

Motivation, Achievement, and Middle School Boys

by

Blake Henry

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Abstract

The purpose of this study was to determine whether alternate teaching strategies helped to improve motivation and achievement in 7th grade boys. The study used a quasi experimental pretest/posttest design to determine and compare the effects on motivation and achievement produced by three teaching strategies: conventional lecture, lecture delivered through a computer, and group discussion. One instrument used to measure motivation in this experiment was a survey that measured student perceptions about the class. The other instrument used in this study was designed to measure achievement and consisted of two chapter tests that were adapted from the principal textbook used for the 7th grade Religion classes involved in this experiment. The study began in March 2009 and concluded in May 2009. The results of the study were compared to data gathered from September 2008 to March 2009. No significant improvement was recorded for motivation through the use of any teaching technique. There was significant improvement recorded in achievement for the experimental group through the use of group discussion, but no significant improvement was recorded when the experimental group was taught by lecture through the computer. Future research on these areas could involve a long term study on the effects of group discussion on motivation and achievement, as well as how other uses of technology can help to improve motivation and achievement in middle school boys.

CHAPTER I

INTRODUCTION

Overview

This study was designed to explore teaching strategies designed to improve achievement and motivation to learn among seventh grade students in an all-boys Jesuit school.

The investigator, who teaches classes in religion at the school, observed a loss of motivation to learn as the year progressed. Some students seemed to become less interested in the subject as the year progressed as indicated by a more frequent failure to complete homework, a drop in the quality of class work and homework, and a decline in class participation. Correspondingly, students' academic achievement appeared to decrease as well.

In reviewing research on ways to improve motivation, the researcher examined the work of Davis and Guthrie (2003). Their research found that middle school students are much more likely to be motivated by extrinsic factors. For example, they want to do well on tests and they are motivated by the desire to do well on tests. Connecting these findings to his work, the investigator reasoned that if students do not perceive a connection between their classroom activities, their homework, and their exam performance, then their desire to participate in class, the amount of homework they complete, and their preparation outside the classroom will decline as well. However, if students come to value the learning itself, their intrinsic motivation may increase and their study habits will improve.

The research question thus became 'How can the teacher best approach improving student motivation?' The investigator considered the typical interests and concerns of adolescents and sought ways of building those into instruction. The influence of peers is an important variable in learning. Cooper, Kamps, and Veerkamp (2007), for instance, found that

students who perform group work are much more likely to be focused during class and spend more time completing their assignments when compared to students who do not perform group work. There is also research to support the theory that the use of technology will improve achievement in the classroom, especially if the students are interacting with the technology and the technology relates to the content area. Lei and Zhao (2007) found this to be true in their study about how to combine the quality of technology use with the proper amount of frequency.

Statement of the Problem

The purpose of the study is to explore the effects of two teaching strategies, one employing computer presentations and the other group work, on student motivation and achievement in a seventh grade religion class.

Hypothesis

Students in the 7th grade Religion class experimental group, who will be taught through power point presentations with a tablet computer and through group work, will display no change in motivation to learn or achievement when compared to students in the control group who will be taught through lecture and notes on a white board.

Operational Definitions

Achievement

Two textbook chapter tests designed by the investigator were administered to treatment and control students as they finished each of the two chapters of material taught during the study.

Motivation

Motivation can be defined by a person's desire to achieve in a given situation. For this study, motivation was measured through a student survey. At the beginning of the study, students in both the control group and experimental group were issued surveys that rated the

teacher who performed the study. The purpose of this survey was to provide a measurement of student motivation. The survey was composed of two sections. The first section involved twenty statements. For these statements, students could select a box on the survey that expressed that they “Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, or Strongly Agree” with the statement that was being expressed. The second section of the survey involved three questions about the student’s satisfaction with the teacher and how the class was taught. Once both classes had taken their two chapter tests, both the control group and the experimental group took the survey again. The results from the two administrations of the survey were then compared.

