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A Study Assessing the Influence of Computer Simulation Video Games on Student Motivation and Learning When They are used as Part of Social Studies Pedagogy

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by

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Abstract

American students lack social studies knowledge and by allowing this to continue

the United States of America, is risking in the words of Abraham Lincoln, "…the last

best hope of earth." Many high school graduates are ignorant of the Constitution and the

mechanizations of a democratic republic. This deficit endangers our freedoms. No Child

Left Behind (NCLB, 2002) requires standardized testing in literacy, mathematics and

science but not social studies therefore; the number of minutes-per-week that youngsters

in K-8 spend learning social studies is shrinking while prepping for the high-stakes tests

is expanding. Students with low socio-economic status (SES) are at an even greater

disadvantage because schools with low SES usually have their students spend *more* time

prepping for the standardized testing.

Proponents of a new pedagogy, gaming-to-learn, hypothesize that it teaches to

several modalities at once, provides differentiated education and captures the enthusiasm

of youngsters who are "turned off" by traditional social studies classes. They cite player

choice, instant feedback, and the ability to "do it over" immediately without penalty as

motivating characteristics that assure the new pedagogy's success. Yet no objective

research supports the theory.

This study investigated the influence on motivation and learning when teachers

used two computer simulation video games, *Food Force* and *Civilization III* as social

studies pedagogy with four classes of ninth grade students. The researcher assessed what

curriculum (if any) was abdicated because of the new pedagogy. The researcher adapted

two existing research frameworks, Kirkpatrick (1994) and Baker and Mayer, (1999) into

a new paradigm. The research occurred during the fall 2007 semester in a large Central

New Jersey public high school. The researcher used mixed methods – three qualitative and three quantitative assessments. The researcher concluded that the educational game, *Food Force* was effective pedagogy but the entertainment game, *Civilization III* was not. The researcher made recommendations to improve the research framework used in the study. It was the opinion of the researcher that using the new pedagogy for one or two class periods abdicated nothing essential from the curriculum. The researcher recommended more research on the subject.

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COLLEGE OF EDUCATION AND HUMAN SERVICES
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APPROVAL FOR SUCCESSFUL DEFENSE

Doctoral Candidate, **Bernadette Downes Coyle,** has successfully defended and made the

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and date this document only when revisions have been completed. Please return this
form to the Office of Graduate Studies, where it will be placed in the candidate's file and
submit a copy with your final dissertation to be bound as page number two.

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Dedication

This dissertation is dedicated to the Sisters of Charity, those wonderful women who tirelessly, taught, guided, disciplined, nurtured and loved me and thousands of other children during my K-12 years while I attended three parochial schools in New York City. The schools were St. Emeric's School on Avenue D and 12th Street, Immaculate Conception School between First Avenue and Avenue A on 13th Street, and Holy Cross Academy at 343 West 42nd Street.

I especially want to thank the following good women who were my teachers.

Sister Bernadette de Lourdes	Sister Marie Veronica	Sister Dennis
Sister Miriam Gregory	Sister Anne Marie	Sister Terisita
Sister Martha	Sister Thomasina	Sister Clementine
Sister Miriam Virginia	Sister Stella Maria	Sister Loretta
Sister Dominica	Sister Miriam Stella	

So many people helped me achieve this goal. My special thanks to Dr. Charles Achilles who mentored me through this process and my committee members, Dr. Margaret Niemiec, Dr. Todd Kent and Dr. Barbara Strobert who helped me refine my thoughts. My co-student and friend Dr. Maria Cleary was my coach and Chris Sabratta helped me organize the statistical data. Several colleagues from my place of work assisted me and I am very grateful for their help. They include: Chris Guglielmo, Bob Herman, Nicole Lenart, Theresa Messinger, Fran Olkowski, Joan Sheridan, Debi Tinnirello, and Maureen Uniszkiewicz. Thank you all.

Abstract

American students are not learning the social studies (history, geography,

economics, psychology, and sociology) and by allowing this to continue the United States

of America, is risking in the words of Abraham Lincoln, "…the last best hope of earth."

Many high school graduates lack a fundamental understanding of our Constitution and

the mechanizations of a democratic republic. When citizens fail to participate in

democracy, they compromise their freedom. No Child Left Behind (NCLB, 2002)

requires standardized testing in literacy, mathematics and science. Since social studies is

not part of the testing the number of minutes-per-week that youngsters in K-8 spend

learning social studies is shrinking while prepping for the high-stakes tests is expanding.

Students with low socio-economic status (SES) are at an even greater disadvantage

because schools with low SES usually have their students spend *more* time prepping for

standardized testing than wealthier schools have their schools spend.

Advocates of a new pedagogy, teaching social studies by having students play

computer simulation video games, theorize that it combines an extremely popular

medium, which young Americans embrace; with social studies understandings that all

Americans need to know in order to fulfill their civic responsibilities. Proponents of the

new pedagogy, gaming-to-learn, hypothesize that it teaches to several modalities at once,

provides differentiated education and captures the enthusiasm of youngsters who are

"turned off" by traditional social studies pedagogy. They cite player choice, instant

feedback, and the ability to "do it over" immediately without penalty as motivating

characteristics that assure the new pedagogy's success. Yet no objective research supports the theory.

This study investigated the influence on motivation and learning when teachers used two computer simulation video games, *Food Force* and *Civilization III* as social studies pedagogy with four classes of ninth grade students. In addition, the researcher assessed what curriculum (if any) was abdicated because of the new pedagogy. The researcher adapted two existing research frameworks, Kirkpatrick (1994) and Baker and Mayer, (1999) into a new paradigm. The research occurred during the fall 2007 semester in a large Central New Jersey public high school. The researcher used mixed methods – three qualitative and three quantitative assessments. Game designers created *Food Force* explicitly for teaching and *Civilization III* essentially for entertainment. The researcher concluded that the educational game, *Food Force* was effective pedagogy but the entertainment game, *Civilization III* was not. The researcher made recommendations to improve the research framework used in the study. It was the opinion of the researcher that using the new pedagogy for one or two class periods abdicated nothing essential from the curriculum. The researcher recommended that more research, concerning the influence of computer simulation video games on motivation and learning, needs to be undertaken.

Chapter I

INTRODUCTION

Overview

Teachers across the nation lament the lack of engagement in classroom learning exhibited by many of today's students. Disinterest in learning is particularly troublesome in social studies classes because an educated citizenry is vital in a democratic republic that depends on civic participation for its political health and responsiveness to world events. Thomas Jefferson, a Founding Father of the United States of America and its third president, wrote that schooling in America should be "chiefly historical." He said:

> The people are the ultimate guardians of their own liberty. History, by
>
> apprising them of the past, will enable them to judge of the future. It will
>
> avail them of the experience of other times and other nations: it will
>
> qualify them as judges of actions and designs of men. (Jefferson, as cited in Kock
>
> & Peden, , 1972, p.246).

The study of history gives us examples of human choices, both famous and infamous. It demonstrates what is beneficial to embrace and what we should avoid. Taught well, history helps us understand the variations of reality, perceived and believed, by diverse peoples. Twenty-first century citizens of the world who are aware of how the histories of our global neighbors shaped the values of their many cultures will be better equipped to address international concerns if they learn social studies. (Stopsky, Tamashiro & Lee, 1994). In addition to history, the discipline of social studies includes civics, geography, economics, sociology and psychology.

