ACADEMIC ACHIEVEMENT IMPACT OF PROJECT CHOICE IN A 1:1 CLASSROOM

A Thesis Presented to the Faculty
of
California State University, Stanislaus

In Partial Fulfillment
of the Requirements for the Degree
of Master of Art in Education

By
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December 2017

CERTIFICATION OF APPROVAL

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DEDICATION

I dedicate this study to my parents. Mom and dad, you have stood by me through it all and make sure I never give up on any of my dreams. Thank you for always listening when I need to rant and for watching my dogs when I need a to get away for a weekend. Love you!

ACKNOWLEDGEMENTS

I would like to acknowledge my friends, including those who are not teachers but yet still listen to my constant teacher talk. Thank you all for the support and encouragement. You will soon never have to hear the word thesis again!

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ABSTRACT

The purpose of this study was to examine the impact the choice of a project had on student achievement and also to examine if students who chose a technology based project would have higher achievement than those who chose to do a non-technology based project. Junior high students from a Central California school participated in this study from four different seventh grade classrooms. Results showed that there was no significant difference in achievement based upon project medium, technology based or not, nor was there any difference based on whether students were told which project to complete versus having a choice. Results are presented and discussed.

CHAPTER I

INTRODUCTION

Producing students who are capable and college and career ready is the main idea behind the Common Core State Standards (CCSS). The CCSSO (Council of Chief State School Officers) and the NGA (National Governors Association) Center for Best Practices organized a state-led effort to create new standards for the United States in 2009 (Common Core State Standards Initiative, n.d). States were given the option to adopt the standards and as of April 2016 42 states, along with the District of Columbia, had adopted them. California adopted the standards on August 2, 2010 and they were to be fully implemented in each school in the 2014-2015 school year. According to the Common Core website, the standards are:

> Research- and evidence-based; clear, understandable, and consistent; aligned with college and career expectations; based on rigorous content and application of knowledge through higher-order thinking skills; built upon the strengths and lessons of current state standards; informed by other top performing countries in order to prepare all students for success in our global economy and society (Common Core State Standards Initiative, n.d., para 6).

The standards are meant to prepare students for their future by having them use critical thinking skills that will help them produce evidence-based answers, full and complete thoughts, and be able to communicate with others effectively.

The Common Core State Standards were created especially for Math and English Language Arts; the other content areas have not yet had new standards developed that align with the Common Core. History/Social Science classes in California are still using standards that were adopted in 1998 (California Department of Education, n.d.). The standards cover each year of instruction for world and US history, highlighting important figures, and teaching students the rights and obligations of upstanding citizens (California Department of Education, n.d.). Each set of grade level standards has specific historical events, important individuals, and geography content that is required for teachers to teach. Seventh grade history, for example, has 11 essential standards and 61 sub standards that are to be taught throughout the school year. The creators of the History/Social Science standards hoped that by mastering all of the standards each year students will become critical thinkers that are ready for the 21st Century (California Department of Education, n.d.).

All of these standards are developed with a level of academic achievement that students will, hopefully, be able to reach. According to Oxford Bibliographies "Academic achievement represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university" (Steinmayer, Meibner, Weidinger, Wirthwein, 2014, para. 1). Yet the definition of academic achievement can change depending on what a teacher is trying to measure; maybe a teacher wants to know how well a student has mastered content knowledge,

or perhaps is trying to measure the critical thinking skills of said student. In the everyday school environment teachers decide what a student will do to show mastery of the content. The teacher, or group of teachers, develops the assessments that will measure the mastery of content knowledge, or critical thinking skills, and students complete the assessments in hopes that they will reach the level of achievement to get them a passing grade.