Group Work

Group work was provided through a group worksheet which asked students to discuss certain topics as a group or to answer questions in their notebooks. All work was to be done together. If a question was asked that required a written answer, the answer had to be the same for every person in the group. While the students were completing the group worksheet, the investigator made sure that the students were completing the assignment and that each member was making an equal contribution by walking around the room and monitoring the groups.

Tablet Computer and Power Point Presentations

Lessons for the first chapter of the experimental group were taught by using a tablet computer. A tablet is a laptop computer that has a screen that is able to be turned over so the teacher can write on the screen. The image that is on the tablet screen is then projected onto the board for the class to see. Five power point presentations were used during this chapter. The teacher had the ability to make notes on the power points through the use of the tablet. The

students in the experimental group did not interact with the tablet computer during class. The tablet simply provided an alternate means of presenting the information to the class.

CHAPTER II

REVIEW OF THE LITERATURE

The literature review examines how student motivation affects achievement in middle school students. The first section discusses what the indicators of a motivated student are as well as factors that can negatively impact motivation. The second section examines the relationship between student motivation and student achievement. The third section investigates strategies to promote motivation through the use of technology and testing preferences.

Student Motivation

When examining motivation concerning students ages 10-14, it is important to understand the different types of motivation. Davis and Guthrie (2003) define motivation as intrinsic and extrinsic. According to Davis and Guthrie, intrinsic motivation concerns factors that come from within, such as “reading out of curiosity” (p.61). They believe that a student with high intrinsic motivation wants to challenge him/herself intellectually and perform homework and class work so he/she can learn and live up to the teacher’s expectations. Extrinsic motivation for a middle school student involves factors such as test performance and competition against other students (Ibid). Elementary students are more likely to be motivated by intrinsic factors than by extrinsic factors. However, Davis and Guthrie argue that when students enter middle school, they are much more likely to be motivated by extrinsic factors than by intrinsic factors. For a middle school student, his/her achievement level affects how quickly that student loses his/her intrinsic motivation. A high achieving student will have more intrinsic motivation than a low achieving student (Ibid).

In Davis and Guthrie’s 2003 study about how the motivation to read in elementary school students declines as they enter the middle school grades, students were asked to fill out a survey

and respond to prompts such as “In social studies, we discuss topics that I like to go home and read about,” and “I think reading is boring” (p.63). Students who participated in the survey ranged from Grade 3 to Grade 8, and answer choices on the survey included ‘A lot,’ ‘Sometimes,’ ‘Almost never,’ and ‘Never.’. The older the students got, the more likely they were to respond negatively about reading.

Davis and Guthrie (2003) also write about how students achieve motivation in the classroom, suggesting that if a teacher feels that achieving a high grade is the goal of the class, students will be motivated to learn only in order to achieve a high grade. This is an example of extrinsic motivation that may ultimately have a negative effect on learning. After all, one has to wonder how much information a student will understand and retain if he/she is only concentrating on getting a high mark.

Davis and Guthrie (2003) argue that in order for a teacher to promote the continuance of intrinsic motivation, learning for the sake of learning, is important that the teacher allows students and, in fact, gives students opportunities to make mistakes and learn from their mistakes. Further, it is also important to that the teacher reward effort and emphasize the importance of effort in a student’s grades. When a student receives credit for effort, that student can liberate him/herself from the fear of making mistakes and ultimately become more engaged in learning and classroom activity (Ibid).

Cooper et al. (2007) cite research that supports the fact that lack of achievement has a negative impact on motivation. If a student’s reading skills are poor, his or her performance in other subject areas will be poor and his or her overall academic achievement will be poor. This can result in a decrease in motivation demonstrated by criminal behavior, teenage pregnancy, drug usage, and higher dropout rates, according to Cooper et al.

