Strategies to Increase Participation in Cooperative Learning Groups

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Abstract

This action research examines how focused organization, group roles, and gender grouping impact student participation when working in a cooperative group setting. Fifty-two sixth graders were studied for a period of nine weeks. Results show when students are organized in their cooperative groups, there will be an increase in student participation. Participation also increased when students were given assigned roles. Lastly, this research shows that my hypothesis was incorrect by thinking participation would increase when students work in same gender cooperative groups. To come to these results, data was collected using a triangular approach focusing on observations, change in grades, and questionnaires.

Introduction

The current debate in education at the start of this century is focused on how we can continue to help students to be successful both academically and socially. One way this can be achieved in the classroom is through the use of cooperative learning. Compared to competitive or individual work, cooperation leads to higher group and individual achievement, higher-quality reasoning strategies, more frequent transfer of these from the group to individual members, greater metacognitive skills, and more new ideas and solutions to problems (Mooney, 2006). This action research project focuses on implementing and measuring the use of different strategies to increase participation in cooperative learning groups. This study examines the effectiveness of organization, group roles, and gender grouping in cooperative groups in order to increase student participation. The participants in the study consisted of fifty-two sixth grade students.

In order to conclude accurate results, underlying assumptions must be addressed. Teacher researchers should make explicit the things about which they have made judgments, because it is easy to slip into a narrative that seeks to validate one's position (Mills, 2007). One underlying assumption I had prior to the completion of this action research project was how students will react to the strategies I have for increasing participation in cooperative learning groups. I had concerns that these strategies might be beneficial for some students, but might not affect all my students. With these concerns, I realized that I can control my interventions to include all my students equally. Knowing the importance of cooperative learning groups and my underlying assumptions, I can focus on the purpose of my action research, which again is to determine and measure the success of strategies to increase positive student participation in cooperative learning groups.

Area-of-Focus Statement

I will be focusing my research on three questions that may lead to an increase in student participation in cooperative groups. First, how does focused organization impact student learning? Second, how do assigned group roles affect student participation? The last question I was trying to answer in my action research is how gender grouping impacts participation.

Review of Literature

After reviewing numerous reviews, I have compiled ten recent and relevant pieces of literature that I feel support my project.

Blecksmith, R., Levin, A., Shahyerdian, J., Steele, D. (2008) Women in calculus: The effects of a supportive setting. *Journal of College Reading and Learning*, v39 n1 p7-34. (ERIC Document Reproduction Service No. EJ16606).

After reading over this piece of literature, I was taken back and was able to see my problem through someone else's lens. One problem I want to look at is how gender grouping impacts participation in a cooperative learning group. The key ideas in this research is that when females are working with males, males tend to speak up more often in discussions, although when females work with females there is more participation overall with the members of the group. I believe this is something that will be beneficial to me as I make my observations of the groups.

California Department of Education. *Cooperative learning: Successful cooperative learning elements*. Retrieved January, 22, 2010 from http://www.cde.ca.gov/sp/el/er/cooplrng.asp

Another important resource was found on the California Department of Education website. This resource is supported with a lengthy bibliography and includes key elements for successful cooperative learning. One in which describes the importance and need for organization during cooperative learning. This finding supports my initial though for a factor that increases the effectiveness of cooperative learning.

Ee, J., Koh, C., Liu, W., Oon Seng, T., Wang, J. (2007*). Perceptions of low ability students on group project work and cooperative learning.* Singapore: Education Research Institute, Seoul National University. (ERIC Document Reproduction Service No. EJ768969).

This document supports my initial thoughts that there is a direct correlation between low ability students and the effectiveness of cooperative learning. One area I wish to improve is making sure my lower ability students are actively involved in the cooperative learning process. This piece of literature allows me to look at cooperative learning when dealing with students at different levels, focusing mostly on low ability students. Through this article, I read what low ability students perceived as the benefits of working together and what are the weaknesses. One specific area of this research is finding that organizational skills effect how low ability students perceive cooperative learning. This will help me as I continue my Action Research Project.

Eggen, P., & Kauchak, D. (2007). *Educational psychology: Windows on classrooms.* Upper

Saddle River, NJ: Pearson Merrill Prentice Hall.

According to Eggen, P., & Kauchak, D. "Most researchers agree that cooperative learning consists of students working together in groups small enough so that everyone can participate in a clearly assigned task"(2007 p. 432). This literature supports my thoughts by showing how have assigned task and organization impacts student participation.

