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Implementing a Successful Collaborative Learning Environment

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Implementing a Successful Collaborative Learning Environment

An Action Research Report by Andrea Beasley

Implementing a Successful Collaborative Learning Environment

Submitted on December 19, 2013
in fulfillment of final requirements for the MAED degree

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Date _____

Abstract

This action research report summarizes a study of 65 diverse student learners in a 10th grade AP US History class. This research investigates the implementation of a collaborative learning environment to elicit positive effects on student attitudes toward learning and their achievement. To gain pre-intervention data, students were surveyed on their attitudes and took multiple-choice assessments. During the intervention period, students completed surveys regarding the effectiveness of the collaborative learning implementation and completed multiple-choice assessments. After the interventions, students were surveyed again on their attitudes toward learning. The results demonstrated insignificant effects on student attitudes but improvements in student achievement. Data supports concluding that collaborative learning may impact student retention of content and learning objectives. Future research may indicate whether the execution of such interventions over a longer period of time would have more considerable outcomes in the areas of retention or student attitudes about learning.

As a secondary Social Studies teacher for an Advanced Placement course, I continuously look for and attempt new instructional methods to increase student achievement. I do not just look for new pedagogical strategies to aid my students in achieving classroom success, but also seek those strategies that will facilitate their path toward life-long learning. Various studies have found correlations between collaborative learning environments and improvements in multiple aspects for student life including, but not limited to: motivation, academic performance, and interpersonal skills (Hsuing, 2012; Nagel, 2008; Peterson and Miller, 2004). According to some, collaborative learning improves student achievement in the classroom and facilitates growth in characteristics that lead to success in post-secondary opportunities (Vito, 2013; Staples, 2004). Given the unique emphasis on post-secondary success at my institution, I found myself interested in learning more about collaborative learning and how to implement it successfully in my own classroom.

Collaborative learning, cooperative learning, and study groups are all increasingly popular terms emphasized in educational circles. With an emphasis on “21st Century Skills” the focus of teaching has shifted away from the teacher as the “expert” to the teacher as a “guide” and facilitator. Research demonstrates that the generation of students that are in classrooms today, Generation Z as they are known, benefit significantly from active learning strategies and pedagogy that moves beyond the lecture (Vito, 2013). New studies on collaborative learning have concurred with this research on Generation Z (Igel and Urquhart, 2012). When groups are structured properly and content implemented correctly, there can be vast positive effects for students. Teachers, who desire to meet the variety of needs of current students and incorporate successful research-based

instructional methods, can be highly effective in their classrooms by implementing collaborative learning.

As I taught Advanced Placement United States History to 10th grade students at a high school¹ in the metro area of St. Paul, MN during the 2012-2013 school year, I often wondered if adjustments in my instructional methods could positively impact student achievement in the course and on the final AP Exam. Data from the exam demonstrated that 37% of students at St. Paul Area High School passed the exam while the national average is 50-55%. Students need to characteristically score 60% or higher on multiple choice exams, and receive a score of 4 or higher on written essays in order to be “proficient” and “on track” for success on the AP Exam. When looking at score predictors for success on AP US History exams, students enrolled in my course are consistently “not proficient” based on their multiple-choice scores and, therefore, are not on track for success. The AP teachers, Instructional Strategy Facilitators, and Administrators at St. Paul Area High School are concerned with the low performance of students.

One of the contributing factors to the limited success of students in this course could be the age of the students. Across the nation, the majority of students enrolled in AP US History are 11th graders and thus have had another year of preparation for college level coursework. Another contributing factor could be their course work prior to their 10th grade year. Some students are in remedial English/Language Arts course but then are expected to read at a college-level for the AP US History course. These students, in particular, significantly struggle throughout the course. Another factor could be

¹ I will refer to the school as St. Paul Area High School in place of the school name to protect the confidentiality of the participants.

insufficient support of students. For instance, parents may not be aware of students' potential need for support and many of these students may not know how to ask for help.

Advanced Placement United States History is a course available to high school students that is equivalent to coursework found in an introductory college course in United States History (College Board, 2010). In this course students learn to evaluate historical arguments, assess a variety of primary and secondary sources, develop historical thinking skills, understand themes in U.S. history, and write well-evidenced essays. The College Board also states:

Although there is little to be gained by rote memorization of names and dates in an encyclopedic manner, a student must be able to draw upon a reservoir of systematic factual knowledge in order to exercise analytic skills intelligently.

Striking a balance between teaching factual knowledge and critical analysis is a demanding but crucial task in the design of a successful AP course in history.

(2010, p. 5)

In May of each year, students may choose to take the AP exam. The exam has three major components: 80 questions multiple choice, a document based question, and two free response questions. Students are given an overall score of 1-5. If they earn a three or higher they may earn college credit-- depending on the college they choose to attend.

Advanced Placement United States History is different at St. Paul Area High School than at other high schools in the country. St. Paul Area High School "is becoming the first school in the state to offer a comprehensive early college high school program allowing students the opportunity to earn a two-year associate degree for free- all while still enrolled in high school (St. Paul Area High School, 2012)." While AP US History is

characteristically offered only to the highest achievers, at St. Paul Area High School students in the “academic middle” now have the opportunity to enroll in the course. The website for St. Paul Area High School states:

For students in the academic middle, the Early College program will provide the necessary foundation and support to benefit from college credit-earning opportunities as well. Students who do not meet college-readiness indicators from standardized assessments may be identified for additional foundation classes and college seminar courses to help prepare them for the rigor of college courses. This will provide them with the skills they need for success beyond high school in whatever post-high school career path they choose, including two-year colleges, four-year colleges, and/or certificate programs, internships or military. (St. Paul Area High School)

Due to the implementation of the Early College program, enrollment in the AP U.S. History course has more than doubled. More than half of the students are enrolled in college seminar courses to help prepare them for the rigor of college course, but at the start of the course, they do not meet college-readiness indicators.

St. Paul Area High School is located in a close suburb of the Twin Cities in Minnesota. In 2012-2013, the total enrollment in grades 9-12 was 1,640. The diversity of the student population in the AP U.S. History course was comparable to the diversity of the student population in the school: 71.4% of students are White, 11.9% of students are Black, 6.3% of students are Hispanic, 9.2% of students are Asian, and 1.2% of students are Native American. Of the total enrollment, 36.1% of students are eligible for free or

reduced price lunch, 2.8% of students receive special services for English as and Second Language, and 12.1% of students receive special services for Special Education.

The low performance on the AP exam of students in 2013 and the factors that contributed to this problem lead me to my research question: “To what extent will implementing a structured collaborative learning environment elicit positive effects on students’ attitudes toward learning and achievement on multiple choice assessments in an AP US History classroom?”

Based on a desire to improve students' achievement in my classroom, I have come to wonder about the extent to which student ownership of their learning can affect their outcomes. If I can improve their attitude toward the content area--and their sense of personal responsibility for learning the material--that may make a difference in their retention of material. I will be looking at the data from multiple choice assessments to see if there are improvements on objective evaluations of their performance. I will be giving a pre-and post survey regarding their attitudes to measure their ownership in their learning.