The state of California also measures the academic achievement of its students. In the past this was accomplished using STAR testing that measured the level of students in history, math, science, and language arts. As of 2013 the state of California introduced the California Assessment of Student Performance and Progress (CAASPP), sometimes referred to as the Smarter Balanced (SBAC) test. This test does not measure specific content knowledge but instead measures a student's ability to think critically, using multiple skills gained throughout the year. The ability to think critically is thought to be a very important attribute and ability of those who are soon to be entering college or a career (California Department of Education, n.d.). These computer based tests were designed the meet and measure the achievement based on the Common Core State Standards, so they are focused primarily on English Language Arts and Math. The creators of the exam have determined benchmarks of achievement based on points earned. The achievement levels are: standard not met, standard nearly met, standard met, and standard exceeded (California Department of Education, n.d.).

The CAASPP is not a standardized test given to students with fill in bubbles with number two pencils. The test is given to students on the computer. Many schools, in an attempt to not only prepare students to take the CAASPP on the computer but also to try and bring themselves into the 21st century, have decided to go 1:1. The ratio of 1:1 is one student to some type of technology; for example each student might receive a laptop, Chromebook, or iPad. Technology shapes the world today. Technology is present everywhere. Cell phones, smart cars, TVs, and even some refrigerators now have screens on them. It is now up to the schools to be able to prepare the students for this technology-forward world. Teachers are now faced with incorporating technology into their instruction of their specific standards. No official technology standards have been adopted by the state of California, as of yet.

Statement of the Problem

Common Core State Standards, the state of California History/Social Science standards, academic achievement and 1:1 may seem like they don't really have much to do with each other. But that is not the case. It is the job of the history/social science teacher in a 1:1 setting to not only teach the state standards but to also incorporate the Common Core into their curriculum, and eventually measure the students' level of achievement. Many content rich teachers are struggling to incorporate the CCSS into their classroom while ensuring that their students reach the desired level of proficiency. Teachers have many different ways they can measure a student's proficiency, and giving the students a choice on how they demonstrate their ability may give teachers more ways of incorporating the CCSS into their content

classrooms. How students demonstrate proficiency can take on many different forms: tests, essays, projects, reports, and demonstrations of skill (Guskey, 2015, p. 17). Allowing students to do projects instead of take tests to demonstrate mastery has demonstrated that students can be proficient, sometimes even outperforming those students who take tests (Cervantes, Hemmer, & Kouzekanani, 2015, p.62). This study examined one approach incorporating the use of technology into the CCSS and the regular social science content standards. This study specifically examined the achievement of students who were either given a choice of how to demonstrate mastery compared to the achievement of students who were required to comply with a teacher-directed performance option.

Significance of Study

Teachers of all content areas are responsible for incorporating the Common Core State Standards into their curriculum. Many teachers struggle with what content lessons including the Common Core State Standards will look like in their lessons and assessments. This study will hopefully start to provide some answers on how to incorporate technology into the CCSS and content rich classrooms while still being able to reach achievement proficiency in history. Teachers are likely to learn different ways in which technology can be used by students to show their mastery of a standard, and not just depend on the results of tests. Giving students the choice of how they will demonstrate proficiency may give them better opportunities to learn, and the teacher more ways to assess student understanding, especially with the introduction of technology into the classroom.

Research Question

In a 1:1 setting, how does the choice of a project, technology based or traditional, impact student achievement?

Hypotheses

H1: Most students will choose a technology based project.

H2: Students who choose a technology based project will have higher achievement than students who choose a more traditional project.

H3: Students given the choice of a project have higher achievement than those who are told what project to do.

Theory

It is pretty well known that everybody learns differently and at different speeds. Unfortunately, in the traditional classroom the ability to learn at one's own pace in one's own way is not always possible. There are many different standards that need to be taught, and there are established testing dates by which every student is supposed to be able to show his or her knowledge of those standards. The process of learning does not just happen by a student sitting in class listening to the teacher speak; there needs to be more interaction between the student and the information (Steffe & Gale, 1995, p. 5). According to Fosnot (2005) constructivism is a theory that explains how students learn and how they come to know information. This theory suggests that students will not learn information just by being passive in the learning process they need to interact with the information (Piaget, 1969, p 156). Based on this theory, traditional instruction will not address the needs of all learners. Having all