Relationship between Motivation and Achievement

Cooper et al. (2007) present research based on elementary students who were tested after peer tutoring activities. Cooper et al.'s research found that students who received peer tutoring as their primary method of instruction in a given subject area spent more time focusing on their work and completing their activities and assignments and less time being distracted than students who had not received peer tutoring as their primary method of instruction in a given subject area.

Peters' (2004) research about keeping students more focused effectively found that achievement and motivation are directly linked. Over and over again, students exhibit higher levels of achievement when they are motivated and actively engaged. One way to increase engagement and motivation is to make the time spent on a specific task efficient and effective, according to Peters. Suggested methods to increase motivation include setting a routine, providing competition, implementing a rewards system, and promoting student character development.

Vermette (2009), in his book titled *Engaging Teens in Their Own Learning*, breaks the effort to increase student engagement down into eight steps. These steps included rewarding effort, ensuring complete understanding of important concepts, encouraging critical thinking skills, administering productive and timely testing, providing visual study guides, providing individual attention, teaching productive note taking in which critical thinking is employed, and providing fair assessments that assess material taught in class. By employing strategies that put these eight steps to use, teachers can improve engagement and motivation to achieve.

Cooper et al. (2007) also found research that suggests that students favor peer tutoring over standard teaching strategies, such as being taught by a teacher in a classroom setting and

working independently on lessons. Students claim to prefer peer tutoring because they perform more successfully on assessments.

Baker and White's (2003) experiment involved students from an eighth grade geography class who used a computer-based analysis tool called the G.I.S. and compared those students' self efficacy and attitudes with those same traits of students who used hard copy maps. Students who used the G.I.S. program were more successful in analyzing data and searching for patterns and trends and exhibited improved skills in processing. It is important to note that while achievement levels for students of both genders were equally improved, the female students' attitudes about the subject matter did not change despite their higher achievement scores, and the male students' attitudes improved significantly with greater achievement.

Cho, Hsieh, Schallert, and Schallert (2008) studied the use of technology to enrich the learning environment. They categorized goal orientations into three types. First is the mastery goal, which is in place when a student is successful at performing a task and he/she is then more willing to attempt new tasks. Secondly is the performance-approach goal. In this case, students want to do well in a task so they will be looked upon favorably by others. Lastly is the performance-avoidance goal; here, students are paralyzed by the fear of being judged by others and therefore avoid taking on new and more difficult skills.

Self-efficacy is defined by how a student perceives others' favorable judgment of his/her skills. Research has shown that self-efficacy is a factor of motivation and achievement, and therefore a factor of the type of goal a student sets. If a student has positive self-efficacy, he or she will exhibit great motivation and high academic achievement (Cho et al., 2008). Further, with positive self-efficacy, students have a greater tendency toward performance-approach goal

setting and less of a tendency to adopt performance-avoidance goals. As a result, students become reciprocally more highly motivated and more likely to achieve.

Cho et al. (2008) had sixth grade students answer pre-questionnaires on scientific knowledge, self-efficacy, and goal orientation. The science teachers put their students into groups and had them use a computer to solve a problem about the solar system. At the end of the three week section, the students answered post-questionnaires on scientific knowledge, self-efficacy, and goal orientation. Cho et al.'s results show that students scored higher on the post-questionnaire than the pre-questionnaire. Also, based on their answers, the students' scores on performance goal orientation and performance approach were lower on the post-questionnaire as compared to the pre-questionnaire. This means that the students felt more comfortable solving the problem about the solar system on the computer in groups than in the traditional classroom setting. Also, students weren't as worried about how their scores compare to their fellow classmates' scores when they used the computer to solve a problem in groups.

Lei and Zhao's 2007 study provides another example of how technology in the classroom can be used to motivate students to improve their achievement levels. The focus of this study was on combining quality technology use with the proper amount of frequency. Lei and Zhao discovered that often the technology that students use most frequently is not necessarily the most effective technology for learning. Their data proved that students achieved the most with and were the most motivated about technology that was geared to specific content and involved student interaction. In other words, students were most interested when actively engaged and participating in technology that was geared to pertinent material.