Ehens, C., Gates, J.(2003). *Assisting learners with special needs in a regular classroom at a*

parochial school. Chicago, IL: Saint Xavier University and Skylight. (ERIC Document

Reproduction Service No. ED481549).

This research is important to my Action Research Project because it incorporates special needs students in a cooperative group setting. Ehens, C., & Gates, J., (2003) focused on special needs students in group settings and had focused organization within the group settings for their participants. This research presents 'promising practices' that might help me increase student participation for all students when focused organization is implemented in cooperative learning groups.

Kahveci, M., Imamoglu, A.(2007) Interactive learning in mathematics education: Review of

recent literature. *The Journal of computers in mathematics and science teaching* v. 26

no2 (2007) p. 137-53. Retrieved February 11, 2010 from FirstSearch database

(WilsonSelect) on the World Wide Web: http://firstsearch.oclc.org

This literature investigates the use of certain types of interaction in mathematics

education. One area in which it focuses on is the interaction and participation based on grouping

of students. This literature also reviews the use of having an organized focused during group

work in order to increase participation. When reviewing this article it supported my initial

thinking over the purpose of my study. As I read this, I was able to see how my research

questions all correlate with each other and leads me into the purpose of this study which is

looking at different strategies to increase positive student participation in cooperative learning

groups.

Mooney, S. (2006). A Simple group work approach for effective field work: A soil sciences case

study. *Journal of geoscience education*, 54(1), 74-79. Retrieved February 12, 2010,

from ProQuest Education Journals. (Document ID: 998188641).

Although this article focuses on field work dealing with soil examinations there is a

correlation between this study and what I plan to look at with assigning group roles to increase

student participation. In this study it was found that when given roles, participation, transferable

skills, and positive experiences arose from each role. This literature allows me to see my

problem and what I'm looking for through someone else's perspective and in a setting outside

the classroom, although still within a teaching method.

Oais, F. (2007). *Enlightening advantages of cooperative learning*. Malaysia: UiTM Malaysia

University. (ERIC Document Reproduction Service No. ED 495702).

Assigned group roles is another area I want to focus on for my Action Research Project

when it comes to cooperative learning. This article allows me to look at the importance of

student accountability when working in a group setting. Looking at accountability in the aspect

of group roles seems crucial to the productiveness of each individual student in a cooperative

group setting.

Tai-Seale, T., & Thompson, S. B. (2000). Assigned conversations. *College teaching*. *48*(1), 15-

18. Retrieved February 13, 2010 from FirstSearch database (ERIC) on the World Wide

Web: http://firstsearch.oclc.org

Reviewing this research allowed me to think about ways I can have focused

organization in my classroom in order to impact student participation. Observing the findings

from this study and incorporating them into my classroom might hold individual students

responsible for leading class conversations. In turn, this could increase positive student

participation in cooperative learning groups.

Tomlinson, E. (2009). *Gender and peer response*. Teaching English in the two-year college,

37(2), 139-152. (ERIC Document Reproduction Service No. EJ868492).

This literature will be helpful for my Action Research Project. It looks at gender

grouping from a unique perspective. Reading through allowed me to understand the importance

of gathering data based on student responses to the interventions that will be made in the

classroom. One of the purposes of my study is to measure the success of certain strategies. I

believe written peer responses will help me as a measuring tool for success.

Research Questions

In order to carry out my Action Research Project, I must have interventions. These are things I have to do in order to answer my three questions. This is considered the action part of my plan. The intervention I plan to use for my first question is having students know exactly what is expected out of them during cooperative learning. I want to create some type of checklist that the students can go by to keep them organized and on track for the lesson they are working on. Currently in my classroom, I give the students something to work on and have them pair up in groups to solve the problems. Once they do this, there is no organization for how they solve the questions that are being asked of them. For example, I notice some students mentioning that they will do the first few problems while someone else does the others. I also notice that the students that have a better understanding dominate the conversation. I would like to create some type of organization in which each student has their checklist and must choose three out of the five different ways they shared their strategies with the group in order to solve the problem.

Next, I will have interventions by assigning group roles in order to try to increase student participation. I will have the students working in the same groups for a week at a time. During this time each student will have a specific role they must follow while in their group setting. Some possible roles would be the presenter, which would be the student that presents their findings to the class, a leader, which would make sure everyone shares a strategy for solving a problem, and a recorder, which would write down the answers.

