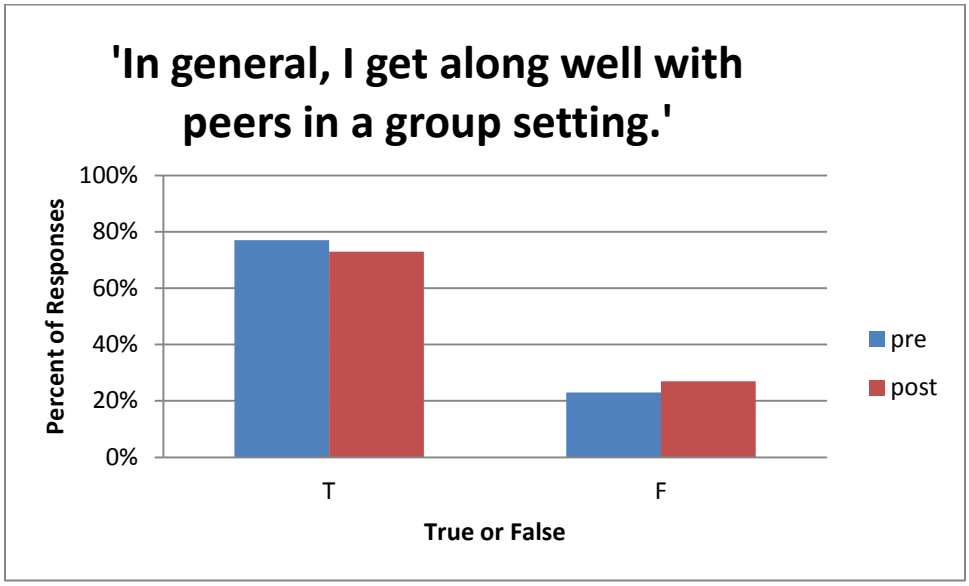

Figure 7. In general, I get along with my peers in a group setting.

Another question asked on the survey was of preferred size of peer groupings. The pre and post survey question differed; the post survey offered this as a multiple response question since student filled in responses during the pre-survey. It was interesting to note that the majority of responses in the pre-survey chose groups of 4 or less. The shift observed was little movement towards groups of two or three students.

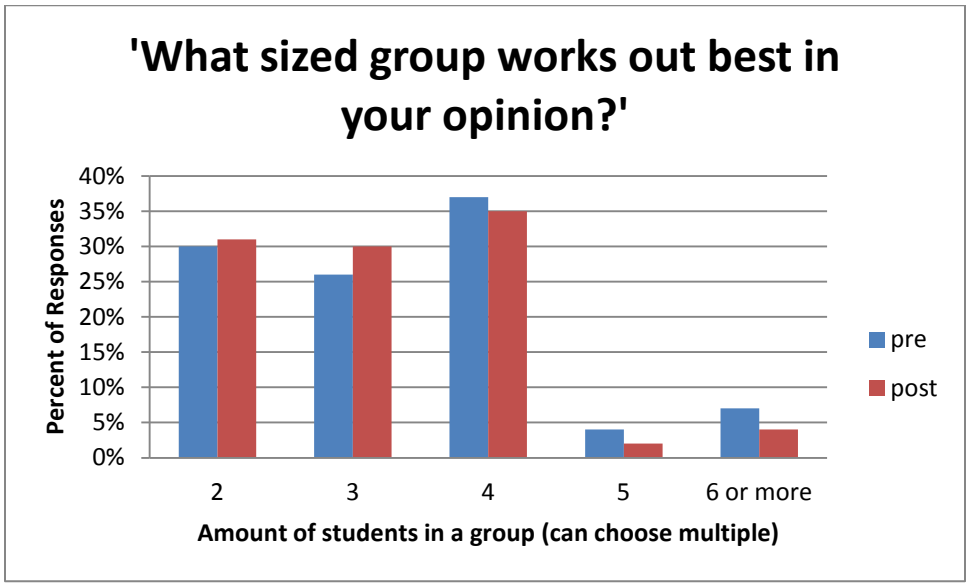

Figure 8. What sized group works out best in your opinion?

After completing the pre study survey, students took time during the second and third week of the study to reflect on their own performance in a group. Students graded themselves on a 3-point scale under categories of work, collaboration, and effort (see Appendix B). Results showed students who were observed as off task and having difficulty working with peers, often scored themselves the highest possible score, while in comparison, students observed as on task and positive group members often scored themselves lower in one or more categories.

The next step was to have students add in reflection on their peers during weeks four and five of the study. Students were responsible for grading themselves and the peers in their group. In this evaluation the categories were participation and cooperation, engagement, leadership, listening, speaking, and community (see Appendix C). There were definite differences in how students scored themselves than how their peers rated them. Some comments from students

included them noting who they worked well with or did not work well with. This was helpful information for restructuring groups.