Strategies to Promote Motivation

Davis and Guthrie (2003) believe there are two ways to improve a student's motivation. They feel that a teacher must use the amount of intrinsic motivation that each student currently has to motivate him/her and also must try and build upon current levels and create new intrinsic motivation. According to their first suggested strategy, Davis and Guthrie advise the teacher to pique the student's interest in a specific subject by displaying or demonstrating a concrete example of the subject. Once a student's interest is engaged, the teacher then provides a variety of reading materials that pertain to the specific subject and related subject areas.

As for the second strategy, Davis and Guthrie (2003) suggest that the teacher creates and builds upon a student's motivation by using "internalization" (p.70). Through internalization, the student adopts an interest displayed by someone important in his or her life, such as a teacher, family member or friend.

Another strategy to promote motivation is peer tutoring. Cooper et al. (2007) cite an example of putting peer tutoring to use to increase achievement and therefore motivation. As stated above, a high achieving student will have more intrinsic motivation than a low achieving student (Davis & Guthrie, 2003). Therefore, if a teacher helps a student to improve his/her achievement, his/her motivation will increase. In Cooper et al.'s study, peer tutoring was put to use successfully to this end. Students paired with peers to complete lessons in vocabulary and oral reading. Pre and post test vocabulary tests were administered, rates of oral reading were timed, and the number of completed lessons was tallied. As a result of peer tutoring, students' vocabulary, comprehension, and oral reading rate increased by at least one grade level (Ibid).

According to Farkas (2003), another effective teaching strategy to promote motivation is multisensory teaching. Working with 7th graders in New York City, teachers employed the use

of a multisensory approach to different learning styles in teaching a lesson about the Holocaust. This was in contrast to lessons taught traditionally on the same subject. After the implementation of the treatment in Farkas' study, levels of achievement, attitude, empathy, and motivation were measured. Results demonstrated significant increases in achievement, attitude, empathy, and motivation as well as a significant gain in internalization of knowledge. These increases far exceeded results from traditional teaching on the Holocaust.

Cadle, Jones, O'Byrne, and Securo (2006) studied the implementation of merit literacy software as a teaching strategy for middle school language arts. Tests were conducted on middle school students as a general population, middle school students who were lower achievers, and middle school students in both rural and urban. The research concluded that the software gave students a choice over the amount of instruction, types of review, and order of lessons, and study results demonstrated significant increases in achievement levels and attitudes of middle school students.

In addition, standardized testing results of middle school students who were taught traditionally were compared to those of students taught by using the merit literacy program, the Integrated Learning System. Results illustrated higher gains in reading and mathematics scores for the middle school students taught with the Integrated Learning System (Cadle et al., 2006). Additional examinations of the achievement levels of lower level readers supported the findings of the two studies listed above. Ultimately, the more the students used the Integrated Learning System software, the greater their gains.

The Integrated Learning System program contributed to an increase in student achievement because those using the system were more actively involved in the learning process. As Davis and Guthrie (2003) point out, students who are high achievers are more likely to be

intrinsically motivated. When students are intrinsically motivated, they are more focused, more positive, and more enthusiastic than students who are not intrinsically motivated (Cadle et al., 2006).

Calhoun, Furlow, Houchins, Sartor, and Shippen (2006) provide another example of teaching strategies that increase achievement in middle school students. In Calhoun et al.'s study, two curriculums were employed. The first system, *Success for All*, implements the following teaching strategies: teachers working one on one with a student, members of the family working with students, and students working together. A second system, *Direct Instruction*, implements the following teaching strategies: “modeling” the correct response, “leading” students to give the right answer, and “testing,” which provides direct and timely counseling (Calhoun et al., p.323). Both of these strategies resulted in higher achievement scores for the students in the study. These strategies employed techniques which promote positive attitudes, direct focus, and high levels of engagement. The students were more motivated to learn and therefore achieved more.