The effects elicited by cooperative learning are still being researched, however, “empirical evidence suggests that students studying cooperatively exhibit significantly better achievement” (Hsiung, 2012). Johnson and Johnson, “concluded that cooperative learning results in an increase in higher level reasoning, increased generation of new ideas and solutions, and greater transfer of what is learned within one situation to another” (as cited in Nagel, 2008). Nagel (2008) has cited other positive effects including promoting academic accomplishments, increasing student retention, and improving student self-esteem and communication skills. Another study by Peterson and

Miller (2004), that measured students in a variety of aspects including cognitively, emotionally, and motivationally, found that higher achieving students benefitted the most from a cooperative learning environment. Due to the positive effects of studies such as the ones previously described, cooperative learning has become a “buzzword” in educational circles. The level of awareness and attempts at implementation has increased and this fact isn’t unexpected after hearing the depth and breadth of positive effects collaborative learning environments that have demonstrated (Hsiung, 2012; Nagel, 2008; Peterson and Miller, 2004; London, Polzer, and Omoregie, 2005).

Collaborative learning can take many shapes and forms depending on the environment that the instructor creates, the direction and format described to students, and the population of students in the course. According to Igel and Urquhart (2012), one of the most important elements of collaborative learning is considered prior to the class period and lesson even begins: the decision of which students will comprise each group. There are times when it can be effective and beneficial to allow student choice in groups and other times when random selection is appropriate. However, when implementing a consistently successful cooperative learning environment, carefully selected groups by a teacher has been proven to be the most effective method. Other research suggests that the structure of cooperative learning is particularly beneficial for some cultural groups (London, Polzer, and Omoregie, 2005). Ely and Thomas discuss the importance of diversity in selecting groups: “The diversity of skills, knowledge, and ideas in a group gives rise to multiple perspectives that enhance the group’s capacity to solve problems and accomplish tasks, especially when these tasks entail member interdependence and coordination of information and ideas” (as cited in London, Polzer, and Omoregie, 2005,

p. 118). In a study by Chin-Min Hsiung (2012), students that were placed into groups of three with one high, one middle, and one low academic achiever were often successful. Including student feedback and interests when making group choices can be quite useful, but it is vital to create student groups that include student differences.

Not only is diversity imperative to successful grouping, but the role that each member plays within the groups can have significant positive or negative effects on the group. As group members learn to rely on each other for specific roles and actions, this positively affects the level of productivity of the entire group. Each member then feels a sense of responsibility to the group and this can be a motivational factor “to learn and recall new information---that is, to deepen their expertise and be ready to apply it when the need arises” (London, Polzer, and Omoregie, 2005, p. 124). One study found that rotating students as the facilitator of the group was especially effective (Shaw, 2011). Shaw (2011) also found that weekly meetings and check-ins were essential for success.

Multiple components to collaborative learning are necessary in order for them to function properly. Igel and Urquhart (2012) list and describe three principles for successfully implementing collaborative learning: (1) Teach group processing and interpersonal skills; (2) Establish cooperative goal structures within groups; and (3) Provide mechanisms for individual accountability. By training students how to: positively interact with one another in a specific learning setting, improve their task management skills, and the work within different roles and responsibilities in a group, students will more quickly develop the interdependent skills necessary for effective collaborative learning. By linking outcomes and teaching students to work toward a shared goal, students may be more likely to communicate more effectively with one another in order

to meet the learning target. By holding individual members accountable for the learning, each student will have increased motivation to contribute to the groups' effort and avoid loafing. Paul Nagel (2008) lists five essential elements, that originally were presented by Johnson and Johnson, which contain similarities to Igel's three principles: "1. Positive Interdependence; 2. Face-to-Face Interaction; 3. Individual and Group Accountability; 4. Interpersonal Skills; and 5. Group Processing." When each of these components are properly taught, enforced, and implemented, the collaborative learning groups have proven to flourish in previous cited studies.

Although certain pedagogical methods can lend themselves to increased opportunities for misbehavior by students, when collaborative learning settings are incorporated correctly, evidence demonstrates increased student engagement, enhanced academic performance, and improved student behaviors.

Teachers can diversify their instructional strategies and thus meet the needs of more students by implementing this approach. Teachers who can successfully structure group learning and implement the essential components will create a learning environment that: thrives through group learning; will not have to fear the common problems of cooperative learning; and, will allow their students to experience the many benefits of working in collaboration with others.

Description of Research Process

As I sought to answer my research question, “To what extent will implementing a structured collaborative learning environment elicit positive effects on students’ attitudes toward learning and achievement on multiple choice assessments in an AP US History classroom?” I created surveys, evaluations forms and other means to gather data related to my interventions. I utilized five methods to evaluate the effectiveness of implementing regular study groups and collaborative learning techniques in my classroom. These five methods included: a student attitude survey, study group questions, study session questions, multiple-choice assessments, and personal observations. The data measured student attitudes towards learning and tracked their progress on multiple choice exams. Each method was used more than once during the research process. These methods enabled me to assess and evaluate whether the implementation of a collaborative learning environment elicited positive effects on the students’ attitudes toward learning and their achievement on objective exams. The five methods measured each of these targets and produced data that effectively answered my action research question and led to further questions for potential research.

In order to effectively analyze the data produced after the interventions were put into place, it was imperative to collect baseline data with which to compare. Students began school on September 4, 2013. I collected baseline data for the first unit in the course. This baseline data included two quizzes, one test, one student attitude survey, and one set of study group questions. The unit began on September 4, 2013 and ended on September 20, 2013.

The first pieces of baseline data that I collected were the student attitude survey and study group questions. Student participated in the first pieces of baseline data at the start of the second week of school. The student attitude survey contained a series of questions directed at assessing students' attitudes toward learning. The survey assessed students' motivation, ownership, positive outlook, and efficacy. I utilized questions from The Duckworth Lab at the University of Pennsylvania that created questions from research entitled, "Grit Scale," that "examines two traits that predict success in life: grit and self-control. Grit is the tendency to sustain interest in and effort toward very long-term goals (Duckworth, Peterson, Matthews, & Kelly, 2007). Self-control refers to the voluntary regulation of behavioral, emotional, and attentional impulses (Duckworth, 2011). I wanted to measure students' ability to maintain effort over a long period of time and through a very difficult course. By using the Grit Scale, I was able to evaluate students' levels of motivation and effort at the end of the intervention period compared to prior to the intervention period. The study group questions assessed students' attitudes toward collaborative learning. Students chose reasons why they did or did not like study groups and selected the options that with which they agreed. They also had the option to put in their own reasons. These questions enabled me to compare student attitudes toward collaborative learning after the intervention period was completed. I utilized iPads and Google forms to collect this data.

The Attitude Survey Questions contained ten questions that evaluated students' feelings towards AP Courses, their level of comfort with the teacher and other students, and their ability to work hard and persevere. The first four questions were answered by

giving a rating of 1-5 with a 1 being defined as “Not at all” and a 5 being defined as “Completely.” These were the first five questions:

1. How well do you understand the purposes of AP Courses?
2. How confident are you that you will be able to stay in AP US History all year?
3. How comfortable are you sharing your ideas in class discussions?
4. How likely are you to ask a teacher for help if you are having trouble in class?

Questions 5-10 evaluated students’ feelings about their persistence and ability to work hard. Students answered these questions by giving a rating of 1-5 with a 1 being defined as “Does not describe me at all” and a 5 being defined as “Completely describes me”.