That many students are unmotivated to learn social studies is a serious problem: Thus educators need a "hook" to engage students in these required courses. Theories and opinions concerning the educational benefits produced through using computer-simulation video games in the classroom abound; however; the problem is that little empirical evidence of the effectiveness of the pedagogy exists. According to Beck and Wade (2004) educators may need to recognize that the youth of today, otherwise known as the "gaming generation" have had their learning modalities developed through technology, which is unlike any individuals over 35 have ever experienced. Most students, especially those 15 and under, have grown up playing video games daily. Because games are so complex, challenging, and emotionally engaging, students want to play them (Squire, Giovanetto, Devane & Durga, 2005). "This explosion of leisure gaming has brought with it a deeper consideration of the use of games (and simulations) to support learning in pre- and post- 16 education" (de Freistas, 2006,p.53). In a white paper commissioned by Rejeski, director of the *Serious Games Summi, (2002)* and written by Sawyer, co-founder of Digitalmill, Inc., Sawyer (2002) gave significant theoretic support to the theory that video games could become powerful teaching tools. Sawyer's goal was to convince public school administrators that video games teach at least as well as lectures, books, film, or any other medium. In fact, he suggested that they possibly teach better than any other medium because games are the communication choice among schoolchildren. While some educators may intuit that video games could be a powerful medium for teaching and learning, very little research on gaming as effective pedagogy is available, "…yet there is a persistent belief that games can provide

an attractive venue for engaging participants in learning" (O'Neil, Wainess, &

Baker,2000,p.456).

These and other advocates of "gaming to learn" opine that when computer-

simulation video games become part of classroom teaching, the new pedagogy will

invigorate instruction. Supporters of this new pedagogy are very optimistic about its

influence on motivation and learning. Most advocates of learning through gaming would

financially benefit if computer simulation video games were widely purchased by school

systems. This fact insinuates a lack of objectivity, which taints their zeal. Administrators

and teachers who are not of the gaming generation are reluctant to embrace gaming as

sound pedagogy. "[Gaming] research suffers from a lack of concrete measures of

learning" (Federation of American Scientists, Game Summit, 2006). Without an

investment in accumulating and evaluating objective data concerning the effectiveness of

playing computer-simulation video games as pedagogy in social studies classes,

mainstream educators will not embrace this new teaching strategy. (O'Neil et al., 2005).

Statement of the Problem

Little objective research or empirical data exist that support the new pedagogy

referred to as *gaming-to-learn*. Many educators agree that students are lacking social

studies knowledge and that their teachers must find a way to reverse this trend lest

citizens who are ignorant of social studies become unable and incompetent at performing

their necessary civic duties and empirical studies. Students find social studies boring

because of lecture-centered activities and they do not see its relevance for future job

prospects. (Hobbes & Moroz, 2001). After studying how social studies are taught,

Thornton (2005) stated that neither secondary students nor their teachers are happy with

social studies instruction. He opined that the need for improved social studies education is evident. How and to what extent will the inclusion of computer-simulation video games in social studies pedagogy provide the spark that reignites the learning of social studies? In preparation for the current study, the researcher secured the necessary documentation and approvals. (see Appendix A).The researcher earned her completion certificate from the Human Participation Protections Education for Research Teams. The researcher attained dissertation approval forms from the dissertation committee members and permission from the Assistant Superintendent of Schools, the High School Principal, and the Director of Technology in the school district in which the study was completed. The researcher sent out recruitment letters seeking high school social studies teachers to volunteer to participate in the study. All participants in the research signed and dated informed consent forms. Participants included teachers, students and the parent/guardian of participating students.

Current Research Sampling

The sampling in this research involves pairs of New Jersey social studies classes, with the same curriculum, on the same ability level, taught by the same teacher, in one large Central New Jersey public high school. Classes with the same course number and same course title usually contain a similar number of students. Student gender, ethnicity, age, and religion in like-named and like-numbered classes most often follow similar demographics. The research took place during the 2007 fall semester in a Central New Jersey public high school with a District Factor Group (DFG) of I, thus placing it among the wealthiest groups in New Jersey. The research sample was not random because the researcher sought teacher volunteers to participate in this study. The students who were in

the classes of the four volunteer teachers used the intervention with one class in a pair of classes, each with the same number and same level. The high school administrators using the regular scheduling method, which took into account student choice, student grades, teacher recommendation, and guidance counselor recommendation, determined the levels of the classes.

Purpose of the Study

In this study, the researcher assessed the influence on student motivation to learn, students' learning of social studies, and the abdication of social studies curriculum when teachers added playing computer simulation video games to social studies pedagogy. The body of research that supports the inclusion of simulation video games as part of effective teaching needs to be robust for school boards to embrace gaming as valuable social studies pedagogy. The researcher undertook this study to provide from casual-comparative research and qualitative research, data which explored the effectiveness of computer simulation video games on motivation and learning when teachers used them as pedagogy in social studies classes.

Knowledge and perceptions of social studies topics are important in a representative democratic country because without informed participation by the citizenship, civil liberties are in jeopardy (Bennett, Finn, & Cribb, 1999). A democracy cannot work without an educated public.

Decades of "teaching Johnny to read" have not improved students' literacy. Quoted in the *Washington Post*, Professor Perin (as cited in Romano, 2005, December 25) a reading expert at Columbia University Teachers College said "There is a tremendous literacy problem among high school graduates that is not talked about"

(p.A12) Quoted in the same article (Romano, 2005) Gorman, president of the American Library Association stated "It's appalling – it's really astounding. Only 31% of college graduates can read a complex book and extrapolate from it" P.A12. The Commissioner of Education Statistics, of the District of Columbia, Schneider, (as quoted by Romano, 2005) stated "It may be that institutions have not yet figured out how to teach a whole generation of students who learned to read on the computer and who watch more TV. It's a different kind of literacy" (p.A12).

According to Gardner (1983), students learn best through the modality with which they are most comfortable. Gardner (1983) theorized that there exist multiple intelligences, not just linguistic, logical mathematic and spatial. Gardner posited that students prefer learning by using the modality for which they have higher intelligence. Gaming accords students the opportunity to access these other intelligences (naturalistic, interpersonal, intrapersonal, and kinesthetic) more frequently than with traditional classroom instruction. Supporters of the inclusion of computer simulation video games in social studies pedagogy posit that by participating in history in the virtual world students will discern and understand the "big ideas" that teachers of the social studies intend students to learn.

Social studies teachers are aware that far too many students only appear to have developed analyzing, synthesizing and evaluating abilities, in fact; students seem only to have memorized dictated narratives. It is the researcher's observation after reading high school students' essays for 24 years that summative tests incorrectly value these memorizations as proof of higher-order thinking skills and the understanding of historical and cultural relevance. It is the researcher's observation that students deliver these

narratives by rote. Many students lack clear understanding: For example, "checks and balances," is a phrase parroted by some students but understood by relatively few of them. Every school year the researcher has found most high school students incapable of explaining the Constitutional principle.

Social studies textbooks, written for national consumption are passionless. They are replete with "safe" historical accounts specifically chosen because of their political correctness and lack of controversy. Students faithfully "regurgitate" what educators digest for them. For our democracy to be safeguarded, citizens need to develop the higher-order thinking skills that complete Bloom's (1956) taxonomy.

Bloom (1987) stated that, "The most successful tyranny is not the one that uses force to assure uniformity but the one that removes the awareness of other possibilities that makes it seem inconceivable that other ways are viable, that removes the sense that there is an outside" (p. 249). Students need to learn to construct understanding not merely memorize them otherwise social studies instruction is myopic and fails to prepare students for active citizenship.

Advocates of computer-simulation games as teaching strategy allude to the interactivity between the game designer and the student as the player progresses through the game. Dewey (1938) stated that children learn best by "doing" and that student choice invariably creates the richest environment for the most doing. Dewey stated that unless a connection existed between the child's life experience and school activities, genuine learning would be impossible. Gaming advocates propose that playing computer simulation games, set in virtual historical environments, require players to make choices thereby creating multiple opportunities for doing and by extension, opportunities for

genuine learning. Moulder (2002) quoted a student who asked a rhetorical question at the Game Developer's Conference held in Los Angeles in 2004: "Why read about ancient Rome when I can build it?" This statement supports choice and doing. Both choice and doing are inherent in computer simulation video games.

Research Questions

Three questions concerning the inclusion of computer simulation video games as part of social studies pedagogy was the focus of the research.