The types of tests teachers administer can also be effective in promoting student motivation. Haines (2001) reviews one way in which the type of testing was used to promote achievement by teachers in Pocomoke, MD in 1997. In this study, teachers administered the standardized Maryland School Performance Assessment Program and broke it down into three sections. The test was given at three different points throughout the school year. After each test, the teachers examined the strengths and weaknesses of their students. Based on their results, they made adjustments to their curriculum. Improvements in achievement occurred after the use of this strategy. By taking this new approach, teachers were able to focus on improving the

success levels of their students, therefore increasing confidence levels and promoting the motivation to achieve.

In a study performed to determine the testing preferences of middle school students, both among students in the general population and those with disabilities, Nelson (2000) gave a questionnaire that asked students questions about what types of tests they preferred. The types of tests that were most favorable for the students in this study were tests that had open notes and open book tests. Additional tests most preferred by students included test with a multiple-choice format, those involving the use of a dictionary and calculator, and those with additional space for answers. Also, students expressed a desire for study questions and practice tests for preparation purposes. The types of tests that were least favorable for the students in the study were tests that were read to the students and tests that involved a lesser amount of questions or content. Additional tests least preferred by students were oral tests, computerized tests, large print tests, those that involved test taking skills taught, and those requiring personalized assistance with the directions for the test. To promote motivation for student achievement in class, it may be beneficial for a teacher to consider giving tests that students prefer.

Summary

This review of the literature has discussed the indicators of a motivated student, factors that negatively impact student motivation, the relationship between motivation and achievement, and strategies to promote motivation. Teachers can employ a variety of strategies to induce student engagement and focus, and foster improvement in motivation and achievement levels of students. The research shows a reciprocal relationship—that motivation has a strong correlation to achievement and achievement has a strong correlation to motivation. If a student is motivated, he/she can achieve his/her full potential.

CHAPTER III

METHODS

Design

This study used a quasi experimental design to compare the effects on the motivation and achievement of seventh grade religion students that were produced by three teaching strategies: conventional lecture, computer aided lecture, and group discussion.

Participants

Participants represent a sample of the 84 students enrolled in the seventh grade at a private Jesuit all-male middle-high school in the suburbs of a large mid-Atlantic city. The treatment group, representing an intact class taught by the investigator, included 21 students. Within this group there were 18 Caucasian and 3 minority students. The control group also represented an intact class taught by the investigator and included 21 students, all but one of whom was Caucasian. Students are predominantly upper-middle class.

Instrument

Two instruments were used in the study. The first, a survey of student perceptions about the class, was adapted from http://chs.matsuk12.us/admin/surveys/student_survey_of_teacher.pdf for this study. It included 20 items constructed on a five-point Likert-type scale along with three short answer questions about the teacher. The items related to standards for the class set by the teacher, teacher explanation, teacher presentation, measurement of achievement, approachability, respect, opportunities for student choice, communication, and support. The post test survey included all of the pre test survey questions but also included six additional questions about content, teacher

ability, and interest in the topic being taught during class. There are no published results for reliability and validity for the survey.

The second set of instruments, two chapter tests, were adapted from the principal textbook and administered prior to the implementation of the study. The textbook is written by Josaitis & Lanning (1998). Each instrument addressed the content taught in that chapter and included 10 selected response items, 10 brief constructed response items, and a single extended constructed response item. Items were drawn from the textbook, the lectures and presentations, and class notes. Following implementation of the study, a second chapter test covering the specific material presented during the study was administered. The formats of the pre-test and post-test were identical. There is no published reliability or validity for either instrument; however, the investigator will obtain and report on the results of administration of these instruments to comparable students not included in the study.