students learn exactly the same way, completing every single lesson exactly the same way, is not consistent with the constructivist view of education. In a constructivist classroom, students are given choices and freedom in their learning. They get to choose how they would like to learn the information and/or how to demonstrate their understanding. This approach "...gives learners the opportunity for concrete, contextually meaningful experience through which they can search for patterns; raise questions; and model, interpret, and defend their strategies and idea" (Fosnot, 2005, p. ix). Traditionally classroom teachers measure the knowledge of their students at the end of a unit through an assessment. Assessments tend to take on the form of a test. Tests generally give the option of one response per question. If a test question is designed in such a way that is confusing, or not at the level a student is able to understand, the student will not be able to demonstrate their knowledge (Vgotsky, 1978, p. 88). A constructivist approach allows students to choose how they will demonstrate learning, hopefully a way that will be suited to them.

Constructivism applies to this study in that the students got to choose the format of a project. The students received the same instruction up until the end of the unit, but at the end of the unit they were given six different options on how to complete their final project. This allowed for the students to develop their full understanding of the topic in their own way, as consistent with a constructivist approach.

Definitions

Achievement: level of performance

Content areas: classes such as history/social science, science, math, and language arts.

Constructivism: a theory -- based on observation and scientific study -- about how people learn. It says that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences (Educational Broadcasting Corporation, 2004).

Proficiency: Level at which a student shows mastery of an idea/standard/skill.

Standards: What the state has decided students are to know in a subject area before the end of the school year.

Technology based project: any project that is created using technology. Examples could include online posters, slide shows, videos, and typed essays.

Traditional project: any project that is created without using technology. Examples could include hand written essays, posters, diagrams, trifolds.

Summary

This chapter discussed the way technology is impacting education. Students are beginning to use technology in many aspects of their lives. It also discussed how teachers are struggling to incorporate the Common Core into content classrooms. By bringing technology into the classroom teachers will have more opportunities to incorporate the Common Core into their lessons. Allowing students different ways to show mastery of standards by using technology may show educators that more students do in fact understand the information that has been presented to them.

CHAPTER II

REVIEW OF LITERATURE

In classrooms today students are under tremendous pressure to perform at higher levels using more tools than have ever been available to students before. Students are expected to know how to complete many different tasks using whatever technology is available to them. Keeping all this in mind while doing research for this study, two main themes emerged from the literature: student choice and how technology impacts students.

Student Choice

In a normal everyday classroom students are told what assignments to complete. Patall, Cooper, and Wynn (2010) conducted a study in order to see how student choice impacted student motivation as well as academic achievement. They conducted their study across two high schools, with 207 ninth through twelfth grade students who volunteered to participate (parent permission was obtained). Over 4 weeks the six participating teachers in many different subject areas taught two different units in which they randomly selected students to have a choice in their homework or told the students which homework assignment to complete.

The authors collected a lot of data over the 4 week process, starting with a survey to get to know the students. Data also included administering the intrinsic motivation inventory twice, homework assignments, and unit test scores. What Patall et al. discovered is that students enjoyed the homework more when they had a choice

($t = 2.83$, $p < .05$), would complete more homework ($t = 1.81$, $p < .10$) and were more likely to do well on the unit test ($t = 2.12$, $p < .05$). Students who had a choice about homework did not seem to feel any less pressure about completing the homework and the effort level did not seem to vary from among those who did not have a choice.

In another study conducted by Yamzon (1999), student choice was again the focus. She wanted to know what happened to student achievement if students were given a choice of a project in a project based learning classroom. Yamzon conducted an ethnographic study and interviewed 10 different teachers. These teachers were from four different schools in two different districts, all within the same area. The interviews consisted of five different open-ended questions.

Yamzon found that most teachers thought student achievement increased with the choice of a project. Teachers perceived that students were more invested in their assignments and gave more effort when they chose what to submit. One teacher even stated that a student who before had done poorly in school, was drastically improving and even showing more confidence in his achievements as a result of project choices (Yamzon, 1999).