1. To what extent does a positive relationship exist between playing computer simulation video games in social studies classes and students being motivated to engage in learning the higher order thinking skills necessary for understanding social studies?

(2) To what extent does a positive relationship exist between students learning social studies and teachers using computer simulation video games as pedagogy?

(3) What does the inclusion of computer simulation video games in social studies instruction abdicate from the curriculum?

Theoretical Rationale

The military and industrial personnel began taking notice of the value of gaming for training purposes in the early 1970s when the video game industry was in its infancy. Today, most recruits entering the military are familiar with them and enjoy playing computer-simulation video games. Consequently, the military uses simulation video games extensively in its training. More than 3.4 million gamers registered to play *America's Army*, essentially an interactive recruitment ad released in July, 2002. The most recent military addition, *America's Army: Special Forces Overmatch* was published

and released with free downloading from the internet on 9/14/2006. It can run on virtually any platform.

Totty reported in 2005 that, "Evidence suggests adults learn more and retain more in courses that incorporate such game elements as competitive scoring, increasingly difficult player levels, and fantasy role playing" (p.R6). The researcher reasoned that if computer-simulation games were assessed as effective teaching pedagogy in industry and the military, why not in K-12 education?

Two major theoretical frameworks were used to assess the influence of computer-simulation video games as instructional tools. Kirkpatrick's (1994) four levels for evaluating training (table 1), and Baker and Mayer's (1999) federally funded framework from the University of California International Center for Research on Evaluation, Standards, and School Testing (CRESST) were used as rubrics for assessing the influence of computer-simulation video games on learning. The researcher synthesized parts of the two theoretical frameworks to assess the influence of computer-simulation video games on student motivation to engage in social studies classroom activities and on student learning The researcher added "time spent playing the game" as a student motivation assessment. In addition, time spent playing the game was an assessment of the influence of playing computer-simulation games on learning outcomes when compared to learning outcomes when teachers used traditional pedagogy.

Delimitations of the Study

The research was limited to 4 pairs of same-named and same-numbered classes which were taught by 4 teachers. The researcher did not investigate several variables that may influence student motivation and learning when social studies pedagogy includes

Four levels of evaluating training	
Level 1:	Trainee's reaction to the program: level of satisfaction
REACTION	
Level 2:	Trainee's attitude change, increased knowledge, and or increased skill
LEARNING	due to the training
Level 3:	On the job change in behavior because of program participation, i.e.
BEHAVIOUR	transfer of learning to the job setting
Level 4:	How the organization benefited from the learner's participation in the
RESULTS	program (e.g. increased production or profits, improved quality,
	decreased costs, fewer accidents)

Table 1. Kirkpatrick's (1994) four levels for evaluating training (p.458).
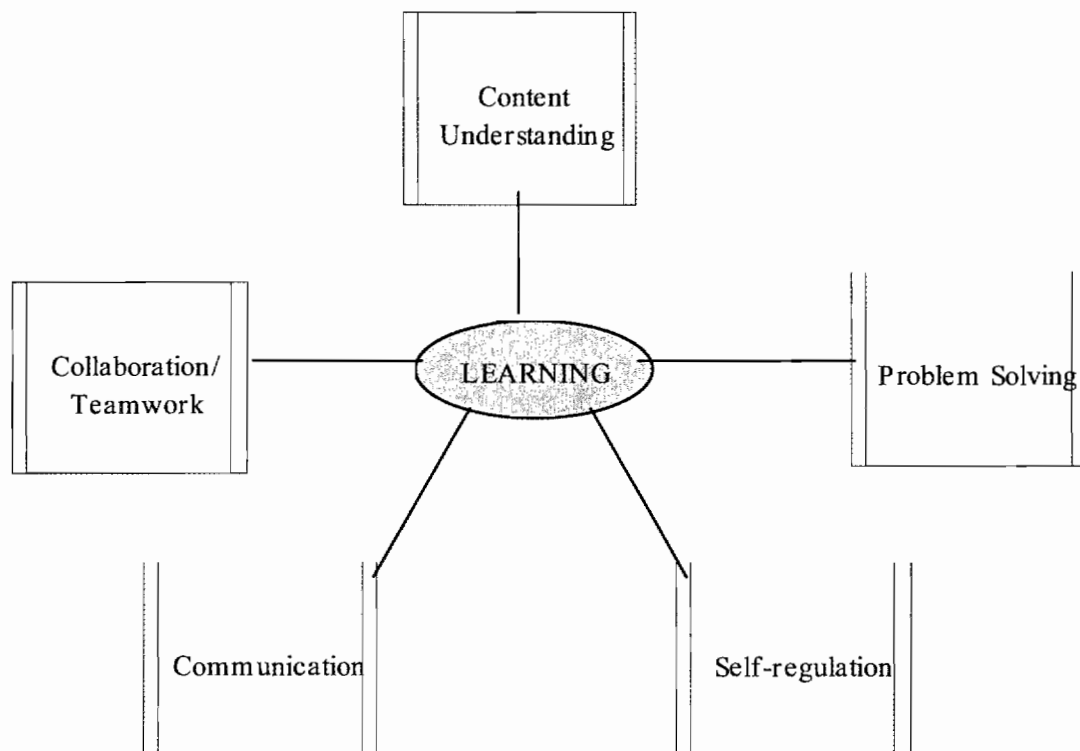
Figure 1. Baker's and Mayer's (1999) CRESST model of learning families of cognitive demands as presented in (O'Neil et al., p.459)

playing computer-simulation video games during class time. Among the variables *not* considered in this research were administrative and technological support, class size, number of minutes in a class period, students' cognitive abilities, students' experience with computer-simulation video games, students' and school's socio-economic ranking, teacher age and teaching experience. The researcher recognized that all of these variables could influence motivation and learning but excluded them from the data collection to simplify the data analysis in this newly developing field of research.

Limitations of the Study

Six anticipated limitations existed in this study.

1. The age of students in any class can vary as much as 4 years. Sometime students of several grades are in a course for a variety of reasons. They may be repeating the course or new to the country or state. Since the New Jersey Core Curriculum Content Standards (NJCCCS) (2005) requires only 3 years of social studies in order for a student to receive a high school diploma, some students wait until their sophomore year to begin social studies instruction and are, therefore, older than many of the other students in the class. Students who transfer into the high school may have taken required courses out of the current school's normal sequence and, therefore, find themselves in classes mostly composed of students from another grade. A student who failed the required course in an earlier grade may be repeating it a year or more later. While the homogeneity of curriculum remained intact, the ages of the students could vary by a few years.

The school district in which the high school is located has a transitional year between kindergarten and first grade. Some students who complete kindergarten participate in the transitional primary program. Teachers assessed that these students were developmentally young. Teachers expected that these students would have trouble in subsequent grades if they did not enroll in the transitional first grade. As a result, a higher grade may have an age span of four years in one class.

2. Another limitation was academic scheduling. The first classes assigned times and rooms on the master schedule are higher-level science classes with two labs on a 6 day cycle (rotation). The labs replace two gym periods every 6 days. One incidental effect of this practice is the scheduling of students who share higher-level science labs into the same class groups in other courses. This practice mostly affects college preparatory (CP) classes. Therefore, two classes on the same level can be quite different in ability, focus, and achievement even without a research intervention. Many Advanced Placement (AP) students concentrate their AP interests in either the humanities or the math and sciences and take CP courses that are required for graduation but for which the student has no special interest. The inherent intelligence and well-developed study skills of these students often stand in stark contrast to those of the students who follow a CP curriculum devoid of AP or Honors (H) classes.

3. A third limitation was teacher familiarity and comfort with playing computer-simulation video game(s). Each participating teacher decided how and for how many days to use the game(s) during class. The researcher opined that requiring a more structured use of the games might have resulted in difficulty recruiting teacher volunteers.

4. Another limitation out of the researcher's control was teacher quality, experience, and adherence to the research protocol.