These were the statements evaluated:

5. Setbacks (delays and obstacles) don’t discourage me. I bounce back from disappointments faster than most people.
6. I have difficulty maintaining (keeping) my focus on projects that take more than a few months to complete.
7. I am a hard worker.
8. I often set a goal but later choose to pursue (follow) a different one.
9. I finish whatever I begin.
10. I am diligent (hardworking and careful).

Students answered these questions at two different times during the school year, before and after the intervention.

Students answered the Study Group Questions in the same way and on the same days as the Attitude Survey Questions. The first question of this group gauged students interest working in small groups. It was answered using a rating of 1-5 with a 1 being

defined as “No interest” and a 5 being defined as “Very interested”. Students then took a look at two questions and checked all boxes that applied to them. Students answered why they did not like to work in small groups first. The options for check boxes were:

1. I end up doing all the work.
2. There is too much chaos/noise.
3. I do not learn from small groups.
4. It is uncomfortable to work with others.
5. None of the above; I like to work in small groups.
6. Other (students could fill in their own responses here).

The next question asked students to give the reasons why they did like to work in small groups. The options for the checkboxes were:

1. It helps to share the work with others.
2. I learn from others’ ideas.
3. I enjoy working with people.
4. Talking through the material help me remember it.
5. None of the above; I do not like to work in small groups.
6. Other (students could fill in their own responses here).

The next piece of baseline data was the multiple choice assessments that were given during the first unit in the course. During the next two weeks of the semester, students took two 20 question multiple-choice quizzes to assess their comprehension of the content from the textbook, lectures, and activities. Students had prior knowledge of these quizzes and had adequate preparation time. Quiz questions consisted of questions from resources provided from the textbook we use in this course. Students took a unit test

on at the end of the third week of school, which marked the end of the pre-intervention period. It was a 35 question multiple choice exam that was comprised of questions from previous Advanced Placement United States History exams. The level of difficulty of these questions is much higher than the level of difficulty found on the quizzes. I utilized the results of these assessments to compare with assessments after the intervention period was completed.

The 4th week of school marked the start of the intervention period. Each week, students engaged in a collaborative learning activity. Students engaged and participated in groups that I specifically chose based on student achievement levels, gender, and race/ethnicity. For one class period each week, students were given specific learning objectives, activities, individual and group tasks and roles, vocabulary and concept support, and a group evaluation form. After students participated in their study group, they answered five questions about the effectiveness of their group and the session and their feelings toward the next study session. This data was collected in class using paper and pencil. The group evaluation was focused on measuring the effectiveness of the group, the quality of the time spent, and a quick assessment of the learning targets. The activity each week varied; however, the group evaluation remained the same. The two forms of data were collected during the study groups were study sessions questions, based on the group evaluation form, and my own personal observations.

Each week students took a 13 question multiple choice quiz to assess their comprehension of the content from the textbook, lectures, and activities. These quizzes were similar to quizzes taken in the pre-intervention period. Students had prior knowledge of these quizzes and had adequate preparation time. I created questions based

on the resources provided from the textbook we use for this course. I utilized the results from these quizzes to compare to the initial quizzes taken during the pre-intervention period. When students completed the second unit they took a unit exam. This exam was comparable to the exam taken at the end of the first unit. The test was created by using questions from previous Advanced Placement United States History exams and thus had a high degree of difficulty.

Once students completed the intervention period, students retook the student attitude survey and study group questions for a second time. The questions were the same and focused on measuring the same information. I used the results to see if there were improvements in students' motivation, ownership of learning, positive outlook, and efficacy.

During the entire process, I made personal observations of the intervention process and the results. I took notes during each study session to mark student behaviors and describe student participation and engagement. I utilized a class roster to mark behaviors and wrote comments in the margins of the page. My view of the quality of the intervention gives an additional perspective that helped to gain a deeper understanding of process. I was able to assess student improvements and student attitudes through a critical, but personal way. My personal observations are my final method that evaluated the implementation of a collaborative learning environment and answered my action research question.

Analysis of Data

During the implementation of the study groups, four sets of data were collected.

1. The first set of data was based on students' attitudes toward AP Courses and their own views of their work ethic and persistence. It is identified as Attitude Survey Questions.
2. The second set of data was based on student attitudes toward working in groups and is identified as Study Group Questions.
3. The third set of data collected was completed each week during the intervention period. It was based on the effectiveness of the each study session and is identified as Study Session Questions.
4. The fourth and final set of data collected was based on their academic performance on multiple choice assessments (quizzes and tests). It is identified as Data on Assessments.

The first data collection piece, Attitude Survey Questions, measured students' feelings toward learning, advocacy, persistence, and work ethic. Each of these qualities is essential for success in an Advanced Placement course. My objective was to measure if participating in collaborative learning would bring forth more positive feelings. The following chart and graphs show data from the Pre-Intervention and Post-Intervention surveys that students completed.

Attitude Survey Questions	Pre Intervention Average	Post Intervention Average
How well do you understand the purposes of AP Courses?	4.15	4.14
How confident are you that you will be able to stay in AP US History all year?	3.95	3.77
How comfortable are you sharing your ideas during class discussions?	3.15	3.07
How likely are you to ask a teacher for help if you are having trouble in class?	3.63	3.46
Setbacks (delays and obstacles) don't discourage me. I bounce back from disappointments faster than most people.	3.44	3.43
I have difficulty maintaining (keeping) my focus on projects that take more than a few months to complete.	2.90	2.88
I am a hard worker.	3.93	3.75
I often set a goal but later choose to pursue (follow) a different one.	2.78	2.98
I finish whatever I begin.	3.73	3.55
I am diligent (hard-working and careful).	3.81	3.70

Table 1. Numerical representation of the average score (1-5) given to each of the statements.