A third study conducted by Patall, Cooper, and Robinson (2008) was a meta-analysis of 41 different studies about student choice to see the impact of choice on motivation. For inclusion in the meta-analysis, the studies had to focus on the manipulations of choice, had to measure intrinsic motivation, had to include at least one control group and one experimental group, and they had to be from the United States or Canada and include typical populations.

What researchers found was that choice does have an impact on motivation (Q (45) = 146.30, $p < .001$), as well as on effort ($d = 0.22$, $p < .001$), performance ($d = 0.32$, $p < .001$), and perceived competence ($d = 0.59$, $p < .001$). But, as noted by the researchers, the studies included in this analysis were all short term, and they recommended that a further study be conducted that would test for the impact of choice over a long period of time.

In 2003, Flowerday and Schraw conducted two experiments in order to test two theories about students' choice. The first theory, ECE or Enhanced Cognitive Engagement, suggested that choice would increase cognitive engagement and learning because students are more motivated. The second theory, EAE or Enhanced Affective Engagement, proposed that because of choice attitude and effort will be increased. Flowerday and Schraw tested both theories in two separate experiments. The first experiment involved 84 college undergraduates (46 women and 38 males) who were required to participate as a part of one of their courses. The participants all had to read a 900 word story and then were split into a group given a choice of an assignment or were told what they would do. In this quasi-experimental study some students were randomly selected and others were assigned to a group. The second experiment also took place in an undergraduate college course and included 87 students (54 women and 33 men). This experiment was similar to the first, but after the story the students completed a multiple choice test and wrote an essay. The participants were randomly assigned to one of two group; one group was led by one of the researchers and the other group was self-paced. The group that was self-paced

was told to work at a pace comfortable to them while the group that was led by the researcher worked all together at the pace the researcher set.

The results of the first experiment showed that when given a choice people chose what they were more interested in. After conducting an ANOVA researchers found that choice did not have an impact on cognitive engagement ($t(43) = 1.96$, $p = .05$). Another 2x2 ANOVA showed that choice did have a small influence on affective engagement ($F(1, 80) = 7.87$, $MSE = .0963$). Those in the no-choice group actually reported working harder than those in the choice group. In the second experiment researchers found that those in the self-paced group finished about 19 minutes faster than those in the researcher-paced group ($t(43) = 24.76$, $p < .001$). An individual t-test revealed that those in the researcher-paced group actually engaged in deeper cognitive processing than those in the self-paced group ($t(85) = 2.64$, $p < .01$).

Technology's Impact on Students

Shapley, Sheehan, Maloney, and Caranikas-Walker (2011) conducted a study to find out the impact that technology has on students, teachers, and schools, emphasizing the impact on student achievement. They included schools that were 1:1 with technology and others that were not. The participants were from 42 different schools across Texas that had similar demographics between the control and treatment schools. The schools were broken up into two different cohorts with over 5,000 students in each cohort.

The study authors collected a lot of different data, starting with surveys taken by all the students, which included things like students' proficiency with technology

and technology use in classroom activities. Data about students' attendance and discipline were also collected. The final aspect of the research was on student achievement. The authors collected data from state standards testing. The results did not show much advantage for the students with the laptops on their state testing, but those students did have less disciplinary issues and had an easier time navigating computers than the non 1:1 groups (Shapley et al., 2011).

A different study focused on the achievement of English Language (EL) learners who used computers (Keengwe & Farhan, 2014). Keengwe and Farhan wanted to compare the achievement of EL students who had access to computers in the classroom and EL students who did not. Two charter schools in Minnesota were selected to participate in the study; only one of the schools gave computers to all of the students while the other school did not give computers to its students. Both schools had very similar demographics.

The data were the scores of state testing in the areas of math and readings for the two years the study was conducted. The students who had access to computers did better than their counterparts who did not have access to computers (Keengwe & Farhan, 2014). Students at the school that received the computers were more proficient in reading by almost 30% (63.04% versus 34.66%), and in math by over 40% (57.55% versus 11.97%) in the first year of the study. Results were similar in the second year of the student as well.