Last, I will have interventions by trying different groups based on gender. Often in my classroom I see the girls only working with girls and boys working with the boys. By changing the groups based on gender, I might see more participation. I would try completely mixing the groups and also try just having one member of the opposite sex each cooperative learning group.

Data Collection Matrix

|	DATA SOURCE		
Research Questions	1	2	3
1. How does focused organization impact student participation?	Observation	Grade Book	Questionnaire
2. How does assigned group roles affect student participation?	Observation	Grade Book	Likert Scales
3. How does gender grouping impact participation?	Observation	Grade Book	Likert Scales

Data Analysis

Focused Organization

Throughout the past weeks, I have been implementing and measuring the use of different strategies to increase student participation. Focusing on three important aspects of cooperative learning, I first studied how focused organization affects student participation.

The first way in which I measured focused organization was through direct observation. Teachers who undertake action research have countless opportunities to observe in their own classroom (Mills, 2007). After analyzing the results of my first research question using direct observation, I witnessed more students working cooperatively, students sharing strategies, actively listening to other group members, and class work being finished by the end of the hour. To better analyze my observations, I used a teacher observation log (Appendix B) to observe how students are interacting and working when given focused organization.

In order to analyze and interpret the results of how organization impacts student participation, I turned to another form of data collection. I used my grade book, focusing on in-class assignments and the percent of my 52 students that showed an overall increase in their class work. As shown in Figure 1, 55% of students had an increase in their in-class grade. Increases ranged from .8% to 14% over a three week period. I believe this increase was due to students taking an active role in contributing to their cooperative group, listening to others, and sharing strategies. As for the 35% of students that stayed the same as well as the 10% who had decreasing grades, I contribute that to not completing their focused organization sheet (Appendix C).

Figure 1
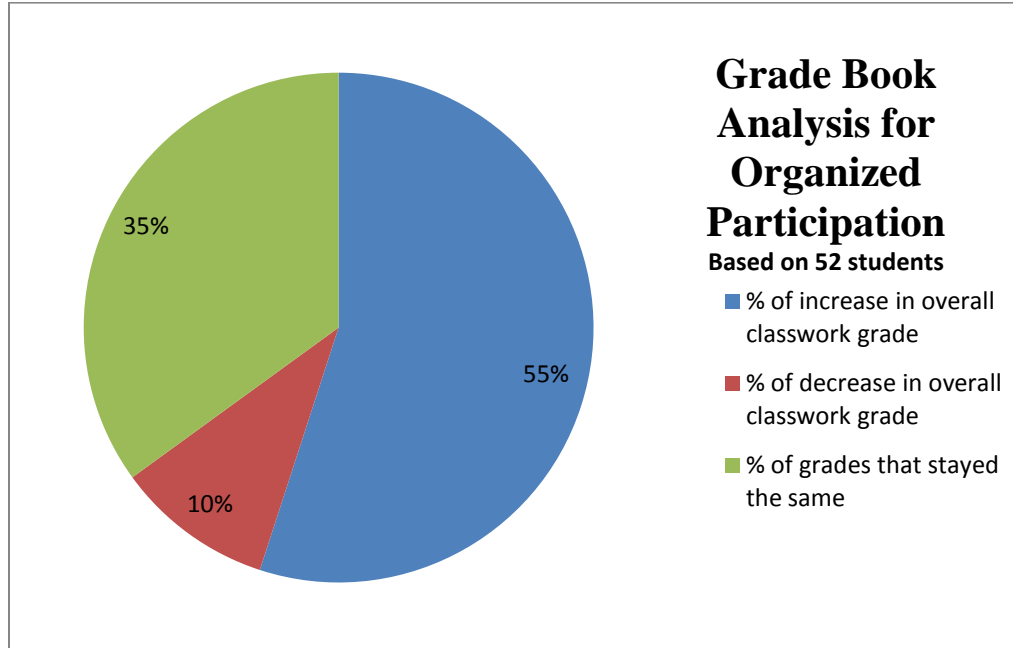
The last tool I used in order to triangulate the data was a data analysis form students

completed daily when working on in-class work (Appendix C). There was a direct correlation

between students that completed this form with an increased percentage of in-class work, as well

as a correlation between students that did not complete the focused organization form and had

grades that either stayed the same or decrease. Once students completed the form, I separated

them into three piles. Students that responded with critical thinking and complete sentences,

students that answered the questions with short or one word answers, and students that did not

finish or do the form. From the 55% of students that had an increase in their grade, 82% of them

were in the pile that was labeled the critical thinkers.