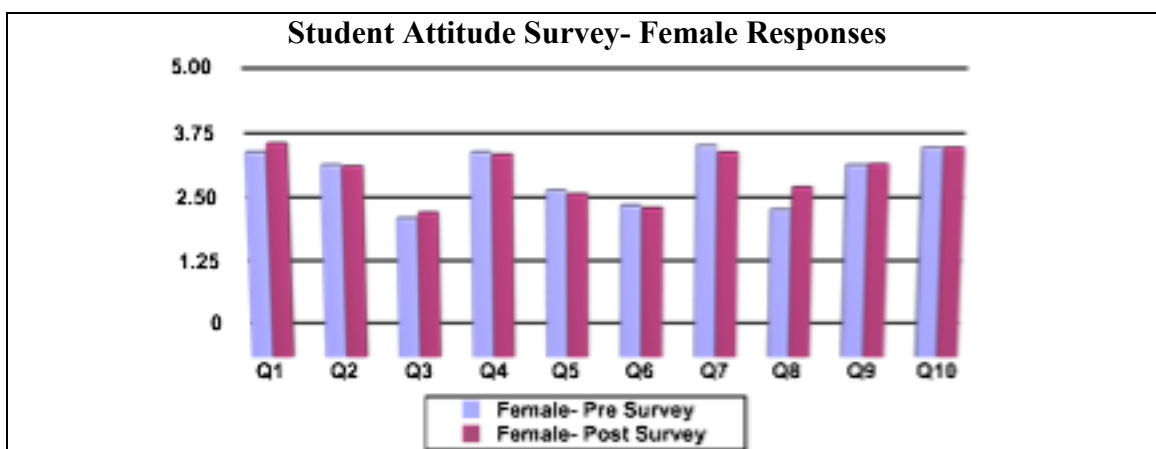
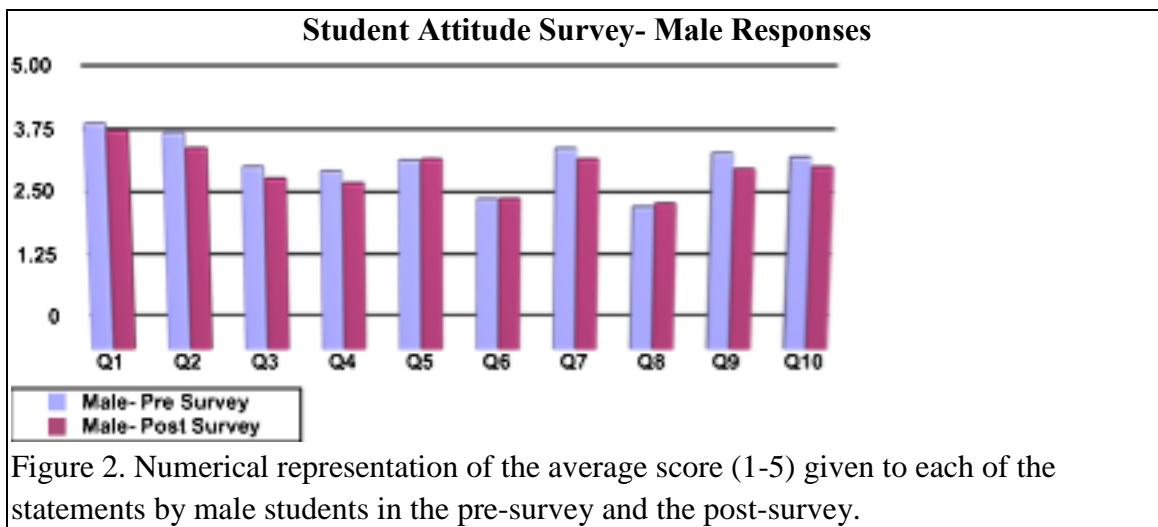


Figure 1. Numerical representation of the average score (1-5) given to each of the statements by female students in the Pre Survey and the Post Survey.



Gender	Pre-Survey Average	Post-Survey Average
Female	3.41	3.48
Male	3.62	3.47

Table 2. Numerical representation of the average score (1-5) given all the statements by female and male students in the pre-survey and post-survey.

The averages of student responses to each of the Attitude Survey Questions found in Table 1 demonstrate a negative trend from the pre-intervention survey to the post-intervention survey. Although there is a negative trend, the change is so small as to be statistically insignificant. The average of each question on the post-intervention survey is within two-tenths of the average of the pre-intervention survey. Students responded to these questions just a month after the original survey and had only experienced three study group sessions during the intervention. I wonder if students were given this survey after a longer time had passed and after experiencing more study sessions if there would be more significant changes in the response average. When I broke down the data by gender, I found more interesting results. For more questions, females had an equal or more positive score. Males, however, responded more negatively in the post-survey. Specifically, females had an increase in their understanding of the purposes of AP courses

and how comfortable they felt sharing ideas in class. Males had more negative responses in every category except their attitudes toward setbacks and their ability to stay focused on a goal over a long period of time. This information suggests that females and males had different experiences in the study groups that have led to different results. This conclusion was supported when data was analyzed in Table 2. Females increased their average on the post-survey while males decreased their average; although both females and males ended with an average within 1/100th of each other. In fact, out of 23 females surveyed, 15 had more positive or the same average while only 8 had a more negative average. Out of 31 males surveyed 15 had more positive or the same average while 16 had a more negative average. This table may reinforce the conclusion that males and female reacted differently to the study groups and could give potential rational for why males and females had dissimilar responses on the attitude surveys.

The second data collection piece, Study Group Questions, identified reasons students like and/or do not like study groups. This data was collected prior to the interventions and immediately after the interventions.

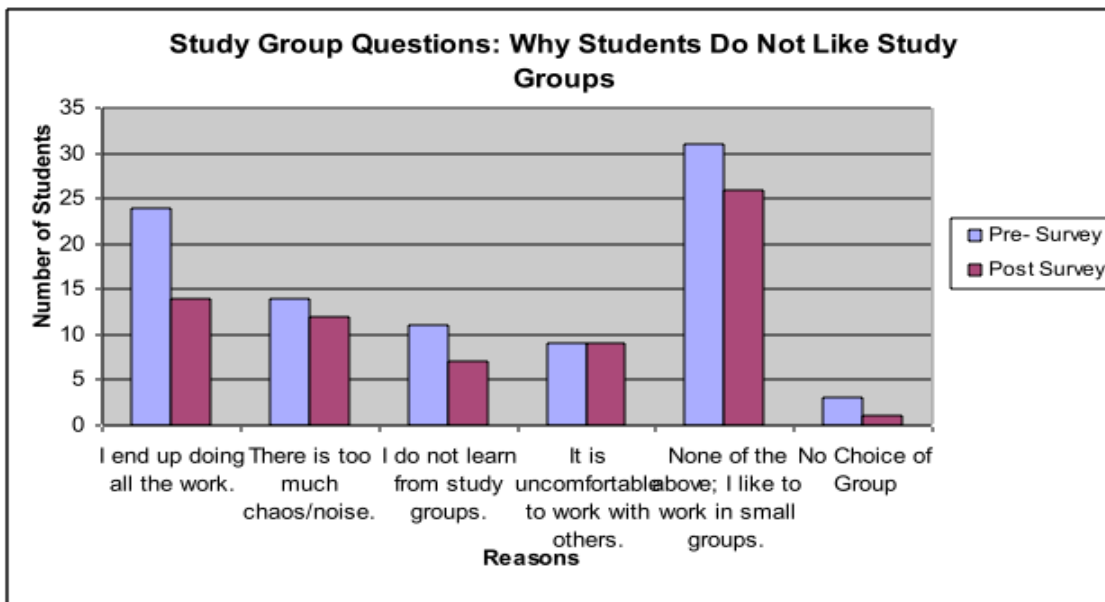


Figure 3. Numerical representation of the number of students who responded to each statement regarding why students do not like study groups.