5. The researcher depended on qualitative research "look backs" for data without any way to authenticate responses. Students self-reported minutes spent playing   the game(s) and the scores or levels, which they achieved. It was not possible for the researcher to verify the reported scores.

(6) The classes occurred throughout the day. Research has shown that student behaviors may be influenced by the time of day when a subject is taught.

Chapter Summary and Transition

Chapter I provided an overview of the problem, which are unsubstantiated claims by advocates of gaming-to-learn that this new pedagogy positively influences students' motivation to learn and learning of social studies. While many educators voice concern over declining social studies knowledge among American students and opine about the negative impact ignorance of social studies will have on our democratic republic, the stakeholders require empirical evidence that gaming-to-learn is effective pedagogy before they embrace it. The researcher investigated the influence on motivation and learning when two specific computer-simulation video games, *Food Force* and *Civilization III*, were added to the social studies pedagogy. Two research theories previously used to assess the influence of using computer-simulation video games on training by the military and industry were Kirkpatrick's (1994) and Baker's and Mayer's CRESST (1999). The researcher developed a new theoretical framework which used parts of Kirkpatrick's (1994) and Baker's and Mayer's CRESST (1999) to assess the influence of computer-simulation video games on motivation to learn higher-order thinking skills used in social studies classes, when computer-simulation video games were used as part of social studies pedagogy.

In Chapter II the researcher reviewed the existing research, theory and literature concerning the need for more and better social studies education as well as the minimal existing research, theory and literature assessing the influence of computer- simulation

video games on the teaching of social studies. Appendix B contains the definition of

terms used in describing the research.

Chapter II

REVIEW OF THE RESEARCH, THEORY, AND LITERATURE

Overview

This researcher cannot review at this time (2008) the research concerning the effectiveness of using computer-simulation video games as social studies pedagogy thoroughly because the researcher was unable to locate any objective, rigorous, replicable studies on the topic. "One of the main obstructions to uptake of games in learning context is a lack of empirical data to support the fact that they work, as well as a lack of understanding about how these games might be used effectively in practice" (de Freitas, 2006, p.5). Most of the literature concerning the effectiveness of computer-simulation video games as pedagogy originates from game designers and manufacturers who have a financial stake in selling as many computer-simulation video games as possible. Yet, research concerning the use of computer-simulation video games as training tools in the military and industry does exist. However, the researcher does not equate skill training with educating students to learn higher-order thinking skills and therefore the findings acquired through the research frameworks used by Kirkpatrick (1994), and Baker and Mayer (1999) to assess training through playing computer-simulation video games fall short of empirical evidence necessary to answer the three research questions of this study.

1. To what extent does a positive relationship exist between playing computer simulation video games in social studies classes and students being

motivated to engage in learning the higher order thinking skills necessary for understanding social studies?

2. To what extent does a positive relationship exist between students learning social studies and teachers using computer simulation video games as pedagogy?

3. What does the inclusion of computer simulation video games in social studies instruction abdicate from the curriculum?

The Need for Improved Social Studies Education

The current national culture (2002-2008) defines educational achievement primarily through improving standardized test scores in math, language arts and, more recently, science. Secretary of Education Spellings (2007) stated that only testing could assure parents and school administrators that teaching occurred. Regrettably, the opposite is also often true. If it is not tested, the subject may not be taught well.

The purpose of this study was to assess what relationship existed between student motivation to learn and the use of computer simulation video games as social studies pedagogy. Additionally, the researcher investigated what relationship existed between learning social studies and using computer simulation video games as part of social studies teaching. The 2002 federal legislation, No Child Left Behind (NCLB) did not require social studies testing and it has made social studies the "stepchild" of subjects taught in school. "Reduced instructional time in social studies has resulted in a reduction of the scope of the curriculum, the curtailment or elimination of opportunities to promote students' higher-order thinking, and an increased emphasis at times on the simple reproduction of content knowledge"(Wills, 2007, p.1980).

The NCLB de-emphasizes social studies instruction and consequently social studies instruction has been diminished. Social studies instruction currently endures an "if you can fit it in" status, especially in kindergarten through eighth grade. "The apparent mainstream acceptance of drastic reductions in the amount of time and attention given to one of elementary education's core subjects is shocking" (Pace, 2007, p.26). Yet in high schools across America students continue to be required to take three to four years of social studies as if an exacting social studies program in kindergarten through eighth grade prepared teens to understand the rigorous high school social studies curriculum. By high school students have fully digested the tacit message that the social studies are not valuable. They enter high school classes woefully unprepared in American history and knowing almost nothing of the global community or world geography. Yet educators expect students to comprehend a sophisticated curriculum even though many students lack basic social studies knowledge, which includes understanding the many vocabulary terms particular to the discipline and having general geographical knowledge. "The social studies squeeze occurs disproportionately in low-performing schools and large minority and low-income populations that are under intense pressure to raise [standardized test] scores" (Pace, 2007, p.26)

Ample evidence of a lack of social studies knowledge by our federal legislators, concerning the American Constitution is the fact that the federal government through the NCLB set these standards. According to the Tenth Amendment, education is a state function.

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the states respectively,

or to the people. (Constitution of the United States of America, Tenth

Amendment)

Education is not mentioned anywhere in the Constitution and is therefore a state function.

"On Monday, January 7, 2008, the Sixth Circuit Court of the United States Court of Appeals in Cincinnati ruled that the NCLB violates the U.S. Constitution by requiring states and school districts to use state and local funds to meet the requirements of the federal law (The American Association of School Administrators (2008). Had federal legislators adhered to limitations placed on them by the Constitution, the NCLB Act would never have been passed without an amendment to the Constitution passing first.

In a personal letter to Colonel Charles Yancey of Virginia, written on January 6, 1816, Thomas Jefferson, (as cited in Linkin, 1961, p. 18-19) a Founding Father of our country and a person strongly influenced by both the Renaissance and the Enlightenment, stated, "If a nation wishes to be ignorant and free, it wishes for what never was and what never will be." The necessity of free public education was obvious to those who began the "Great Experiment," a modern democratic republic where government was sustained through the consent and participation of the governed. American educators understood the need to teach democratic republican principles because these constructs were and remain relatively new in the history of humankind. Only look to the struggling young democracies throughout the world for confirmation. Unfortunately, respect for natural rights and concern for the common good are not the guiding principles of many governments. In social studies classes, the youngsters learn and discuss the principles germane to republican democracy. "It's one thing to have a nation of diverse opinions, which is crucial for democracy, but opinion before knowledge, or without tolerance,

leads to demise. We've seen more than enough evidence of that in recent years" (Pace, 2007, p.26).

The United States of America cannot continue as a world leader without an educated citizenry, which includes their learning the social studies. Embedded in required history courses are the other subjects of social studies – civics, geography, economics, sociology, and psychology.

Engaging computer simulation video games may help change the downward slide of social studies instruction. There is no doubt that social studies education is suffering. At the 2007 Conference of the American Association of School Administrators (AASA), the keynote speaker, retired Supreme Court Justice, Sandra Day O'Conner, urged school administrators to improve social studies education. Alarmed by the knowledge that a greater number of high school students could name the *Three Stooges* than could name the three branches of government, Justice O'Conner said, "We are born free, but liberty is something we have to learn. It all comes down to education." (O'Conner, March 12, 2007)

McCullough, (2006) the famed Pulitzer Prize winning historian, stated in a commencement speech at Dartmouth University,

Indifference to history isn't just ignorant; it's a form of ingratitude.
And the scale of our ignorance seems especially shameful in the
face of our unprecedented good fortune…I'm convinced that history
encourages, as nothing else does, a sense of proportion about life,
gives us a sense of how brief is our time on earth and thus how
valuable that time is.