A PhD student, Lisy, conducted a study in 2015 in order to examine if the use of computers impacted students revisions on a writing piece. The study consisted of

four second grade classrooms at two different schools (three from one school and one from the other) with a total of 74 students. The students came from middle class families in a Midwestern city, and were mostly Caucasian. The students had previously been taught how to revise, and also had previously been taught how to use Microsoft Office to revise.

After randomly selecting if the class would participate in a paper revision and then a computer revision or a computer revision and then a paper revision, Lisy compared the data using a Wilcoxon Signed-Rank test in order to see if there was a significant difference in the number of revisions made between those who used pen and paper versus those who used a computer. What she found was that those who used the computer (M = 20.00, Mdn = 18.52, SD = 10.23) made significantly more revisions than those who did not use the computer (M = 9.56, Mdn = 7.14, SD = 6.85), z = -5.76, $p < .05$.

In the fall of 2009 Bye, Smith, and Rallis conducted a study in which they were interested in finding out if students would be more satisfied and learn more if they participated in online discussion with peers versus turning in a written response and getting feedback from only the instructor. The study took place at a college and 25 graduate students participated (ages ranged from 21-44). The students were in two separate sections of the same class that was led by the same instructor. Both classes met once a week for 3 hours each time. Weekly readings were assigned and students were expected to turn in responses to these readings. Bye et al. put two pieces of paper into a hat and randomly selected which class would participate in online

discussions in response to the weekly readings and which class would turn in a hard copy to the instructor.

The students were given a pre and post test in order to test what they knew about the content before and after the study was conducted. The results showed that the students who participated in the online discussions actually obtained more knowledge than those who turned in hard copies of the responses, $t(10) = 2.7$, $p = .001$ compared to $t(12) = 2.3$, $p = .001$.

Summary

Giving students a choice in what they will be completing in an assignment has been demonstrated by these studies that participation and achievement increases. Not only are students more engaged and more interested in what they are doing, but even teachers noticed that students who put the bare minimum into their work would work harder when the choice of assignment was made by them. Choice can be a tool that teachers use in order to help their students reach their academic goals.

Technology has made an impact on the classroom. Teachers use it to help them plan lessons but now it is being used by the students as well. The studies previously discussed show that technology can be a tool that can help increase students' achievement and motivation to participate.

CHAPTER III

RESEARCH DESIGN

This chapter gives a description of the study. There were four classes that took part in the study over one instructional unit of study. The students were taught about Feudalism in Medieval Europe and then they were given options for end of the unit projects. The students' achievements was then measured using a rubric. This chapter describes details of the study.

Sample

This study took place in a junior high school classroom in Central California. The school is mostly Hispanic/Latino (71%) with the next largest group being Caucasian students (20%) (Ed Data, 2017). Four classes were included in this study with 27.5 being the average number of students in each class. See Table 1 for details regarding the demographics of the classes.

Table 1
Demographics of Classes Participating in the Study

	% Male	% Female	% EL	Total Number
Control 1	48%	51%	28%	29
Control 2	53%	52%	35%	31
Treatment 1	44%	56%	32%	25
Treatment 2	52%	48%	22%	27

Treatment 1 and treatment 2 classes were given multiple options of project choices while control 1 and control 2 classes were told which project they would be creating. The same teacher taught all four of the classes. In control 1 and treatment 1 classes, a paraprofessional who aided with certain students' learning joined the teacher in the

class. Classes at the junior high are 44 minutes long, and the instruction for this unit took 3 weeks. The school district where the study took place went 1:1 in the 2015/16 school year.

Methods

All of the classes received the same instruction throughout the Medieval Europe feudalism unit, that occurred in the fourth quarter of the school year. The lessons throughout the unit include Direct Instruction lessons (notes on how feudalism made its way to Europe, the different social classes), a stations activity comparing Japanese and European feudalism, and activities and quizzes along the way. No homework was given to any of the classes; all of the assignments took place in class. At the end of the unit students in treatment 1 and 2 classes were given six options for an end of the unit project (a handout was given to the students listing their options and giving directions, see Appendix A). Students in control group 1 had to create a paper poster as their end of unit project, and students in control group 2 had to create a slides presentation. All students were provided with a grading rubric prior to the creation of their project, so they knew what they needed to do in order to reach each level of academic achievement outlined by the instructor (See Appendix B for the rubric). Each project was graded using the rubric.