My conclusion is, when a cooperative groups are given work in which they have to be

organized in their cooperative group setting, there will be an increase in student participation.

When given direct questions, students feel compelled to participate more.
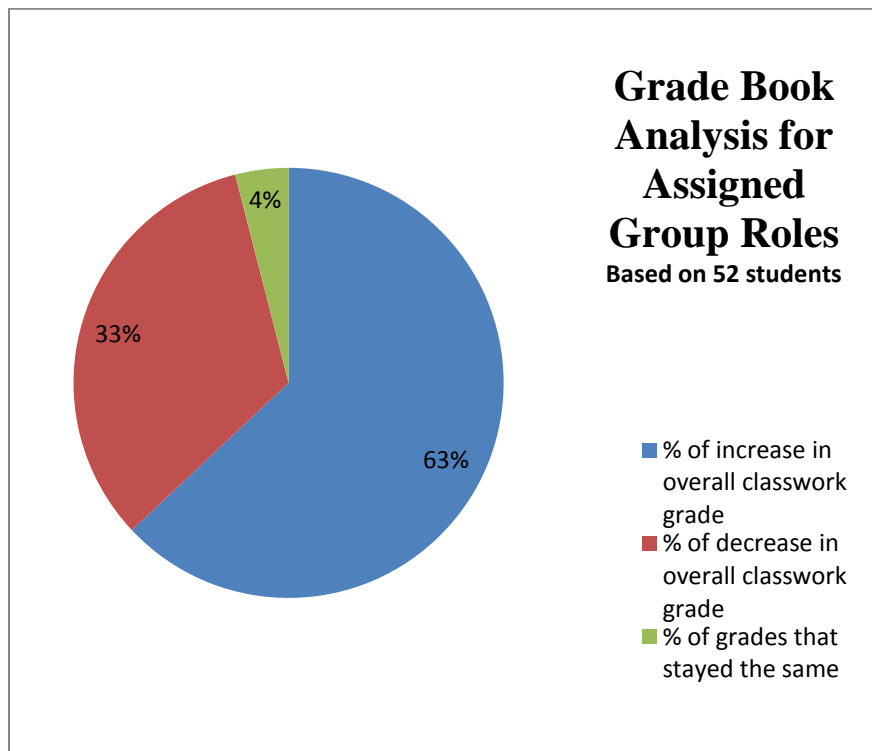
Assigned Group Roles

The second research question I was able to answer through implementation in the classroom and a variety of measuring tools was how assigned group roles affect student participation. During my three week study, I was able to conclude my results through direct observation (Appendix D), my grade book (Figure 2), activity sheet that allowed students to chose their roles (Appendix E), and an analysis of a Likert Scale (Appendix F and Figure 3) that students completed at the end of the three weeks.

Similar to my first research question, I used direct observation to see if implementing group roles while students work in cooperative groups had an impact on participation. At a very early stage of my research, I was able to see that assigning group roles had an impact on student participation when in a group setting. I observed students paying closer attention to the group during practice time and also the need to represent the assigned role they picked for the day. Daily, I completed Appendix D in which I collected data from the 15 day period. 66% of my observations were clearly evident. Often, students had a hard only following their roles and not dominating someone else's role. I also found at the beginning students were not finishing their work. I think this was due to the groups trying to get acclimated to their roles and what every role consist of.

The next type of data I gathered to prove that assigned group roles affect student participation was looking at my grade book for in-class work over the three week time period. According to Figure 2, an astonishing 63% of students increased their overall in-class work over a period of 12 in-class assignments. When students are forced to have a group role, they are more compelled to participate. I believe the reason why 33% stayed the same in their overall in-class work grade, was due to the cooperative groups learning how to facilitate their roles and complete

their work at the same time. For future research, it would be more efficient to spend a week

allowing students to completely understand the different roles before collecting data based on

their cooperative groups.

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Figure 2

Grade Book
Analysis for
Assigned
Group Roles
Based on 52 students

33%

4%

63%

■ % of increase in
overall classwork
grade
■ % of decrease in
overall classwork
grade
■ % of grades that
stayed the same

The third as last way I collected data in order to triangulate the data was an analysis of a

Likert Scale (Appendix F). Students were asked numerous questions over their experience with

group roles and the way it affected participation over the last three weeks. The following results

are illustrated in Figure 3.