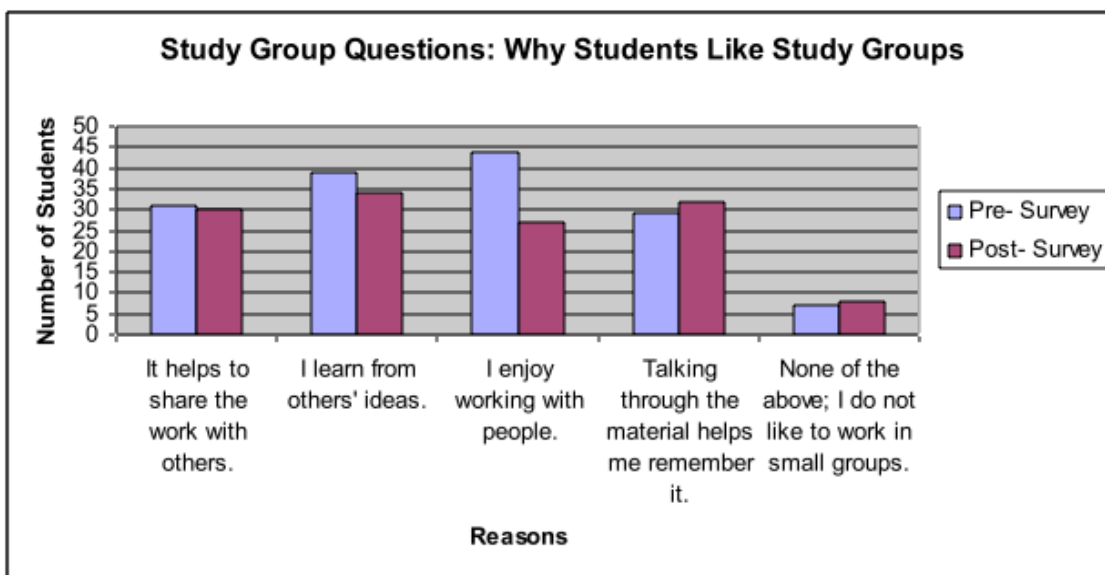


Figure 4. Numerical representation of the number of students who responded to each statement regarding why students like study groups.

Data gathered from the Study Group Questions included questions specific to students' thoughts about working collaboratively. A total of 54 students took both the pre-survey and post-survey and remained enrolled in AP U.S. History throughout the

intervention period. When this data is compared from the pre-survey and post-survey, it can be determined that student attitudes toward working in groups changed. In four out of the six reasons for students not liking study groups, a smaller number of students associated with that reason. In total, there were 61 selections for reasons to not like study groups in the pre-survey, but in the post-survey that number declined to 43. That is an approximate 30% decrease. These results suggest that after working in study groups during the intervention period, students had fewer reasons for disliking study groups.

In Figure 4, there was an increase in the number of students who responded that they like study groups because “Talking through the material helps me remember it.” Other categories decreased in the number of students who selected each reason, however. In total, there were 143 selections for reasons to like study groups in the pre-survey, but in the post-survey that number declined to 123. These results suggest that after working in study groups during the intervention period, students had fewer reasons for liking study groups. Based on this data it could be suggested that implementing a collaborative learning environment through study groups does not elicit more positive attitudes toward study groups, but it does decrease negative attitudes toward it. Additional research over a longer period of time would help to gain insight on this trend.

In each study session students were given materials and tasks necessary to meet certain learning targets and objectives. Students were placed in the groups that I preselected and continued to be in the same group throughout the intervention period. At the beginning of the study session, students were given a Group Evaluation Form. The form listed: the objectives, materials needed, action plan, group roles, group rules, and group goals. The form from each study session is contained in the appendix section of

this report. Students directions at the start of each class period described student outcomes and expectations for groups. Each study session lasted for the entire class period (55 minutes). In one study session, students worked through an outline for a Free Response Question (FRQ) and formed a thesis statement. In the second study session, students analyzed documents for a Document Based Question (DBQ) and then proceeded to complete an essay outline. For the third study session, student read two primary sources, answered comprehension questions, and summarized the sources. At the end of the study session, students completed an evaluation of each group member, answered five open ended questions, and evaluated the study session as a whole. Students participated in three group study sessions during the intervention period and thus completed three evaluation forms.

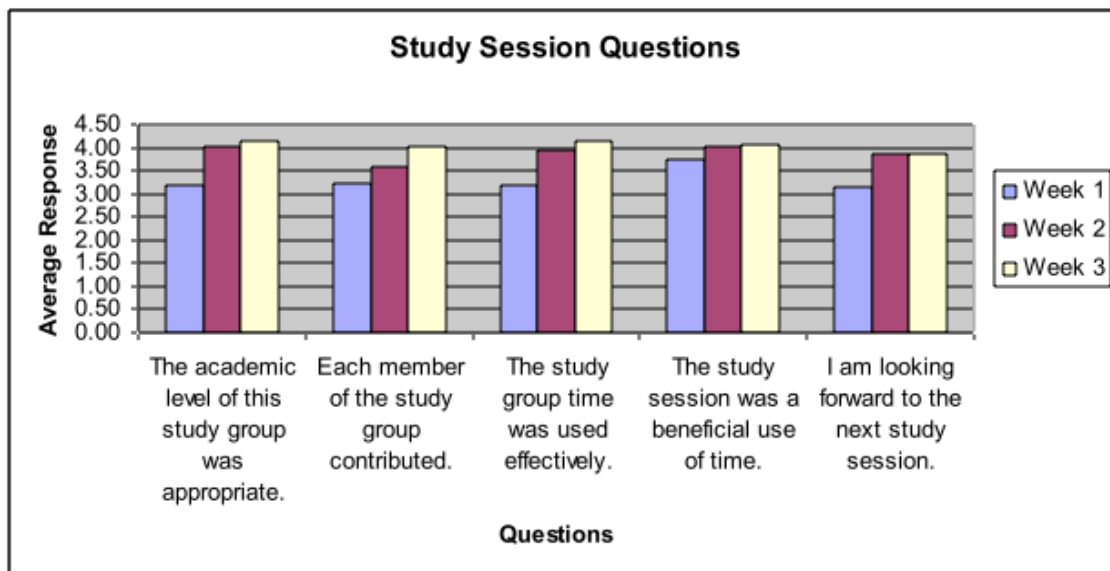


Figure 5. Degree to which students agreed with each of the statements over the course of three weeks

Students answered questions regarding the study group at the completion of each session. . For the study session evaluation, students rated five statements using the following scale:

1- Strongly Disagree

- 2- Disagree
- 3- Neutral
- 4- Agree
- 5- Strongly Agree.

These questions were found on each group evaluation form (Appendix D, E, and F). The largest change occurred from Week 1 to Week 2 but there were again increases in Week 3. The largest gains were seen in questions 1 and 3. It could be proposed that as students participated in collaborative learning and were held accountable they came to class more prepared for the study sessions and thus the time was utilized more effectively. This data suggests that as students work more in collaborative settings, they learn to how to improve the effectiveness of the study session as do their attitudes toward the study group.

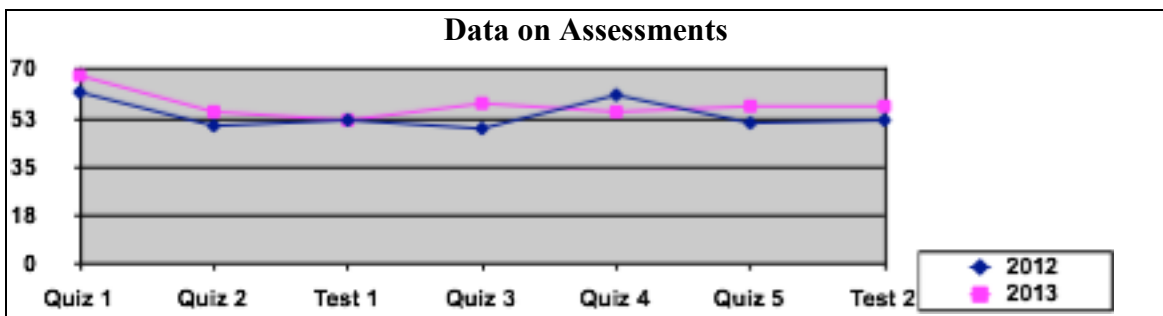


Figure 6. Graphical representation of student scores in a 100% scale in 2012 and 2013 on the assessments from Units 1 and 2.