Instruments

In order to measure the student's academic achievement a rubric was developed and provided to the students prior to the due date of the assignment (See Appendix B). The rubric was created following the district norms of using a 1-4

proficiency level. The district adopted the four levels of proficiency in order to show the students in what areas they were not reaching proficiency. There were four levels of achievement the students could reach for each of four assessed criteria; 1 = far below standards, 2 = almost proficient, 3 = proficient, 4 = advanced proficient. The total amount of points a student could earn was 16; in order to reach the desired achievement level students need to earn at least an 11.5. Half points were awarded if a student's work fell in between two different levels. The rubric was evaluated for content validity by three teachers at the site; two history teachers and an English Language Arts teacher. To establish reliability for the rubric for scoring, the English Language Arts teacher used the rubric to score 10% of the projects. Those scores were compared to the scores assessed by the history teacher and interrater reliability was .81.

Data Analysis

For each hypothesis data were entered into the Statistics Package for the Social Sciences, v. 23.0. An alpha level of .05 was used for all analyses. For hypothesis 1 (Most students will choose a technology based project) a Chi Square was run in order to compare the nominal factors to each other. For hypothesis 2 (Students who choose a technology based project will have higher achievement levels than students who choose a more traditional project) an ANOVA was run in order to compare the achievement levels of all students, no matter the project type. For hypothesis 3 (Students given the choice of a project have higher achievement than those who are told what project to do) a Factorial ANOVA was run.

Summary

This chapter describes the study that was conducted concerning achievement levels and the use of 1:1 technology. The unit of study was on European Feudalism and took three weeks of instruction and 1 week of working on projects in order to complete. The students in the treatment groups were given six different options of project, while the control groups were told what project they were to complete. A rubric was used to assess achievement and those scores were used to run the analyses.

CHAPTER IV

RESULTS

The purpose of this study was to investigate if students who use technology to complete a project had higher levels of achievement than that of the students who did not use technology. Another aspect of this study was to see if students would choose a technology based project over that of a more traditional non-technology project. The results of this study were analyzed using SPSS. The results for each hypothesis are revealed in this chapter.

Findings

H1: Most students will choose a technology based project.

Offering students the ability to choose what type of project they wanted to do, and also seeing what type of technology based project they would choose was of interest. Most students (63.6%) chose to create a slides presentation. See Table 2.

Table 2
Distribution of Project Choices

	Percentages
Slides	63.6
Paper Poster	20.5
Google Sites	6.8
Storyboard	4.5
Brochure	4.5
Interactive Poster	0.0

A Chi Squared test was run to determine if most students in the treatment group chose a technology based project when given the choice between a technology project

or a more traditional project. Results were statistically significant with more students choosing a technology based project (p =.001) as seen in Table 3.

Table 3
Comparison of Project Options Selected by Treatment Group Students

	Percent of Students	χ^2	p
Technology Based Project	75	11.00	.001
Traditional Project	25		

H2: Students who choose a technology based project will have higher achievement levels than students who choose a more traditional project.

An ANOVA was conducted to determine if there was a difference in the mean achievement score based on if the students completed a technology based or traditional project. Results were not statistically significant (F (1, 42) = .117, p = .203) as detailed in Table 4.

Table 4
Comparison of Achievement Between Technology and Non-Technology Projects

	n	M	SD	F	p	η^2
Technology Based	33	12.45	3.675	0.117	.203	.038
Non-Technology Based	11	10.73	4.315			

H3**:** Students given the choice of a project had higher achievement than those who were told what project to do.