Figure 3
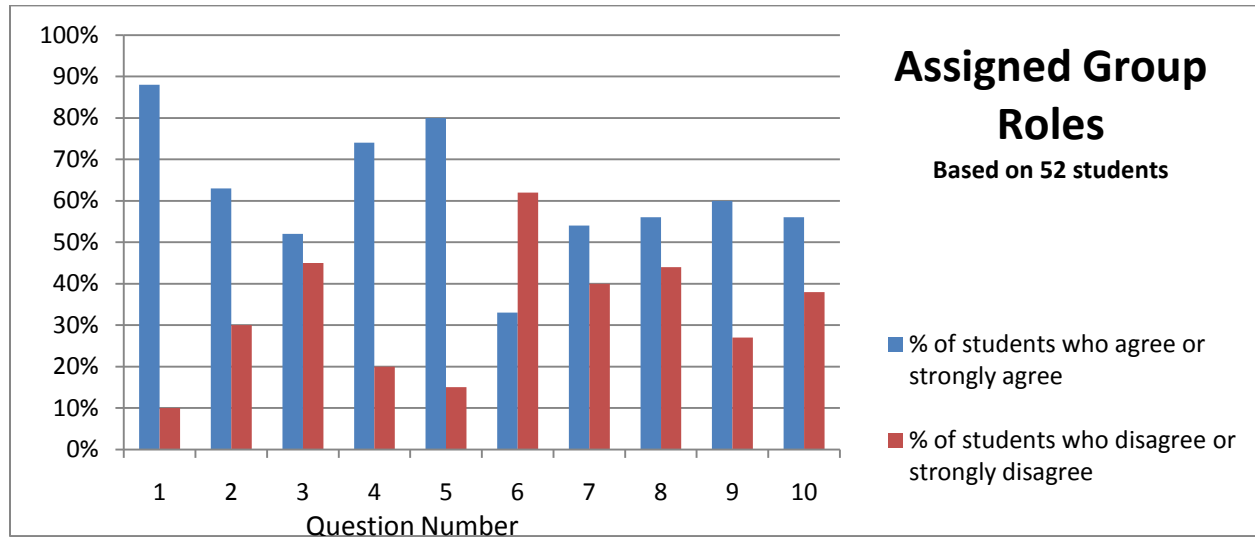
The data that is present in figure 3 represents student's responses to the Likert Scale. An overall analysis of the data shows that 80% of the students answered that they felt they participated more because they had a group role. Over half the students answered they saw less behavior problems in the classroom due to the participation in the group settings.

In conclusion, it's evident in all three data collection sources that assigned group roles positively affect student participation. I believe the most important piece of data collected was the Likert Scale which represented student's feelings over the last three weeks.
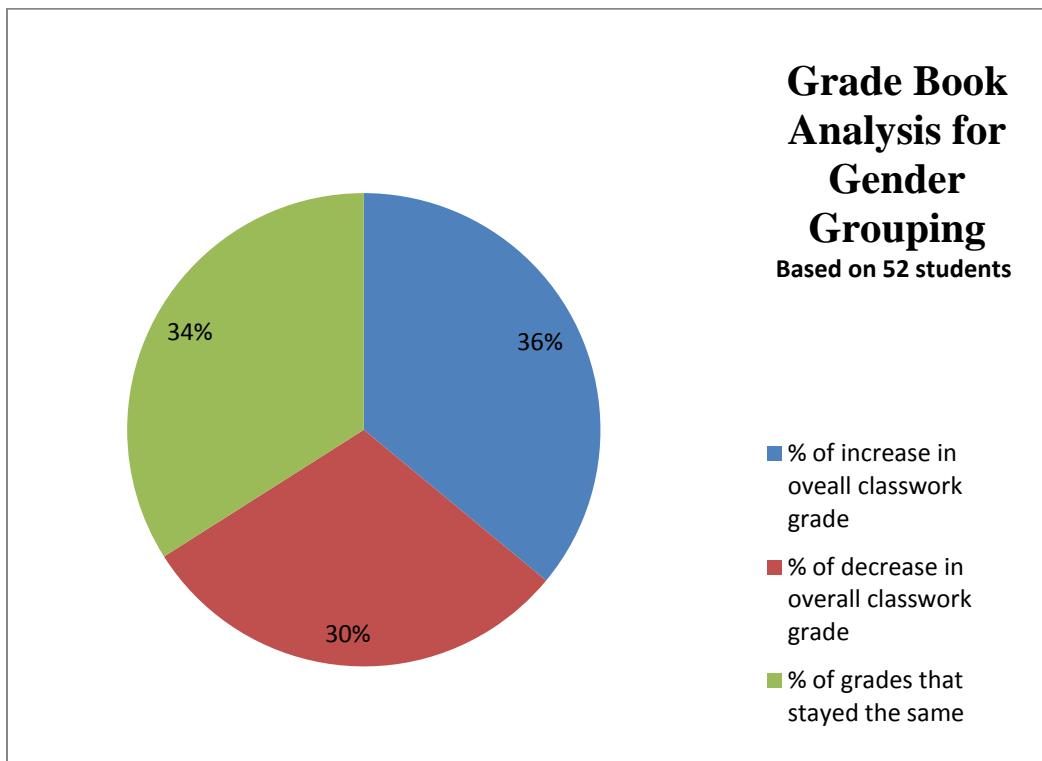
Gender Grouping