Procedure

The study began for the experimental group on March 24, 2009 and for the control group on March 25, 2009. Both groups met for 50-minute periods on alternate days until the two units of instruction concluded on May 20. Students completed the pretest during the first week of the study. With the exception of two school holidays lasting a total of 14 days, both groups received instruction during April and May. Instruction on the first chapter was delivered primarily in lecture mode for the control group whereas the treatment group received instruction through the use of a tablet computer. At the conclusion of that instruction, both groups took the same end-of-chapter test. Instruction on the second chapter was again delivered primarily in lecture mode for the control group with the treatment group working in groups to complete study sheets and discuss the information presented. At the end of this instruction, both groups took identical

chapter tests. The chapters on which the instruction was based were considered random samples of the content taught in the course.

Except for the computer use and group work, all classes followed similar protocols including a warm-up activity, homework check, and new instruction.

CHAPTER IV

RESULTS

There was partial support for the hypothesis that the mode of instruction affects student learning. Table 1 below describes the means and standard deviations of student scores on two end of chapter tests (Chapter 7 and Chapter 8).

Table 1: Class Performance of Treatment and Control Group Students

Treatment Group	N	Pretest Mean/ SD	Ch.7 Test Mean/ SD	Ch.8 Test Mean/SD
Experimental	21	446.80/33.94	87.52/10.88	100.33/ 6.50
Control	21	446.04/24.70	82.80/10.02	93.90/ 7.92

The null hypothesis that students who receive instruction via a tablet computer will not demonstrate greater achievement than students who receive instruction via traditional lecture was not rejected. As Table 2 shows, once differences between the groups attributable to earlier achievement were removed, there was no difference.

Table 2: Comparison of Treatment and Control Group Students- Ch.7 Test
Analysis of Covariance

Source of Variance	Type III Sum of Squares	df	Mean Square	F	Sig.
Pretest	1384.383	1	1384.383	18.020	.000
Treat	218.610	1	218.610	2.846	.100
Error	2996.093	39	76.823 ^b		

The null hypothesis that students who receive instruction through study sheets and

discussion will not demonstrate greater achievement than students who receive instruction via traditional lecture was rejected in the case of the first test. However, analysis of results of the second test, produced a different result. As Table 3 indicates, even when differences attributable to earlier achievement were removed, there was a significant difference between the treatment groups, favoring the experimental treatment.

Table 3: Comparison of Treatment and Control Group Students-
Ch.8 Test

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Pretest	277.855	1	277.855	5.939	.019
Treat- ment	424.771	1	424.771	9.079	.005
Error	1824.621	39	46.785 ^b		

*p<.01

The hypothesis that students' perceptions about the class would not change significantly during the treatment was not rejected.

Table 4 describes the mean and standard deviations of responses by the experimental and control group students to the perception survey.

Table 4: Class Perceptions Shown by Treatment Group and Time			
Treatment Group	Survey Administration	Mean	SD
Experimental (N=21)	Pre	69.90	8.79
	Post	72.82	10.78
Control (N=21)	Pre	77.94	6.75
	Post	74.63	11.54

Table 5 displays results of an analysis of variance performed on this data using three factors: group, time, and the interactions between the two. As Table 5 indicates, none of these sources of variance produced a significant effect on the scores.

Table 5: Analysis of Variance; Perceptions of the Class			
Source of Variance	df	MS	F
Group (Exper/Control)	1	453.69	2.49 (n.s.)
Time (Before/After)	1	<1	<1
Group X Time	1	181.83	1.97 (n s)
Error	71		

Hence, the hypothesis that student perceptions about the class are affected by participation in this alternate form of instruction was not supported.

CHAPTER V

DISCUSSION

The null hypothesis that students in the experimental group of the 7th grade religion class who were taught through power point presentations with a tablet computer would display no change in motivation to learn or achievement when compared to a control group who was taught through lecture and notes on a white board was not rejected. The null hypothesis that students taught through group work would display no change in motivation to learn or achievement compared to the control class was rejected.