A third test was run, an ANOVA, to discover if students who were given a choice had higher achievement scores than the students who were told which project they were to complete. Table 5 shows that the results were not statistically significant (F (1, 86) = 0.043, p = .836)

Table 5
Comparison of Achievement between Students with Choice and No Choice

	n	*M*	*SD*	*F*	*p*	η^2
Choice	44	12.02	3.867	0.043	.836	.001
No Choice	44	11.86	3.275			

Summary

The data collected and analyzed in this chapter were used to investigate how the choice of a project, technology based or traditional, impacted student achievement. Three hypotheses were tested and the results were reported in this chapter. Results will be discussed in Chapter V.

CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Technology is a consistent part of people's daily lives. Students are no different. Many school districts today are moving to having 1:1 classrooms, where every student has a device in his or her hand. The world today is very dependent upon technology and schools need to not only teach the required curriculum but also prepare students to thrive in a technology rich world. With the amount of interaction students have with technology on a daily basis, it is of interest to know whether or not it has a positive impact on students' academic performance. This study examined how much of an impact technology has on student's achievement when they are given a choice of an end of the unit project.

Summary of Study and Results

In a seventh grade world history class, the students ended a unit of study with a project. The teacher/researcher gave two classes an assigned project (one was a paper poster, one class had to create a slides presentation) and two other classes were given the option to choose what project they wanted to do. All projects were graded using a rubric. Results found that when given a choice of a technology or non-technology based project, students were more likely to choose a technology based project. Also, analyses found that among those with a choice of projects, there was no difference in achievement for those who chose technology versus the students who chose to do a non-technology based project. The students who were told which

project they were to complete achieved at similar levels as the students who were given the choice of a project.

Discussion

The students in the treatment group were given a choice of which project they would like to complete, with some options being technology based and others being non-technology based. What was found was that students were more likely to choose a technology based project, with creating a slides presentation being the most common choice. The students may have chosen this option because it is an activity with which they are very familiar. They are asked to create slide presentations more often now than they are to create posters. The students at the school where this study took place had been in a 1:1 setting for over a year, and in the year prior to 1:1 implementation, every classroom was able to access Chromebooks whenever the teacher wanted them. The students were very familiar with the operation of the Chromebooks as well as the Google tools that the school district used. The students also had some of their textbooks on the Chromebook instead of having hard copies to take home. Many of the professional development events that took place in the district had to do with integrating technology and the different tools that students could utilize to enhance their learning, so teachers across the board were using the Chromebooks. The students' familiarity with the different programs offered on the Chromebooks may have resulted in those who were given a choice of project to gravitate towards creating a slide presentation.

While students who were given a choice of a project tended to choose a technology based project, the achievement levels were not statistically significant between those who chose a technology project and those who chose a more traditional project. Students are used to using technology which is why they gravitated towards that choice of a project but since the novelty of using technology has begun to wear off, their achievement scores did not differ from those of the students who did not choose technology to complete their projects. A study conducted by Harper and Milman (2016) had similar results to those of this study where students were no longer motivated more by the use of technology. Though many of the studies mentioned in Chapter II that focused on student choice showed students having more motivation (which was not measured in this study) when given choices, and the majority of the studies also showed that students had higher achievement when options were provided (Patall et al. 2008; Patall et al. 2010; Yamzon, 1999), those findings were not the case in this study.

When addressing whether students who were given a choice of a project would have higher achievement than those who were told what project to do, the results were not statistically significant. Constructivist theory states that students need to interact with the information they are to learn in meaningful ways (Steffe & Gale, 1995, p. 5). One would think that students being given the choice of a project to complete instead of them being told what project to do would result in them interacting with the information in more meaningful ways than their counterparts who were told what to do. If this was true then those who chose their project would have

higher achievement scores than those who were assigned a project; that was not true in this study. One explanation for the results could be that the district where this study took place focuses on Explicit Direct Instruction, or EDI, lesson planning. In an EDI classroom the focus is on the skill that is being mastered and students in turn learn the content through the use of the skills they are using (Explicit Direct Instruction, 2017). EDI classrooms are therefore very teacher driven and do not give students much time for project-based learning; the student information interaction comes through choral responses and teacher guided questioning. The students might not know how to fully interact with the information when asked to construct a project due to their lack of familiarity with this type of task. They are too programmed to just respond to what the teacher is asking of them instead of forming their own thoughts about the information. The fact that the students in the district where this study took place rarely complete projects may have had more of an impact on the achievement scores than did the students having a choice in which format to complete the project.