Data on Assessments	Unit 1 (Pre Intervention)			Unit 2 (Intervention Period)			
	Quiz 1	Quiz 2	Test 1	Quiz 3	Quiz 4	Quiz 5	Test 2
2012	62	50	52	49	61	51	52
2013	68	55	52	58	55	57	57

Table 3. Numerical representation of student scores in 2012 and 2013 on the assessments from Units 1 and 2.

During the intervention period, students took three chapter quizzes and one unit test. The chapter quizzes were composed of 13 multiple choice questions with five answer options for each question. These questions are based on the textbook that students read at home for this course. The unit test was composed of 40 multiple choice questions with five answer options for each question. These questions were taken from previous AP US History exams and therefore had a higher level of difficulty than what students saw on their quizzes. Data collected from the quizzes and test was compared to student data prior to the intervention period and also to data from students enrolled in my AP US History course at St. Paul Area High School last year that took the same assessment. By comparing to the data from the previous school year, it may demonstrate the effectiveness of the implementation of the study groups.

Comparing data from 2012 and 2013 on the same assessments demonstrates growth in student achievement during the intervention period. In both years, the highest average was achieved on Quiz 1. I believe that this is primarily due to the timing and pacing of the course. Many students were given their textbooks prior to summer and were assigned to read the material for the first quiz before the first day of school. Students had significantly more time to read and understand the material covered on Quiz 1 than on any other assessment. In Unit 1 (pre intervention) students in 2013 had a 5-6% higher average percentage than in 2012 on the quizzes, but achieved the same average on the test. In 2012, students' scores in Unit 2 fluctuated with quiz scores ranging from 49% to 61% and then achieving the same average (52%) as they did on the previous test. I am curious to know what caused the significant improvement on Quiz 4. This quiz covered material on the American Revolution so students may have had increased background

knowledge and interest that led them to attain this higher than normal average. In 2013, students were much more consistent with their quiz and test scores. On all Unit 2 assessments, students scored between 55% and 58%. This consistency and overall increase could be an indication that the implementation of study groups did elicit positive effects on students' scores on objective assessments.

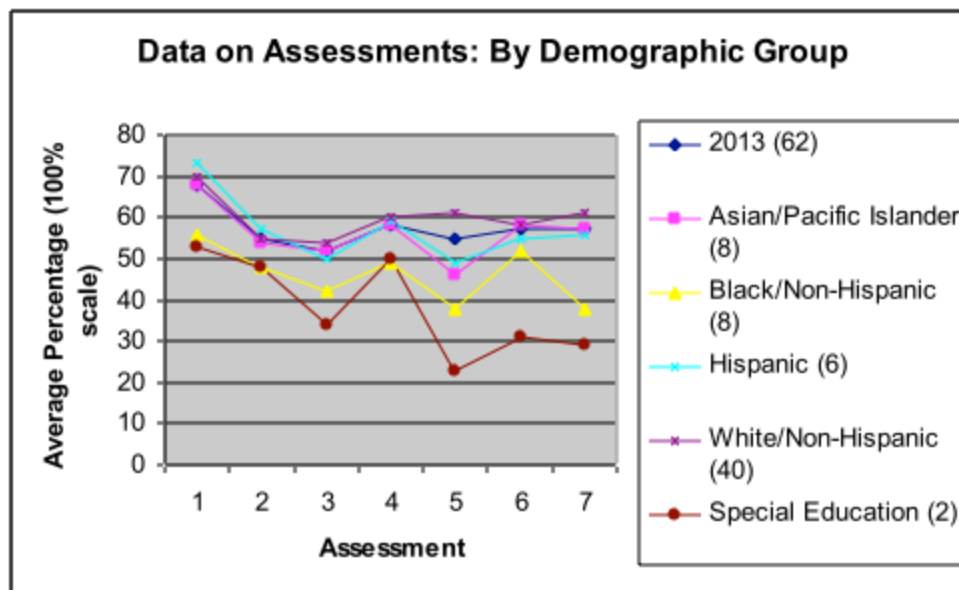


Figure 7. Graphical representation of student scores in 2013 on assessments by demographic group.

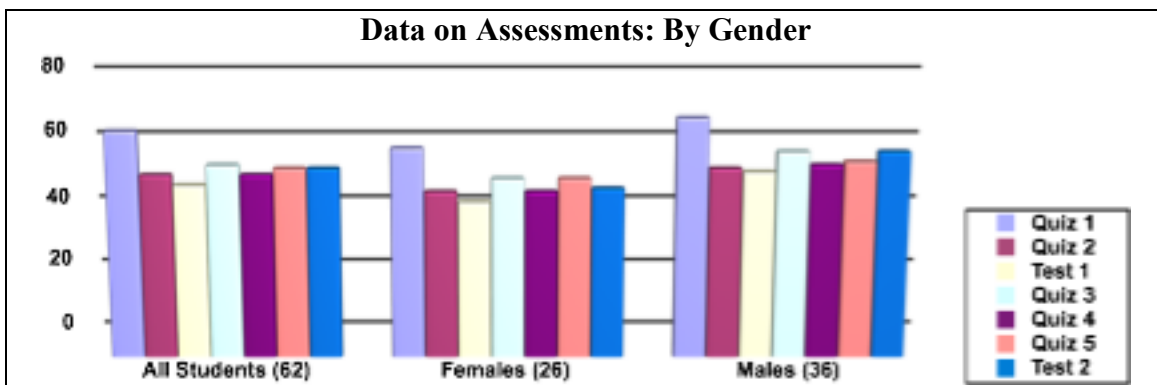


Figure 8. Graphical representation of student scores in 2013 on assessments by gender.

By breaking down the data on assessments by gender and race/ethnicity, corroborations to the previous indications that the implementation of study groups

elicited more consistency in scores can be made. For most groups (gender and race/ethnicity), students achieved higher overall averages in the Unit 2 assessments. Special Education students and Black/Non-Hispanic students did not maintain consistency or achieve higher overall averages in Unit 2.

Although this data does not definitively prove that collaborative learning led to improved scores on assessments, my personal observations and responses from students have led me to additional conclusions. The biggest change I saw with students during the intervention period was the amount of involvement I had as a teacher. In the first week, when a student had a question, they would raise their hand or call for me to help. I would direct them to utilize their group and with a little frustration, they would comply. As we continued working in groups, students learned how to work together and I became less and less involved in the group discussions. Another change that I noticed was the amount of off task behaviors. In the first week, many students were disappointed to find that they were in groups without their closest friends. Some students had a difficult time remaining with their assigned group or staying on task. As the weeks went on, I had to redirect students less and less. Students remained more focused and learned to work with their assigned group. I also noticed as the weeks went on that students accomplished more and more each week. During the first study session, many groups did not finish all the objectives. In the last week, many groups took out additional work after they finished their objectives. Some students took out their study guides that were due the next class period and used their group to work through some of the more difficult problems. This led me to believe that students may have found that working together was significantly more beneficial to their learning than trying to do it all on their own.