My third and last research question I studied was how gender grouping impacts participation. This question was the most interesting to me because in my sixth grade class when I allow students to get in cooperative groups they always gravitate to the same gender students. My first data collect tool was direct observation. Everyday for three weeks, I used my teacher observation log (Appendix G) to answer the question of participation in cooperative groups with

same gender grouping. Based on my observation, I noticed that some students often dominated during the exploration of the in-class work. It was clearly evident that students often got side tracked and I had to keep them on the task that was at hand. I also observed that although students were in same gender group, there was less participation if they weren't comfortable with the other students in their cooperative group setting.

As with my other research questions a clear conclusion won't be made with only one set of data. The second data collect source I used was how my grade book changed due to gender grouping. As indicated in Figure 4, 36% of students saw an increase in their overall in-class work grade. Although, almost 1/3 of the class at 30% saw their overall in-class work grade decrease. Similar to my direct observation analysis, I believe students not feeling comfortable in the group they were working in, as well as students getting sidetracked led to these results.
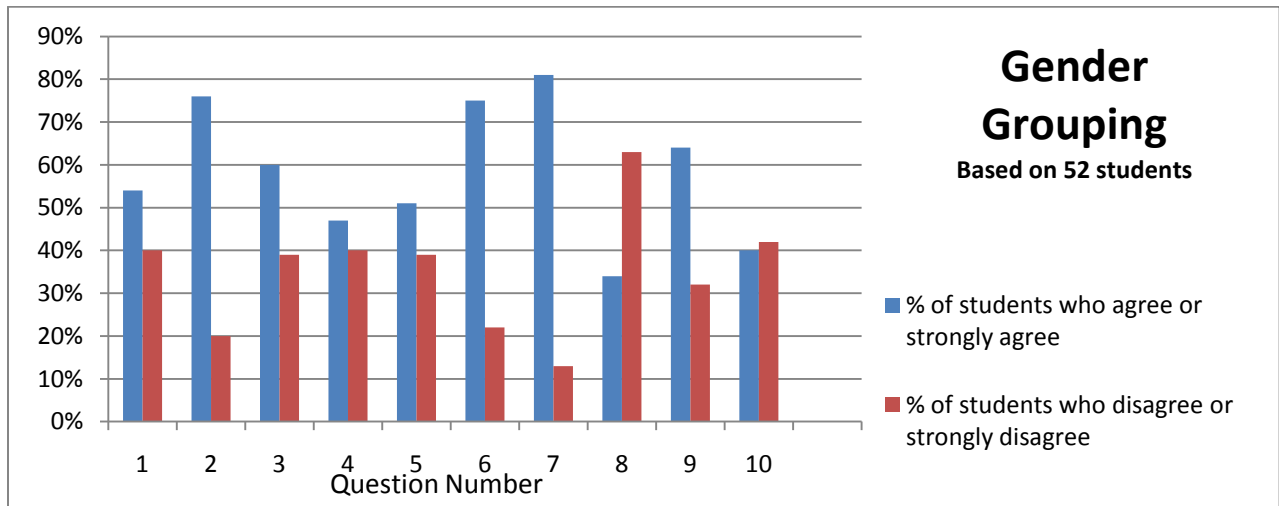
Figure 4