During the study students' on and off task behavior was tracked. As the study progressed there was a definite drop in off task behavior and a rise in on task behavior. Figure 9 was looked at as an overall percentage of the 44 students in the study being mostly on or mostly off task. Student behavior was observed as participating or not within their groups task.

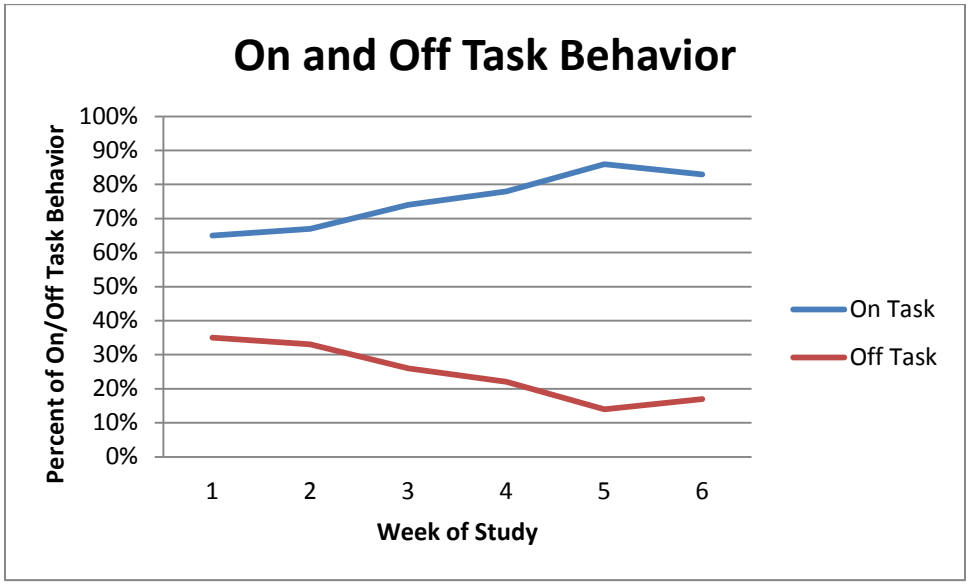

Figure 9. Students off task behavior during lessons.

Also tracked was students' work completion in regards to each collaborative lesson. Over the course of the study you can see a slow increase in the percentage of students who completed their work in class during the lesson and turned it in on time. One thing to account for were students who were absent for the lessons. Those students were either exempt from the assignment or completed an alternative.

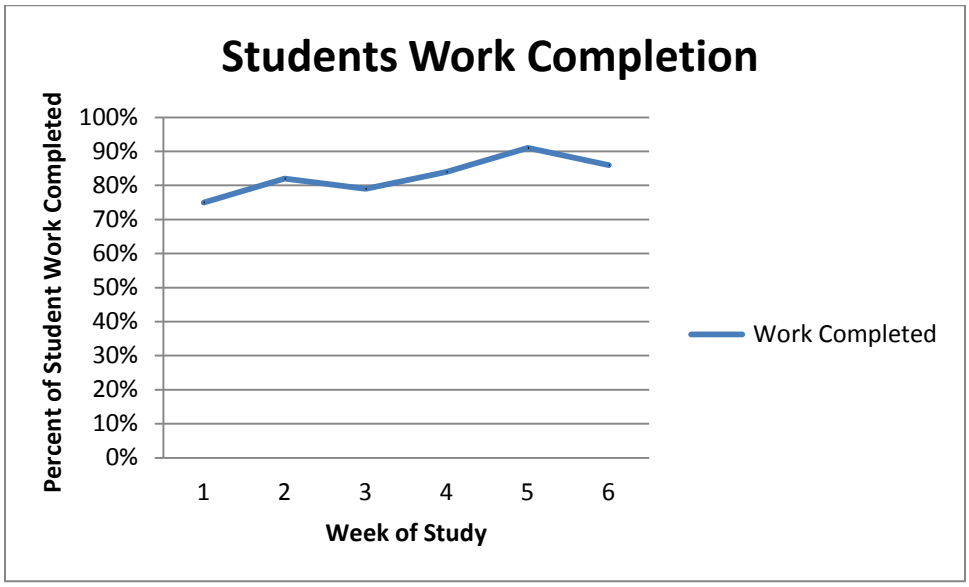

Figure 10. Work completion for each week of the study.

In conclusion, the data showed that as student attitude and understanding of collaborative learning increased, so did things like on task behavior and work completion.

Action Plan

The purpose of my research was to see any connections between teacher and student attitude towards collaborative learning. I also looked to see if there was an improvement in attitude, and if that also changed work completion and on task behavior. This research has helped me and my students understand the benefits of collaborative learning. Using these findings, the next course of action is to apply these findings to further improve student learning and engagement, my teaching practices, and to identify areas for future research.