Student responses also demonstrated increased growth toward meeting learning targets and interacting in an effective collaborative learning environment. There were five open-ended questions on the Group Evaluation Form where I could gather more personal responses of students. The first question stated “What went well during the study session?” In the first week, almost exclusively students responded with answers similar to “We worked hard,” “We got the work done,” and “We all participated.” These answers were fairly basic and did not explicitly state positive aspects of the study session. In the next weeks, student responses to this question became more clear and specific. Student responses included:

- “We all helped each other to figure out what each of us had problems on.”
- “We built up on each others ideas.”
- “I learned more.”
- “The reading and comprehending.”
- “Everyone was prepared and contributed.”
- “We worked as a group (FINALLY).”
- “The brainstorming.”

These responses give a different perspective to the overall learning that occurred during the study sessions in my classroom.

We can learn a lot by analyzing data, but my personal observations and student responses give a more balanced and thorough picture of the success of collaborative learning. In parent-teacher conferences, many parents were curious about these study session. Parents had very positive responses to the idea of collaborative learning in the classroom. In conferences where students were present, students commented that they

often felt that they learned the most on study session days because of the accountability and ability to discuss content with other students. These positive comments are not easily evaluated on a spreadsheet but are worth considering when analyzing the overall success of the implementation of a collaborative learning environment.

Action Plan

By looking through the data analysis and personal observations, there are many conclusions that can be drawn from this study. One of the biggest concerns I have about the data I gathered in this study relates to the brief length of the intervention. Structured collaborative learning was only implemented three times during a short three week period of time. Based on my research, it is unclear if three weeks is even long enough for the groups to work effectively and to see conclusive results. The data analysis would be more compelling if the interventions had been carried out throughout the entire semester. Additional outside factors may have impacted the results. One such factor is me, as the teacher. Last year was my first year teaching the AP U.S. History course. As I have had a year of experience, I have more knowledge of the content of the course and am able to recognize student obstacles earlier. Another factor is the 9th grade Foundations course. Many students in the recent version of the course were placed in a Foundations course as freshmen to prepare for the rigor and challenge of college level courses. The students in AP U.S. History last year did not take this course as freshman. Another factor is the 10th grade Seminar course. Last year, the Seminar course was available to students to help them learn reading and writing skills that could help in college courses. Many Seminar students described the disconnect between Seminar and AP U.S. History. They did not feel that the Seminar course helped them to achieve success in AP U.S. History. This year, we aligned the Seminar course with the AP U.S. History curriculum. It is now seen as a support class and aids students in the work that they need to complete in the AP U.S. History course. Each of these factors may have also played a role in the data collected over the last two years.

The positive results in the areas of study group evaluations and data on assessments have motivated me to continue the practice of study groups and collaborative learning in my classroom. I am also inspired to implement study groups into my other courses as well. I am pleased with the initial results based on the improvement in student scores compared to last year, overall improvement during the intervention period, and student responses on attitude surveys and study session questions; but hope that as the groups continue to work together, they would become even more effective. As I observe students working in their groups, I have noticed: significantly better questions from students, an increase in the use of the textbook and other resources, improvement in the participation of all students, better preparation of students before class, and many students taking on leadership roles in their groups. As I think about students as learners, I recognize the importance of engaging them in the content and in the learning process. Each of these things happens organically and naturally in the study groups. It is much more difficult to maintain student interest and engagement in a lecture. Sometimes a lecture is necessary, but whenever possible, I am encouraged to incorporate a collaborative environment even if it is only for a portion of the class period.

This research will hopefully have a continued positive impact on student learning. Many students in my classroom have described how the study groups have helped them in the AP U.S. History course. Many students feel that they learn better by talking through the material with others. Many have also described how they feel that they will retain the information longer and have a deeper understanding of the content. Students have also appreciated the change in format. As students notice these positive effects, they may be more likely to initiate collaborative learning on their own time and with other

classes. Students that are enrolled in college courses at the high school level need a strong support system to aid them in achieving success. An effective study group that meets on a consistent basis can be the support system that students need.

I have presented my research findings and analysis of the data to the Social Studies Department at St. Paul Area High School and have had one teacher observe a study session in progress. Teachers have expressed interest and many asked for additional explanations, research, and handouts. Many seem interested in implementing collaborative learning in their classrooms as well and this will hopefully have a positive impact on the learning of even more students at St. Paul Area High School. With additional teachers incorporating collaborative learning, we can learn from each other and improve the learning experiences for students in each of our classes.

As I consider the research, implementation, student responses, and data from the interventions, I am motivated to continue my practice of implementing a structured collaborative learning environment.

New questions that I've identified for further consideration:

- Why did student attitudes decline?
- Will scores on multiple-choice assessments continue to increase?
- Will the student perception of the effectiveness of study groups continue to improve?
- How long does it take to establish an effective study group?
- Should student choice be considered when forming groups?
- How should Special Education students be grouped for maximum benefit?

- Why did African American students respond differently to collaborative learning than other demographic groups?

I plan to continue the implementation of collaborative learning and the collection of data to see if these questions can be answered.

As I continue through the semester, I will incorporate study groups once a week and continue to collect the same types of data. I will also give the attitude survey at the end of the semester. Next semester, I will consider allowing some amount of student choice when forming the study groups. At the end of each unit, I will compare and analyze the data collected. I hope to see continued improvement in student scores on assessments and to improve student attitudes from the original survey given at the start of the semester. This continued research will yield additional results that may lead to more profound, weighty, and insightful conclusions.

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Appendix

Appendix A

Student Attitude Survey

Student Information 2013-2014

Edit this fo

Please answer the following questions. These questions will be used to gather important information about the students enrolled in AP US History.

* Required

What hour do you have AP US History? *

- 4
 6

What is your first and last name? *

Attitude Questions

How well do you understand the purposes of AP Courses? *

1 2 3 4 5

Not at all Completely

How confident are you that you will be able to stay in AP US History all year? *

How comfortable are you sharing ideas during class discussions? *

1 2 3 4 5

Not at all Completely

How likely are you to ask a teacher for help if you are having trouble in class? *

1 2 3 4 5

Not at all Very likely

Do you have at least one person with whom you feel comfortable studying with for AP US History? *

- Yes
 No

Setbacks (delays and obstacles) don't discourage me. I bounce back from disappointments faster than most people.
*

1 2 3 4 5

Does not describe me at all Completely describes me

I have difficulty maintaining (keeping) my focus on projects that take more than a few months to complete. *

1 2 3 4 5

Does not describe me at all Completely describes me

I am a hard worker. *

1 2 3 4 5

Does not describe me at all Completely describes me

I often set a goal but later choose to pursue (follow) a different one. *

1 2 3 4 5

Does not describe me at all Completely describes me

I finish whatever I begin. *

1 2 3 4 5

Does not describe me at all Completely describes me

I am diligent (hard-working and careful). *

1 2 3 4 5

Does not describe me at all Completely describes me

Rate your interest in working in small groups. *

1 2 3 4 5

No interest Very interested

Which of the following is a reason you do not like to work in small groups? *

Check all that apply.