Limitations

There was an unusual culture at the school where this study took place, one in which a large number of students regularly did not turn in their work. It seemed to be part of what they determined was acceptable practice despite what teachers did to try to encourage assignment completion, including creating a program where students were given more time to complete their work. There were 112 students in the four classes included in the study, but only 88 turned in a project and some students turned in an incomplete project even after the teacher signed them up for the work

completion program. This participation rate may have impacted the results because the students were not worried what would happen to their grade if they did not turn in the work or if they turned in work that was of poor quality. If students would have put forth a little bit more effort, or if some had actually completed the project instead of turning it in incomplete, the achievement scores might have been higher. Conducting this study at a school site where this unusual culture does not exist might yield different results.

Another limitation might relate to the EDI type of instruction that is typical in the school district selected for the study. Even the teacher/researcher was used to conducting class following the EDI lesson planning format, with the teacher rather than the students directing learning. The students were not used to completing a project without the teacher guiding them through every step of the way. Students who are used to having more autonomy in a classroom may do better in a classroom where projects are completed, especially when given a choice of options. It is possible that differences in achievement based on project type might emerge in these settings.

Recommendations for Further Research

This study was conducted in a short amount of time, only a few week time period. More studies that are conducted over a longer period of time could have different results. A different study where the researcher has more than one data set could be useful in understanding the impact of technology as well. The researcher could give participants two different assignments to complete and switch the method as to how they complete it; one with choice and one without. The researcher could

them compare the results. Many more studies need to be conducted in order to fully understand the impact that choice has on student achievement.

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APPENDICES

APPENDIX A

END OF UNIT PROJECT DIRECTIONS

European Feudalism Project

We have come to the end of the European Feudalism Unit!! In order to assess what you have learned you will be creating a project instead of taking a test. The directions are as follows:

Choose one of these options as your project format:

- Storyboard (this can be created either online OR on paper)
- A paper poster
- An Interactive poster (created using one of the approved websites, ie glogster)
- Website (use google sites)
- Slides Presentation
- Brochure

What must be included:

Definitions:You must include these terms and their definitions in your project somewhere
-Feudalism
-Manor
-Fief
-Serf
-Chivalry
-Vassal
-Knight

Social Structure: The social structure (social classes) of European feudalism need to be included. Make sure they are in the correct order and that you give a brief explanation of their roles in society. This can be done in any format, written or picture.

Description of Manor: Describe what a Medieval Manor was and how it worked. The description of the manor can be done in any format but **you will need a picture of a manor with all parts labelled**. Things to label:
-Manor house
-Village
-Pasture
-Church

Diary Entry: You will assume the role of one person from Feudal Europe. Write a diary entry explaining what a day in the life of you would be like. Make sure to include what your role in society is, what your daily chores would be, and any other details about that person.
Roles to choose from
-King
-Knight
-Lord
-Peasant
-Serf

Take your time and be creative!!!

APPENDIX B

GRADING RUBRIC

	4	3	2	1	
Social Structure	Social Structure is clearly stated, in the correct order with descriptions	Social Structure is present with 1 or 2 mistakes	Social structure is incomplete or incorrect for 50%	Social structure is incorrect or not included	
Definitions	All definitions are present and correct	At least 80% of the definitions are present or correct	60% of the definitions are present or correct	Less than 60% of the definitions are present or correct	
Manor	All parts of the Manor are included, labeled, and explained	At least 80% of the parts of the manor are included, labeled, and explained	60% of the parts of the Manor are included, labeled, and explained	Less than 60% of the parts of the Maror are included, labeled, and explained	
Diary Entry	Strongly develops the topic, gives facts and details.	Clearly develops the topic, gives some facts and details	Develops the topic with very few details and facts	Little or no facts or details	
				Total	