There was no significant change in motivation of the experimental group from the pre survey results to the post survey results. Moreover, there was no difference between the experimental group and the control group for achievement when power point presentations were used. The null hypothesis was rejected when the experimental group was taught through the use of group work assignments while the control group was taught by lecture and class notes. As Table 3 of Chapter IV indicates, students in the experimental group scored significantly higher on their chapter test as compared to the students in the control group.

Implications of Results

In this experiment, there was no effect on motivation to learn for the students, regardless of the teaching technique used by the instructor. The results showed that there was not significant difference between the pre test survey results and the post test survey results for the experimental group or the control group. Therefore, the hypothesis was not rejected for this part of the experiment. When the students of the experimental group were taught via power point presentations whereas the control group was taught via lecture and class notes, there was no

significant difference in achievement between the two groups. Therefore, the hypothesis was not rejected for the part of the experiment either. However, when the students in the experimental group were taught via group work and the control group students were taught via lecture and class notes, the students in the experimental group showed significant improvement in achievement. The hypothesis that teaching the students in the experimental group via group work would not improve achievement compared to teaching students in the control group via lecture and class notes was rejected. Thus, whereas the use of a visual presentation mode versus traditional lecture and notes did not affect achievement, group work appeared to have some effect. Motivation for students in this experiment was not affected at all by either teaching style used for the experimental group. Achievement did not improve for the experimental group when they were taught through power point presentations, but it did improve significantly when they were taught through group work. Since the results showed that motivation probably did not play a role in improving their test scores, it is possible that the students improved their test scores because they learned the material more efficiently in class through group work rather than through lecture and class notes.

Threats to Validity

This experiment had several threats to validity that might have affected the results. First, the scores for the chapter tests in this experiment were slightly inflated due to the use of extra credit by the instructor. The pre test chapter tests all included one extra credit question that was worth five percentage points. The post test chapter tests also included one extra credit question. The chapter eight test included two opportunities for extra credit for a total of ten possible extra credit points. Whether or not each student was awarded extra credit in the pre tests and post tests was not reflected in the results.

The second threat to validity was the interruption of the study by spring break. Easter break for the study school, which lasted for ten days, occurred while students in the experimental group were being taught via group work and also before the post test survey. This break could have affected the post survey results and the scores on the chapter eight tests for students in both groups.

The third threat to validity could have been attributable to the instructor favoring one group over another group. The teacher during this experiment was the person performing the experiment. It is possible that he wanted the results of the experimental group to improve in order to reject the hypothesis. Therefore, he might have favored the experimental group's classes. For example, he could have approached their classes with more energy than that which he brought to the control group's classes.

A fourth threat to validity concerns the generalizability of findings. Since each treatment was associated with just one unit of study, it was impossible to distinguish between presentation mode and "content" or to identify any interaction between the two (i. e. one type of presentation is more effective with a specific content area).

A fifth threat to validity involves the sample used during this experiment. Since a convenient sample was used, there could have been an uneven amount of highly motivated students in one group as well as an uneven amount of high achieving students in one group. The same can be said for poorly motivated students and low achieving students. Even though the results for both groups did take into account prior differences in achievement and motivation, it is still possible that this affected the results.

The final threat to validity during this experiment was the fidelity of implementation of the tablet computer instructional model. The tablet computer was designed to enable the

instructor to teach his class via power point presentations at the front of the classroom. The tablet computer experienced problems connecting to the wireless projector at an early stage in the experiment; therefore the instructor used the mouse on his desktop computer to teach the lessons to the experimental group via the power point presentations. This caused him to stay behind his desk for the majority of each class. Had it been working properly, the tablet computer would have allowed him to watch his students more effectively and also his students would not have to turn around to the back of the classroom to see him.

Similar Research

Part of this experiment is very similar to the study performed in 2003 by Davis and Guthrie. They also used a survey for middle school students that examined motivation. Their findings found that as middle school students got older they were more likely to respond negatively about reading. If age has an effect on motivation to learn in middle school students, this also could prove to be a threat to validity in this experiment.