The student survey helped them to identify positive and negative aspects of collaborative learning. Students were more open to discuss these responses during the study and understand the reasons for working in groups. This data will help me in continuing to work with students about their attitudes towards collaborative learning. Throughout the study several students in class wondered about having set roles in a group to help it flow smoothly. I plan to introduce and try out role cards, this way students can practice having a set job while working in a group.

Having students use self and peer evaluation sheets proved to be beneficial. When they were able to stop and reflect on the work they and their peers did, they were able to identify what was going well and what could be improved. It was also helpful for me to see what they were identifying as issues so we could discuss them in class. I will continue to use reflections and evaluations after having group work lessons to guide students' understanding and progress in improving working together with peers.

Student work completion and the quality of their responses increased. Overall, on task behavior did improve in collaborative lessons, in math especially. The one main struggle that did not change for a few particular students, was being able to stay on task and provide meaningful contributions to their group.

In science and social studies specifically, students are gender grouped. I would be interested to continue using this strategy and study the possible benefits and drawbacks. I have already seen how helpful it can be for the girls, who are more likely to speak up and add ideas in this environment

.

I plan to implement some independent activity or reflection piece during collaborative lessons for students who consistently struggle with staying on task. I do not want their behaviors to detract from others' learning. I also want those students to remove themselves from part of the lesson, so they can figure out what is not acceptable and how to fix the behavior.

Finally, this action research has helped me as an educator to make a positive change in my classroom. The skills employed in this action research will continue to impact how I make decisions in the future regarding my teaching decisions and practices. In the course of my teaching career, I will still be challenged to find solutions to issues that arise in the classroom. I anticipate now that I can and will apply the things I have learned in this action research to find solutions to problems that arise. I will also continue to create a positive and reflective collaborative environment.

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Appendix A: Survey Questions

Collaborative Learning

*1. Type your first name here

2. When I am given an assignment or project I prefer to work... (you may choose more than one)

- [ ] by myself
- [ ] with a partner
- [ ] with the teacher
- [ ] in a group

Other (please specify)

3. What are your feelings about working in a group with classmates?

- ( ) Very Good
- ( ) Good
- ( ) In the middle
- ( ) Bad
- ( ) Very Bad

4. What position do you prefer in a group? (you may choose more than one)

- [ ] Leader
- [ ] Follower
- [ ] Problem Solver
- [ ] Encourager

Other (please specify)

5. How easy or difficult has it been for you to share your thoughts and opinions in a group?

- ( ) Easy
- ( ) Unsure
- ( ) Difficult

6. How easy or difficult has it been for peers to agree in a group?

- ( ) Easy
- ( ) Unsure
- ( ) Difficult

7. Working in a group has helped me learn new concepts or new ways to understand concepts.

- ( ) True
- ( ) False

8. In general, I get along well with peers in a group setting.

- ( ) True
- ( ) False

9. What size group works the best in your opinion?

- ( ) 2
- ( ) 3
- ( ) 4
- ( ) 5
- ( ) 6 or more

*10. Choose as many as apply to you when filling in the blank below.
When I work in groups I learn more because_____

- [ ] I get to speak my ideas out loud and this helps to make them real for me
- [ ] I get to hear other people's ideas and this helps me think more about my own understanding
- [ ] I can ask questions in a way that isn't scary
- [ ] I can get help in a way that I feel comfortable
- [ ] I have more fun and I learn more when I'm having fun
- [ ] none of the above

Appendix B: Student Reflection

How Did I Do In My Small Group?

Work	☺ ☐ I finished my work and it is my best work.	😐 ☐ I finished my work, but it is not my best work.	☹ ☐ I did not finish my work.
Collaboration	☺ ☐ I tried my best to participate in the small group.	😐 ☐ I tried hard to participate, but I was pretty quiet in the small group.	☹ ☐ I did not participate in the small group.
Effort	☺ ☐ I tried my best and was on task the entire time.	😐 ☐ I tried hard, but was not on task the entire time.	☹ ☐ I did not try my best and I was not on task.

Appendix C: Self and Peer Reflection

Collaborative Work Rubric

Rate yourself and your group members a score of 0-3 based on your actions during group work and your group member's actions during group work.

Self	Member #1	Member #2	Member #3	Group Expectations
				Participation & Contribution: I participated and contributed to my group's task the entire time we worked. I did my very best.
				Engaged: I was engaged on the task at hand the entire time we worked. I stayed on task, was focused, and refrained from discussing topics that differed from our target.
				Leadership: I was a leader and used my best leadership skills during our group work, including keeping others engaged and on task.
				Listening: I listened to the teacher's directions. I also listened to the ideas and contributions of my group members. I took their ideas into account and respected what they had to say.
				Speaking: I used an appropriate voice level during our group time today
				Community: I treated each group member with respect. I worked to build an academic relationship with my group members. I trusted each group member and worked to help each member trust me through my speech and my actions.
				Total Points Earned

List each group member's name on the lines provided

Comments: _____

_____

_____