Since President George H. W. Bush called the first governors' meeting on education in 1999, there has been no Social Studies/History Consultant in the United States Department of Education. Bryant, (2005) professor of history at Appalachian State University, stated, "The social studies - the very foundation of our future patriotism, democratic-idealism, and civic involvement - have been nearly abandoned in our schools"(p. 754).

Secondary schools play an enormous role in developing the collective memory of a nation. Once high school is completed, many students even those who graduate college, will never formally study history, civics, geography, economics, sociology or psychology again. "We face a formidable challenge, for contemporary society, with its emphasis on new products and new fashions, ignores the past or reduces it to banalities for popular consumption or political manipulation" (Liberal Learning and the History Major,1991, para. 6).

The researcher did not want the warning of Alexander Solzhenitsyn, (as cited in the Florida Association of Social Studies Supervisors website) "If you wish to destroy a people, you must first sever them from their roots" (para..2) to come true. Our children need to learn about the philosophy, ingenuity, tenacity, sacrifice and courage that made America, in the words of Abraham Lincoln, "...the last best hope of earth" (Lincoln, 1862). Teaching the compelling passions that forged American history by including computer-simulation video games in social studies pedagogy may or may not be the key to unlocking the intrinsic motivation to learn, which seems dormant amongst an increasing number of disengaged social studies students. This research was necessary to

help determine if the use of computer-simulation video games can be used as effective pedagogy in social studies education.

While there are empirical data to show that time spent on social studies in our public schools has decreased, there are only anecdotal stories to support using computer-simulation video games to improve student motivation and interest in learning social studies. The researcher investigated the supposition that playing computer-simulation video games as part of social studies pedagogy would motivate students to learn the social studies without sacrificing curriculum.

<div align="center">Computer-Simulation Video Games As Motivators</div>

Smith, director of instructional technology at Visalia Unified School District and 2007 president of California's Computer Using Educators stated that students who play video games in the classroom are absorbed in whatever information the computer game contains. He stated that, "A student not engaged is a student not learning."(Wagner, 2007). Yet students bore quickly. "Motivation is a key aspect of effective learning but motivation needs to be sustained through feedback responses, reflection and active involvement in order for designed learning to take place" (Garris, Ahlers, & Driskell, 2002p. 442). Studies at the Education Development Center at Harvard University have shown that video game technology in the classroom has the potential to engage the least motivated students (Dede, 2005).

> Much of the literature surrounding simulations highlight the importance
> of feedback, and in particular immediate feedback a particular strength
> of the form. The immediate feedback can allow learners to alter their
> performance more quickly often leading to accelerated learning times.

(Delanghe, 2001, p.32).

According to Papert (2002), who taught mathematics at the Massachusetts Institute of Technology (MIT), "hard fun" is enormously motivating as a learning facilitator, especially when combined with student choice. "...learners don't mind activities that are hard as long as the activities connect deeply with their interests and passions" (Resnick, 2004, p.3). Because simulation video games have the player(s) advance through levels of play competency, where each level is slightly more difficult than the previous one already attained, the motivation to continue playing the game is compelling even though subsequent tasks are more challenging. This is "hard fun," more difficult than formerly achieved but not so difficult as to be exasperating. Vygotsky (1978) described this "hard fun" as the zone of proximal development (ZPD). He said that ZPD is "...the distance between the actual development level...and the level of potential development...under adult guidance or in collaboration with more able peer." (p.86).Computer-simulation video games spiral through the ZPD, expanding the boundaries of ZPD as the player succeeds. The game designer provides the "adult guidance."

The choices that players make during the game shape their progress through the levels and effects the game points that they earn. Squire (2004) observed that students who played *Civilization III,* one of the games studied in the current research, often improved their choices by consulting traditional text-based information sources. Advancement and points are positive reinforcement earned by students making wise decisions. Earning points and attaining increasingly, difficult levels of play indicate that the student understands the complexity created by the game designers. "Key factors that

had an impact upon players' motivation related to: player sense of challenge, game realism, opportunities to explore or discover new information, and learner control"(de Freitas, 2006, p.5).

Research on the effects of reinforcement on academic achievement finds that contingent reinforcement relates positively to achievement whether students only receive rewards for correct answers, or receive rewards for correct answers and lose something for incorrect answers (response cost) (Cotton, 1988). This type of immediate feedback is intrinsic in computer-simulation video games.

"Computer games were hypothesized to provide multiple benefits: (a) complex and diverse approaches to learning processes and outcomes; (b) interactivity; (c) ability to address cognitive as well as affective learning issues; and, perhaps most importantly; (d) motivation for learning"(O'Neill et al., 2005 p. 453). Based upon literature like this, the researcher studied the hypothesized benefits on motivation and learning when teaching social studies include one of two specific computer-simulation video games as pedagogy

Squire, (2003) an assistant professor of education technology at the University of Wisconsin-Madison, researched *Civilization III;* the simulation video game created by Meier, and played on the most common platform, a personal computer. Students play roles as decision makers of history. "You may think of it as a map in a history book come to life," Squire explains. "The biggest thing we found in pre-and post interviews was that these kids hate school-based history. The game really gave them a different way to learn it" (p.38). As a bonus, some students studied maps and encyclopedias outside the classroom in order to make decisions that were thoughtful (Shreve, 2005).

The MIT-University of Wisconsin Education Arcade Initiative modified *Never Winter Nights*, a game about choices one makes to stay alive to pursue a goal, and renamed it, *Revolution*, with an American Revolution narrative. Professor Hansen and the New Media Studies director, Paul, explored the use of computer-simulation video games as effective tools in the classroom. Hansen, a professor of journalism and mass communication at the University of Wisconsin stated a simple observation: college students today learn in different ways than did preceding generations. According to Berger (2006), this observation is what motivated the gaming-as-learning movement. Research by cognitive learning theorists, psychologists, neurologists, and biologists is beginning to show the ability of today's students to multi-task naturally, while simultaneously learning absorbing information in multiple ways. (Berger, 2006).

During a series of workshops in the spring of 2005, (Francis, 2006) explored how *Revolution* supported learning and teaching about social aspects of history. It focused on story telling as the basis for experiential learning. Unlike traditional story telling, game-based story telling expands a linear narrative into multiple narrative routes. Each player or team, as an avatar, an image in a computer-simulation video game that represents a person, narrates history from a particular point of view as a famous historical figure or individual of a social class (i.e. slave, indentured servant, frontiersman) . "Player choice in terms of narrative path becomes a more empowering aspect of the process of play in these narrative based environments. In this way, player autonomy was found to be a significant motivator for learners "(Francis., 2006, p.2). Professor Lave at the University of California at Berkeley worked with Brazilian "street kids" who seemed incapable of learning mathematics in school. Paradoxically, the professor found that the children were

nevertheless quite adept at doing calculations in their heads when those calculations concerned monetary tasks necessary for their very survival. Lave interpreted this finding as showing that motivation indeed increases learning (Quinn, 2005).

Computer-Simulation Video Games Provide Differentiated Instruction

Differentiated instruction (Tomlinson, 1999), a teaching philosophy based on the premise that teachers should adapt instruction to students' abilities and favored learning modalities, is inherent in computer-simulation video games. Each player of a computer-simulation video game works at his or her own pace and the interactive level of social studies understandings graduate systematically as a student advances through increasingly more difficult levels of play. A recent study by Anderson, Gentile, and Buckley, (2007) psychologists at Iowa State University, found that video games were effective teaching tools because they "think" along with the students, adopting instruction to individual skill levels.

Tomlinson (1999) stated that all students should be taught the same "big ideas"; not given watered-down content simply because they are academically struggling. Tomlinson opined that a variety of accommodations help struggling students achieve the in-depth understandings learned by their peers. Advocates of computer-simulation video games as classroom pedagogy see gaming as an effective accommodation for the millions of students whose computer literacy exceeds their reading literacy.