Grade Book Analysis for Gender Grouping
Based on 52 students

34%
36%
30%

- % of increase in oveall classwork grade
- % of decrease in overall classwork grade
- % of grades that stayed the same

Lastly, I had the students complete a Likert Scale at the end of the three week period. The
results of this are shown in Figure 5 with the scale the students filled out in Appendix H. There is
a direct correlation with my observations and the student's response. 81% of students did not like
that they couldn't pick their own group. Because of this high percentage, I believe fewer students
were willing to participate. Based on the student's responses only 34% of students believed they
saw less students misbehaving. This also ties into my direct observation of students getting
sidetracked.

Figure 5

Gender Grouping — Based on 52 students. Bar chart by Question Number (1–10) showing % of students who agree or strongly agree (blue) and % of students who disagree or strongly disagree (red).

My overall conclusion does not match my hypothesis. I thought giving the students cooperative group time with people of the same gender would increase participation due to a feeling of comfort. Based on my triangulated data, I believe that grouping students according to gender does not increase participation when working in a cooperative group setting.

Action Plan

Throughout this research, I questioned what I will do after I collect, triangulate, and analyze the data. What would be the plan for the future; to move forward and use the results to better and strengthen my classroom? After revisiting my notes, journal, and data, I see numerous ways that this action research will lead me in the right direction to plan for the future.

My hypothesis for all three of my action research questions was that I would see an increase in participation in the cooperative groups. Although, I was correct and the data shows that there was an increase in participation when students were in organized groups and also when given assigned group roles, I was incorrect about participation increasing when students work grouped according to their gender.

Based on my results there are going to be numerous changes made in my classroom. First, based on our math curriculum we follow a projected based learning approach and also teaching in an inquiry fashion. Keeping both these in mind, I will have to take the extra steps

when planning the lessons to make sure students are organized and will be aware of what their

rolls are and also their group mates. I will also revise the way I allow children to pick groups.

Most of the times previously when we were working in our books and it came time to explore the

lesson, I would allow the students to create their own groups. I will revise this in which students

have a choice of one male and one female in the group. Based on these groups, I will have

students working this way for at least a week. Using this strategy is a way students will be able to

explore the ideas of the organized groups and assigned roles with the same group members.

I've also come to question why students don't participate more when working in groups

that only consist of one gender. Do they get sidetracked, feel more comfortable, or don't have the

urge to push themselves? Based on the results of this action research project I'm going to look

into this aspect of lack of participation when working with same gender grouping. This has

sparked my interest and I plan to do another action research project in the 2010/2011 school

year. I will focus on ways students increase participation when working in same gender

grouping.

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Appendix A
Data Collection Matrix

	DATA SOURCE		
Research Questions	1	2	3
1. How does focused organization impact student participation?	Observation	Grade Book	Questionnaire
2. How does assigned group roles affect student participation?	Observation	Grade Book	Likert Scales
3. How does gender grouping impact participation?	Observation	Grade Book	Likert Scales

Appendix B

Teacher Observation Log
Focused Organization

Date	Questions	Clearly Evident	Somewhat Evident	Not Evident
	Are students motivated with a good attitude?			
	How are students working in a cooperative group with Think, Pair, Share?			
	Are all students following data analysis form?			
	Are students sharing strategies with group?			
	Are students actively listening to their group members?			
	Did students finish their in-class work?			

Appendix C

Focused Organization

Complete the following sheet along with your in-class assignment. Staple them together and place in your content box.

THINK, PAIR, SHARE

1. What did your partner share with you?

2. Do you both agree on the same answer?

3. Was your answer the same as most of the students in class?

GROUP WORK

1. Work on problem one together. Have each person share their strategy they tried on their paper. Did most of your group get the same answer?

2. What did YOU do for the person(s) that didn't get the correct answer?

3. When working on the rest of the problems, you need to contribute ways you solved at least 3 of the problems. What 3 problems did you share your strategies? Name the people in your group and what problems they shared their strategies

Appendix D

Teacher Observation Log
Group Roles

Date	Questions	Clearly Evident	Somewhat Evident	Not Evident
	Are students motivated with a good attitude?			
	Do students understand their assigned roles?			
	Are students taking their assigned roles serious?			
	Are students dominating their roles and also others?			
	Are students actively listening to their group members?			
	Did students finish their in-class work?			