The improvement made in achievement in the chapter eight tests for the experimental group can be supported by research performed by Cooper et al. (2007). Their research found that students who were taught through the use of peer tutoring spent more time focusing on their work and completing their activities and assignments and less time being distracted than students who had not received peer tutoring as their primary method of instruction in a given subject area. They also found that students preferred peer tutoring because they performed more successfully on assessments.

Even though the teaching method that involved technology did not prove to help improve motivation in this experiment, other studies have found that technology can improve motivation in middle school students. Baker and White's (2003) experiment involved students from an

eighth grade geography class who used a computer-based analysis tool called the G.I.S. and compared those students' self efficacy and attitudes with those same traits of students who used hard copy maps. Students who used the G.I.S. program were more successful in analyzing data and searching for patterns and trends, and exhibited improved skills in processing.

Implications for Future Research

Results from this study showed that teaching middle school students via group work may help improve achievement. Since most research on the topic of group work or peer tutoring is positive, it would be interesting to perform research on the long term effects of peer tutoring compared to the traditional teacher and student methods.

Even though achievement for this experiment was not improved by the experimental group when they were taught via the use of power point presentations, it would be beneficial to know which techniques involving technology did help to improve achievement as well as motivation.

The results for this experiment showed that motivation was not affected by the teaching techniques of the power point presentations or the group work. However, during the experiment the instructor observed a much more favorable response to group work than any other teaching technique he had used throughout the year. It is possible that group work would improve motivation to learn in high school students studying religion. Further work on this topic is indicated.

References

- Baker, T., & White, S. (2003). The effects of G.I.S. on students' attitudes, self-efficacy, and achievement in middle school classrooms. *The Journal of Geography, 102(6), 243-264.*
- Cadle, C., Jones, J., O'Byrne, B., & Securro, S. (2006). Making the cut: The impact of an integrated learning system on low achieving middle school students. *Journal of Computer Assisted Learning, 22, 218-228.*
- Calhoun, M., Furlow, C., Houchins, D., Sartor, D., & Shippen, M. (2006). The effects of comprehensive school reform models in reading for urban middle school students with disabilities. *Remedial and Special Education, 27(6), 322-328.*
- Cho, Y., Hsieh, P., Schallert, D., & Schallert, M. (2008). Examining the interplay between middle school students' achievement goals and self-efficacy in a technology-enhanced learning environment. *American Secondary Education, 36(3), 33-50.*
- Cooper, L., Kamps, D., & Veerkamp, M. (2007). The effects of class wide peer tutoring on the reading achievement of urban middle school students. *Education and Treatment of Children, 30(2), 21-51.*
- Davis, M., & Guthrie, J. (2003). Motivating struggling readers in middle school through an engagement model of classroom practice. *Reading and Writing Quarterly, 19, 59-85.*
- Farkas, R. (2003). Effects of traditional versus learning-styles instructional methods on middle school students. *Journal of Educational Research, 97(1), 42-51.*
- Haines, S. (2001). Signs of success. *The Science Teacher, 68(2), 26.*

Josaitis, N., & Lanning, M. (1998). *New Testament: A course on Jesus Christ and His disciples*. William H. Sadlier, Inc., New York, New York

Lei, J., & Zhao, Y. (2007). Technology uses and student achievement: A longitudinal study. *Computers and Education, 49*(2), 284-296.

Nelson, J. (2000). Student preferences for adaptations in classroom testing. *Remedial and Special Education, 21*(1), 41-52.

Peters, E. (2004). Maximize student time on task. *Science Scope, 28*(1), 38.

Vermette, P. (2009). *Engaging teens in their own learning: 8 keys to student success*. Larchmont, NY: Eye on Education.

http://chs.matsuk12.us/admin/surveys/student_survey_of_teacher.pdf