Differentiated instruction has the teacher provide learning opportunities at varied learning levels using different learning modalities. The teaching modalities change according to the abilities and preferences of the learners (Tomlinson, 1999). Computer-simulation video games have differentiated instruction built in. The current generation of

games are tiered to the individual level of the player. The designer, through the game

levels, sets clear goals and encourages risk taking without any real consequences because

players are set in the virtual world, allowing for starting over. The designers afford many

avenues to a solution, encouraging collaboration, supplying additional information from

"cheat sheets" to improve decision-making, using "just-in-time management " theory

(Kerscheberg, 2001) and providing "victory" to many who otherwise may never

experience it in school. Moreover, the educational windfall, the reward for "victory", is

additional work at another, more complex and challenging level. "Learning can and

should be hard fun" (Quinn, 2005, p.22)) Games have many stages of expertise from

novice to master, thereby affording built-in accommodations for the cognitively weak,

engrossing challenges for the gifted and talented, and captivating motivation for

everyone. Pedagogy that strives to offer differentiated education to students endeavors to

get all students in their own zone of proximal development (Vygotsky, 1978). The idea

that differentiated instruction (Tomlinson, 1999) should be available to every student is

manifest in computer-simulation video games.

In role-playing games, where students direct avatars, "Students develop a holistic

understanding of the simulated social system absorbing information from multiple modes

(visual, textual, symbolic interactions) generated through interaction with virtual objects

and people" (Francis, 2006, p.17). This synthesis created from many and varied sources,

requires higher-order thinking skills as defined in Bloom's Taxonomy of Cognitive Skills

(1956). Role-playing games permit the student who learns best through any of the senses

– visual, auditory, tactile, or kinesthetically (Dunn, 2000) - to gain knowledge and create

knowledge in what may be the student's favored modality: a modality that may be

exercised infrequently through traditional pedagogy. Squire et al.(2005) found that students who did not expect to understand the sophisticated underpinnings of civilizations nevertheless learned these supports through playing *Civilization III.* The immediate feedback and instant opportunity to demonstrate that one learned from previous mistakes turns pressing "reset" into an emotionally engaging yet risk free "do over" that can be repeated many times, mimicking "skill and drill" of knowledge attainment. Continuing through the game evidences far more breadth of understanding than most social studies assessments do. A student does not "regurgitate" knowledge because the student must apply higher-order thinking skills like comprehension, analysis, synthesis, and evaluation, in order to advance. The extensive web links to glossaries and content-rich information appendixes supply the student with the data he or she needs to make wise decisions. "Some simulations are planned in a series of steps, each one of which contains new and more demanding challenges, pressuring students into making harder and faster decisions, using whatever knowledge they have gathered" (Zevin, 2000, p.376). Learning through playing computer-simulation video games is differentiated instruction because each student moves through the game at his or her own pace and follows an individual "route" determined by his or her own choices. Computer-simulation video games accommodate all learning modalities as theorized by Dunn (2000). Not just one but several paths to success exist. Advocates opine that students will transfer to the real world the skills that they hone in the virtual world.

Functional Epistemology Is Inherent in Computer Video Simulation Games

Playing computer-simulation video games, set in historical environments, creates multiple opportunities for "doing." Such games provide *functional epistemology* where

students learn through performance. The challenge to win creates tension between the gamer and game designer. This conflict accesses student prior knowledge and, in order to win, demands that the student identify the operational biases of the designer. Students create new knowledge by synthesizing the constraints of the design, the historical data inherent in the game's virtual environment, and the learner's understandings. Analysis and synthesis contribute to historical comprehension and lead to interpretation and judgment. As reasoning deepens, one moves from the concrete to the abstract, from past issues or events to well-reasoned generalizations, what social studies teachers refer to as "big ideas." Computer simulation video games put "...learners into a context where they have to make decisions, understand why those decisions are important, want to make these decisions, and know that there are consequences for those decisions" (Quinn, 2005, p.10). Quinn is a systems designer who, in his book, *Engaging Learning. Designing e-Learning Simulation Games,* extols the exciting synergy produced when entertainment and education are brought together in computer-simulation video games. Quinn states, "Some cognitive research either directly demonstrates or indirectly suggests the value of adding engagement to learning" (p.14). He cited as evidence the work of Lepper and Cordova (1992) who added story enhancements to mathematics instruction that led to improved student outcomes. He cited the success of Shank and Cleary (1995) who developed goal-based scenarios for business training.

With more than half the country's teachers over age 50 (Schwab, 2002, p.3) and unfamiliar with or only novices in gaming, the difficulty in teaching today's students through gaming is aggravated because veteran teachers do not think as the gamers think

and therefore find it difficult teaching these children in the way that many students have become accustomed to learning.

Embracing a new pedagogy after decades of teaching without it is a daunting task and begs the question, "Why should I change my pedagogy? It's been working for decades." Not surprisingly many stakeholders prefer sticking with reading, writing, and lecturing, allowing for little student choice and consequently inhibiting some students' emotional investments in the lesson's outcome. Some people even refuse to consider that there is any worth in gaming-to-learn because they themselves do not construct knowledge as those who have grown up playing computer-simulation video games construct knowledge.

Because a game can be completed or won in multiple ways, students get opportunities for choice. When learning is fun, more is learned. Designers developed computer-simulation video games to entertain but entertaining does not necessarily exclude learning. Other media (videos, CDs and power points) are currently widely accepted tools for social studies pedagogy. Advocates reason that the interactive media, computer-simulation video games, unlike the aforementioned passive media will motivate and teach more effectively than does passive media. However, little or no objective research has been published to support this reasoning.

Professor McMichael who taught "The History of Western Civilization to 1648" at Western Kentucky University "...soon found that I had a waiting list for students to get into the class" (McMichael, 2007, para. 16). In the fall of 2004, the professor announced that in addition to reading texts, listening to lectures, and examining primary source materials students would play computer-simulation video games each week for 17 weeks.

Quinn (2005) stated, "The evidence is that learning is more effective if it attracts the attention and interest of the learner, is obviously relevant, requires action on the part of the learner, and is contextualized so that the learner understands how and when to apply it. In short, we need to address the emotional side of learning as well as the knowledge side" (p.4).

According to Willis and Mann (2000) computer-simulation video games set clear goals, encourage risk taking without any real consequences in the virtual world, allow for starting over, afford many avenues to a solution, encourage collaboration, supply timely additional information to improve decision-making, and develop "winners" who otherwise never experienced it in school. In addition, students "discover" that there are many "…routes to success that vary in terms of complexity, abstractions, and open-mindedness" (Willis & Mann, 2000). Beck and Wade (2004) stated that thinking "outside the box" is what it usually takes to beat the game. They wrote that individual and group choices are emotionally engaging, improve learning, and prepare students for the good jobs in the twenty-first century. In their book *Got Game,* Beck and Wade (2004) claimed that those with extensive gaming experience were better team members, put a high value on competence, and had more potential to be superior executives in the workplace.

Playing Computer-Simulation Video Games Improves Student Outcomes

The argument that children learn better in the virtual universe has been a major influence on pioneers like Gelman, associate director of Stanford University Law School's Center for Internet and Society. As quoted in the *Congressional Quarterly,* Gelman (as cited in Glazer, 2006) stated "If we know there's educational value in that kids think differently when they navigate these worlds, could we put it to better use to

teach them substantive stuff while they're sitting in front of 'World of Warcraft' for 10 hours on a Saturday? It could be at the cusp of something completely revolutionary in education – or it may not work" (p.937). This last statement makes objective research concerning the inclusion of computer-simulation video games in social studies pedagogy, imperative. Dede (2005), stated that the key to gaming-to-learn is to adapt successful entertainment formats to education. Many students who are bored by school get simplistic schoolwork, because teachers know that they will complete it and will not complete tasks that are more difficult. This common practice neither informs nor prepares them for 21st century lives. However, given the opportunity to game play, these digital natives are "drawn in" by the compelling story line of a video game. "In a game, students are dealing not with important information but with experiences from which important information can be extracted. That's more complex but it's also more engaging for the student...If you have an emotional connection, you'll retain more"(Dede, 2005, para. 4). Learning improves when a clear yet challenging goal, set in a believable theme, requires that the student struggle to reach it. The context must be meaningful and decisions must have consequences, albeit in the virtual world (Aldrich, 2005).