- I end up doing all the work.
- There is too much chaos/noise.
- I do not learn from small groups.
- It is uncomfortable to work with others.
- None of the above; I like to work in small groups.
- Other:

Which of the following is a reason you do like to work in small groups? *

Check all that apply.

- It helps to share the work with others.
- I learn from others' ideas.
- I enjoy working with people.
- Talking through the material, helps me remember it.
- None of the above, I do not like to work in small groups.
- Other:

Appendix B

Introduction to Study Groups

Study groups typically involve four to six students who meet weekly, sometimes more often, to share information, knowledge, and expertise about a course in which they are all enrolled. The study group environment offers students an opportunity to engage in a more in-depth discussion about course material. Students working in small groups typically learn more of what is taught and retain it longer than when the same content is presented in other instructional formats.

Conducting the Study Group

- Establish realistic goals for the meeting
- Decide the format for the session
- Assign roles to group members
- Set ground rules

In order for a study group to be useful, it is important that its members establish ground rules that create an environment of trust and respect so that all members feel their contributions are valued. When such an environment exists, members are more willing to take risks, to think more creatively and be more open, which leads to a deeper, richer discussion.

Group Rules

- Expect members to be prepared
- Avoid allowing the group to become a place for note-gathering
- Respect different viewpoints
- Create a safe environment by accommodating different learning/working styles
- Offer tactful comments
- Avoid allowing one or two people to dominate the group

Group Role Descriptions:

Facilitator: The facilitator is the guide or discussion leader for the group. They help their team get started and maintain organization, and making sure each person understands the task.

Task Manager: The time keeper keeps track of the amount of time spent on each activity in the session and makes sure pre-arranged time allocations in the agenda are followed. They also keep the team focused on the assignment of the day.

Gate Keeper: The gate keeper keeps communication channels open by encouraging every member to participate.

Note Taker: The note taker writes down suggestions, makes a record of group decisions, or writes down the product of discussion. The recorder fills the role of "group memory."

Appendix C
Week 1 Group Evaluation Form

Name:

Group Members:

Objectives:

- By the end of the study session, students will be able to describe the factors that resulted in the American victory in the Revolutionary War.
- By the end of the study session, students will have started their outline and thesis for the FRQ assignment.

Materials Needed:

- Textbook
- FRQ Core Structure Worksheet
- FRQ Description
- Ch 5 Lecture Notes

Plan:

- Step One: Agree on role assignments.
- Step Two: State group rules.
- Step Three: Establish goals for the study session.
- Step Four: Decide on a format.
- Step Five: Conduct study session.
- Step Six: Complete group evaluation form.

Group Roles:

Name	Role

Group Rules:

1. _____
2. _____
3. _____
4. _____
5. _____

Group Goals:

1. _____
2. _____
3. _____

Group Evaluation:

5	4	3	2	1
Very Good	Good	Satisfactory	Unsatisfactory	Poor

Name	Rating				
	5	4	3	2	1
	5	4	3	2	1
	5	4	3	2	1
	5	4	3	2	1
	5	4	3	2	1

1. What went well during the study session?

2. What could have gone better during the study session?

3. How could I improve my performance next time?

4. How could my group improve next time?

5. What instructions, materials, or activities would be useful for the next study session?

Study Session Evaluation:

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Study Session Evaluation	Rating				
The academic level of this study group was appropriate.	5	4	3	2	1
Each member of the study group contributed.	5	4	3	2	1
The study group time was used effectively.	5	4	3	2	1
The study session was a beneficial use of time.	5	4	3	2	1
I am looking forward to the next study session.	5	4	3	2	1

Appendix D
Week 2 Group Evaluation Form

Name:

Group Members:

Objectives:

- By the end of the study session, students will be able to describe the conflicts and compromises of the Constitutional Convention.
- By the end of the study session, students will summarize the ratification debates.
- By the end of the study session, students will have completed the core structure worksheet for the DBQ on the Articles of Confederation.

Materials Needed:

- Textbook
- DBQ Core Structure Worksheet
- DBQ Packet
- Ch 6 Lecture Notes

Plan:

- Step One: Agree on role assignments.
- Step Two: State group rules.
- Step Three: Establish goals for the study session.
- Step Four: Decide on a format.
- Step Five: Conduct study session.
- Step Six: Complete group evaluation form.

Group Roles:

Name	Role

Group Rules:

1. _____
2. _____
3. _____
4. _____
5. _____

Group Goals:

1. _____
2. _____
3. _____

Group Evaluation:

5	4	3	2	1
Very Good	Good	Satisfactory	Unsatisfactory	Poor

Name	Rating				
	5	4	3	2	1
	5	4	3	2	1
	5	4	3	2	1
	5	4	3	2	1
	5	4	3	2	1

1. What went well during the study session?

2. What could have gone better during the study session?

3. How could I improve my performance next time?

4. How could my group improve next time?

5. What instructions, materials, or activities would be useful for the next study session?

Study Session Evaluation:

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Study Session Evaluation	Rating				
The academic level of this study group was appropriate.	5	4	3	2	1
Each member of the study group contributed.	5	4	3	2	1
The study group time was used effectively.	5	4	3	2	1
The study session was a beneficial use of time.	5	4	3	2	1
I am looking forward to the next study session.	5	4	3	2	1

Appendix E
Week 3 Group Evaluation Form

Name:

Group Members:

Objectives:

- By the end of the study session, students will thoroughly complete the Chapter 7 Lecture Notes.
- By the end of the study session, students will read and answer the questions from the Constitutional Rights Foundation reading. (TURN IN)
- By the end of the study session, students will have read and summarized the two readings in The New Nations Takes Shape. (TURN IN)

Materials Needed:

- Textbook
- Ch 7 Lecture Notes
- Reading: The New Nation Takes Shape, 1763-1820
- Reading: Constitutional Rights Foundation

Plan:

- Step One: Agree on role assignments.
- Step Two: State group rules.
- Step Three: Establish goals for the study session.
- Step Four: Decide on a format.
- Step Five: Conduct study session.
- Step Six: Complete group evaluation form.

Group Roles:

Name	Role

Group Rules:

1. _____
2. _____
3. _____
4. _____
5. _____

Group Goals:

1. _____
2. _____
3. _____

Group Evaluation:

5	4	3	2	1
Very Good	Good	Satisfactory	Unsatisfactory	Poor

Name	Rating				
	5	4	3	2	1
	5	4	3	2	1
	5	4	3	2	1
	5	4	3	2	1
	5	4	3	2	1

1. What went well during the study session?
2. What could have gone better during the study session?
3. How could I improve my performance next time?
4. How could my group improve next time?
5. What instructions, materials, or activities would be useful for the next study session?

Study Session Evaluation:

5	4	3	2	1
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Study Session Evaluation	Rating				
The academic level of this study group was appropriate.	5	4	3	2	1
Each member of the study group contributed.	5	4	3	2	1
The study group time was used effectively.	5	4	3	2	1
The study session was a beneficial use of time.	5	4	3	2	1
I am looking forward to the next study session.	5	4	3	2	1