Appendix E

Name_____

Student Roles

Directions: When working in your groups, everyone must choose a different role. Write the date next to the role you have for the day. REMEMBER you must choose at least 3 different roles for the week. Turn this sheet in to your content box on Friday.

Facilitator/Encourager: This student gets discussion moving and keeps it moving, often by asking the other group members questions, sometimes about what they've just been saying. You are also responsible to make sure your group stays on track.

Checker: Someone needs to double-check to make sure everyone has the same answer on their paper when the group has come to an agreement on an answer.

Timekeeper: Someone needs to make sure that the group stays on track and gets through a reasonable amount of material in the given time period.

Reflector: This student will listen to what others say and explain it back in his or her own words when another member of the group doesn't understand. The reflector must ask the original speaker if the interpretation is correct.

Presenter: This student will share their groups findings during the summarize/explain portion of the in-class work.
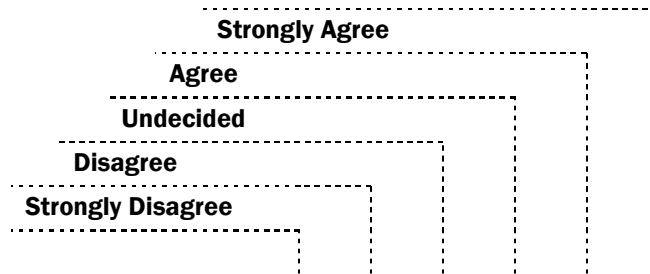
Sheriff: You are responsible to make sure EVERYONE in your group is doing their job

Caller: You are to call on different group members to share their strategies for each problem

Appendix F

Group Roles

Read the following statements and indicate whether you strongly agree (5), agree (4), are undecided (3), disagree (2), or strongly disagree (1) with the following statements.

|	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. I felt group work has changed over the last 3 weeks	1	2	3	4	5
2. I had had at least 4 different group roles over the last 3 weeks	1	2	3	4	5
3. I often felt I had a leadership role in my group	1	2	3	4	5
4. I felt I had to be more focused because I had a specific group role	1	2	3	4	5
5. I felt that I participated more because I had a group role	1	2	3	4	5
6. I felt I participated less because I had a group role	1	2	3	4	5
7. I felt that more students participated because they had to	1	2	3	4	5
8. I saw less students goofing off	1	2	3	4	5
9. I did not like having a group role	1	2	3	4	5
10. I felt like their was more pressure on me because I had a specific role	1	2	3	4	5

Appendix G

Teacher Observation Log
Gender Grouping

Date	Questions	Clearly Evident	Somewhat Evident	Not Evident
	Are students motivated with a good attitude?			
	Do students understand their assignment?			
	Do students understand who is in their group?			
	Are some students dominating the assignment?			
	Are students getting side tracked?			
	Did students finish their in-class work?			

Appendix H

Gender Grouping

Read the following statements and indicate whether you strongly agree (5), agree (4), are undecided (3), disagree (2), or strongly disagree (1) with the following statements.

Strongly Agree
Agree
Undecided
Disagree
Strongly Disagree
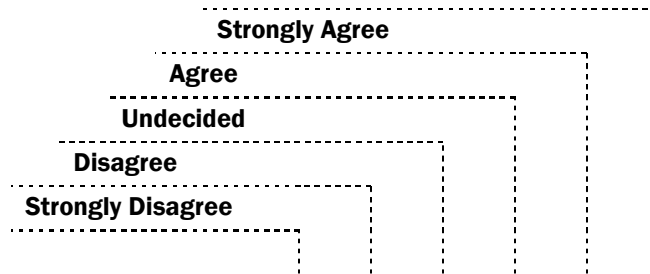
1. I felt group work has changed over the last 3 weeks   1   2   3   4   5

2. I was happy to be working with all girls/boys   1   2   3   4   5

3. I often felt I contributed to the group   1   2   3   4   5

4. I often felt that my group members contributed as much as I did   1   2   3   4   5

5. I felt that I participated more because I was with all girls/boys   1   2   3   4   5

6. My group often got side tracked   1   2   3   4   5

7. I didn't like that I couldn't pick my group   1   2   3   4   5

8. I saw less students goofing off   1   2   3   4   5

9. I always finished the assignment that was given to me   1   2   3   4   5

10. My participation increased over the last 3 weeks   1   2   3   4   5