According to de Freitas (2006), for learning outcomes to be achieved it is necessary with simulations (and games) to reinforce learning that has taken place through meta-reflection and post exercise consideration. Without this, learners may not reinforce the learning process and gains may be lost. "The reason why this is particularly important for role-playing activities is because a relationship needs to be made between activities occurring in the game world and the learner's relationship with the real world "(p.36).

Teams of students often play video games. This variation has the capacity to improve students' social skills because winning the game as a team requires collaboration, communication, and persuasion skills, as well as content understanding. Historically set games provide students, as avatars, opportunities to interrogate historical figures, develop empathy and reflect upon choices made in the past in a more personally engaging way.

Technology Skills Necessary for 21st Century Employment Are Learned

and Practiced When Students Play Computer-Simulation Video Games

According to Shaffer (2005), from the Wisconsin Center for Educational Research, business executives in the United States are outsourcing standardized jobs, and will continue to send them overseas until, in the very near future, the only jobs left will be for people who can do innovative and creative work. Shaffer stated that workers, who lack the skills developed by using fast paced technology to anticipate problems and fix them, will be blocked from the top jobs. The University of Wisconsin researcher stated that the American public school system is in crisis because it is teaching a medieval curriculum to equip workers for an Industrial Revolution instead of the twenty-first century global economy. He explained that commodity jobs are standard jobs done more cheaply and as well outside the United States. He fears that foreign work forces, better trained and more practiced in thinking innovatively, will before long, be outsourcing the lower paying commodity jobs to the United States unless America maintains its competitive edge in new, special, non-standard products and services.

Shaffer (2005) opined that epistemic games are part of the solution to our educational crisis because they use technology to teach students to think and learn in new

ways, like innovators. He stated that epistemic games can let students learn to innovate by participating in simulations of the supervised settings of professional training (Shaffer, 2007). Through using computer-simulation video games students need not wait for high school Advance Placement (AP) or college courses to solve problems in new ways. Like excellent athletes, musicians and linguists, Shaffer states that beginning any special skill at a young age has the student routinely perceive the world in a way that enhances and maturates his special skill. It is Shaffer's opinion that playing epistemic games will stimulate students to learn to solve problems in new and different ways. Instead of learning to "regurgitate" content disconnected from reality, students will learn in virtual reality ways to apply content and solve problems innovatively.

> This disconnect between facts and rules that students memorize
> and knowledge they can use to solve real problems simply doesn't
> happen in epistemic games. Epistemic games are based on making
> and applying knowledge. Instead of learning facts, information, and
> theories first and then trying to apply them, the facts, information,
> and theories are learned and remembered because they are needed
> to play the game – that is, to solve some real world problems – in
> the first place. (Shaffer, 2006, p.14)

While Shaffer's opinion makes sense and is congruent with experiential learning, there is no objective, concrete research yet to back it up. Shaffer predicted that innovative technology skills, more than any "back to basic" curriculum, is needed to keep the American economy both vibrant and competitive. A large new market has "married" commercial game developers to educators to begin to form networks to explore ways to

develop the most effective game-based learning (i.e. Serious Games Summits, London Knowledge Lab). Game development is an extremely expensive undertaking, therefore most educators adapt commercial simulation video games to curriculum demands, thereby meeting the requirements of school systems within the reality of fiscal constraints. "Should serious games prove successful and if business models are shown to be successful then we may see more dedicated games for education become more widely available" (de Freistas, 2006,p.53).

Governor Warner (2004) of Virginia and chairman of the Governors Association in 2004 stated, "Given that the economic prospects of states, and this nation, are at stake, blindly conducting 'secondary education' as usual is unacceptable. As this increasingly global economy demands more from our high schools, we should demand more from our school." (p.44). The governor stated that he had "…talked to too many high school seniors who are bored, disengaged, and simply counting the days to graduation"(p.44). Including epistemic games in social studies pedagogy may not only give these students an opportunity to develop skills for innovative jobs, it may have the additional effect of turning senior year in high school into time enjoyably and productively spent rather than begrudgingly endured.

The ubiquity of cell phones has implications for how teaching may take place in more seamless and inexpensive ways. Each new generation of cell phone delivers new and more forms of communication. If this trend continues, new applications and opportunities for learning will become available to previously underserved populations. An entire new *modus operandi* of instruction could replace the traditional high school. (de Freistas, 2006)

Other Variables That May Effect Student Motivation and Learning

Not Addressed in the Current Research

Many other variables beyond the researcher's control certainly influence

motivation and learning: student ability, ambition, family life, health, environment, class

size, teacher skill, socio-economic status (SES) and school facilities are only a few.

Chapter Summary and Transition

In Chapter II the researcher reviewed the research, theory, and literature

concerning the decline in the importance given to the study of social studies (history,

geography, economics, sociology, psychology and civics) in the schools in the United

States of America as well as the research, theory, and literature concerning the inclusion

into social studies pedagogy of computer-simulation video games

Great alarm exists among scholars, educators, and professionals in government

concerning the diminished importance of social studies education in our public schools,

which may lead to diminished capacity to maintain our government, as we know it. In

addition, the researcher reviewed the minimal research concerning the influence of the

inclusion of computer-simulation video games as part of social studies pedagogy on

motivation and learning. One conclusion from this review is that theories, opinions, and

endorsements concerning the positive influence of playing computer-simulation video

games as part of social studies teaching strategy abound but little objective or empirical

research for using computer-simulation video games as effective social studies pedagogy

exists. There is clearly a need for more rigorous studies that can shine light on whether or

not the use of computer-simulation video games in social studies classes improve student

outcomes.

Proponents of using computer-simulation video games as pedagogy opine that doing so will erase student ennui, provide differentiated education, employ multiple intelligences theory, and improve student outcomes.

Many educators acknowledge the reasoning concerning the use of computer-simulation video games as pedagogy in social studies classrooms but they are circumspect because the theory remains untested. The researcher acknowledged that multiple factors beyond the researcher's control contribute to positive student outcomes. However, in this study, the researcher assessed the relationship between using computer-simulation video games as part of social studies pedagogy and three outcomes – student motivation, student leaning and abdication of curricula.

In Chapter III, the researcher explains the design and methods of research used in the study. The researcher aligns the research design and methods to prior research, theory and literature. The researcher explains the "how" and "why" of the sample selection process and provides details of a small case study done prior to the current research, which informed the current research method and design. The researcher provides a coherent, linear and explicit chain of reasoning to explain the six assessments that the researcher used in this study. The data collection process is clearly articulated.

Chapter III

OVERVIEW OF THE RESEARCH METHOD

Preparation for the Case Study

Months before any students in the current research played computer simulation

video games, 54 students in two classes taught by the researcher took 15 minutes to

brainstorm what they each knew about the American Civil War. Standard 6.4 G 1, *Civil*

War and Reconstruction, of the NJCCCS (2005) requires that students analyze key

issues, events, and personalities of the Civil War period. The teacher/researcher

instructed students to organize their thoughts before putting pen to paper; a practice that

the researcher wanted students to inculcate into all their writing assignments. This

exercise provided the researcher with data to support her statement concerning the

diminished social studies education that K -12 students receive. In addition, the student

brainstorms informed the researcher of what knowledge each of the students had *before*

using the computer simulation game. Knowing each student's baseline knowledge

enabled the researcher to select a pair of students who shared a similar level of prior

understanding concerning the American Civil War. The researcher reasoned that studying

a pair of students with similar levels of prior understanding made determining the

influence of the computer video simulation game easier.

Current Research Sampling

The sampling in this research involved pairs of New Jersey social studies classes,

with the same curriculum, on the same ability level, taught by the same teachers, in one

large central New Jersey public high school. Classes with the same course number and

same course title usually contain a similar number of students. Student gender, ethnicity,

age, and religion in like-named and like-numbered classes most often follow similar demographics.

The classes were in a high school that has a District Factor Group (DFG) of I, thus making it a high school that is among the wealthiest groups in New Jersey. The sample was not random because the researcher sought teacher volunteers to participate in this study. The high school administrators using the regular scheduling method, which took into account student choice, student grades, teacher recommendation, guidance counselor recommendation, and parental wishes determined the students in the classes of the four teacher volunteers.

Prior to the assignment, the students in the class completed one lesson concerning the American Civil War, which was a written chapter preview with research documents. The researcher kept a tally of the statements about the American Civil War and the frequency of those statements. Correct statements far outnumbered erroneous ones by more than 20 to 1. In their 15-minute brainstorm writing, many students correctly identified Abraham Lincoln as the president during the American Civil War as well as the issue of slavery as the most important cause of the war. Most students wrote that the Union (North) fought the Confederacy (South) and won the war, noting that the North had a better economy and more men. Many students noted that young soldiers died while enduring horrendous conditions.

Yet some writings confirmed the experts who posited that American students are historically illiterate. Several comments from the 54 students illustrate this point.

"Grant was the president of the Confederacy; The Civil War began with the Battle of Gettysburg; No huge battles occurred, only fire-fights; President Lee led the Union;

The Battle of Princeton was an important event; The Civil War occurred in the 1900s."

The pre-gaming brainstorm comments, written by college preparatory sophomores in a wealthy school district in central New Jersey that has a District Factor Group (DFG) of I, (see Appendix C) validate the need for better social studies education and cry out for a method to motivate students to learn social studies. Most education experts state that high socioeconomic status (SES) predicts high academic achievement. Under DFG, schools classified as A are the poorest in the state of New Jersey and J are the wealthiest. Despite the SES, pockets of poverty exist in all districts and the students from low SES are often those who perform poorly on standardized testing. "The strongest predictor of student test scores is socioeconomic status" (Barry, 2006). Considering that, the school where the researcher conducted the case study is an I school district, what may pass for social studies education in poorer school districts is quite troubling.

According to Price and Oliver (2007), no obvious research method exists to determine scientifically the influence of computer simulation video games on learning. This researcher chose to use mixed-method research, both quantitative and qualitative.

Quantitative researchers use numbers to deliver the cold facts while qualitative researchers use words to illuminate whatever the quantitative numeric data reveal. Mixed-method research, therefore, rendered both breadth and depth to the gathered information. The researcher thus avoided dependency on a single informant, and employed data from different perspectives, thereby verifying data authenticity through triangulation. Triangulation is the main advantage of mixed-method research (Frechtling & Sharp,1997).

Quantitative research usually makes use of random sampling of ample size, thereby enabling the researcher to make generalizations regarding the relationship between the intervention and the outcome. Usually, the larger the sample, the more valid and reliable are the generalization(s). The sample in this research is eight social studies classes but they were not randomly constructed nor randomly chosen for the research. The high school administration had previously formed the classes and four teachers, each teaching two of same numbered and same level classes, volunteered to participate in the study. The final sampling was 164 students: 85 received the intervention and 81 were in the comparison groups.

Qualitative research usually has a much smaller but focused sampling. In qualitative research, the researcher is the tool. In addition to statements by students regarding motivation to learn, the researcher searched for evidence of new knowledge, meaningfulness, commonalities and patterns among the experiences, observed behaviors and the "look back" writings of the research subjects.

Unanticipated Problems, Which Altered the Original Case Study Design

"Always be suspicious of data collection that goes according to plan" (Halcom, as cited in Patton, 2002, p.207). Several problems arose during the process of the case study that resulted in design changes.

Few computer simulation video games set in history and available for use in the case study by existing curriculum demands were available. Having already begun the study of the causes leading to the American Civil War, the researcher finished that part of the required curriculum and after another week, introduced the computer simulation video games concerning the American Civil War. Three games were provided: Meier's

Civil War(2002), *The History Channel's Civil War* (2004)and *The Civil War Experience(2000)* by EZ Goal.

While the school district's technology expert had orally agreed to make one computer lab available for game installation for the researcher's planned dissertation study, scheduled for the 2007-2008 school year, this offer did not extend to the spring 2007 semester. The researcher is not a player of computer simulation video games. Ignorantly, the researcher purchased older versions of the game, which were incompatible with newer computers and newer versions of the games, which were incompatible with computers that are less modern. One game required Windows 95 or Windows 98 for installation, which are older systems that neither the researcher nor the students had. The two games requiring Windows XP, however were successfully installed. In hopes of providing more students with computer simulation video games about the American Civil War, the researcher offered to reimburse students who rented such games from Blockbuster only to learn that Blockbuster did not stock computer simulation Civil War video games.

Complicating data collection was an unscheduled ban on staff or students staying at the high school beyond dismissal time. Administrators found a Columbine-like threat on a bathroom wall on May 12, 2007. The next day, the school was in total lockdown. A $1,000 reward for anyone relaying information that led to the conviction of the threat maker(s) remains unclaimed. However, daily routines in the high school changed drastically. The superintendent placed the high school on modified lock down until authorities identified the perpetrator(s). Movement within and around the school was carefully monitored. Administrators allowed only events scheduled prior to May 12, 2007

to take place in the high school building after school hours and all supervising staff members were accountable for knowing where all activity participants were at all times.

The original research called for volunteers to stay 3 days after school in the library for 2 hours each day. Since the district maintained blocking the installation of computer simulation video games on school computers and the superintendent placed the high school on modified lock down, the original plan became impossible to implement.

Identifying the Sample Pool for the Case Study

The researcher rejected giving extra credit or paying students to use the games at home because that method of selection of student participants seemed unprofessional, inappropriate, and exclusionary of students of lesser means. The researcher did not want to misinterpret motivation to play computer simulation video games with motivation to make money. Instead, the researcher sought volunteers to play the game during out-of-school-hours, "for as long as you want" (Stake, 1995, p.241). Stake recommended that with limited time, a researcher should embrace whatever research subjects become available. Stake asserted that case study subjects should be willing subjects. Volunteers met these suggestions.

The Case Study Sample Selection

The three female and five male volunteers were all students in the researcher's college preparatory, sophomore, United States History I (1400 to 1874); a required course, which met 5 days a week for 51 minute periods. They started this course in September of 2006 and were half way through the last of four marking periods at the time of the case study. All the students who volunteered had previously completed the 15-minute brainstorming exercise citing their knowledge of the American Civil War. One

female volunteer had an I.E.P. and was classified with a general learning disability and one male was African-American. The other students were of European extraction. All were members of the economic upper middle class.

Four pairings were available for use in the case study. A male student with a female student; a student classified with a learning disability with a non-classified student; an experienced computer simulation video game player with a student who never played; and an engaged, high achieving student with a disengaged, recalcitrant, low achieving student. By assembling more than one pair, with similar baseline knowledge, the researcher hypothesized that *at least* one pair would participate in all parts of the case study.

The pair chosen for the study was the engaged, male, high achiever (student A) and the recalcitrant, male, low achiever (student B). Both males were White, unclassified sophomores, born in June of 1991. They were in the same United States History I, college preparatory (CP) class of 28 students and taught by the researcher. They were both intelligent and always treated the researcher/teacher respectfully. The researcher opined that Student A achieved higher grades than did student B because student A was motivated by grades and prepared for assessments while student B just wanted to pass.

Student A's cumulative grade in Social Studies for the 2006-2007 school year was 89 %. Students received four marking period grades, a midterm exam grade and a final exam grade. Student A's three marking period grades in sequential order were 93, 90, 90 and 80 on the midterm exam. It is common for students to drop an entire grade on a 5 month summative examination. Each marking-period grade was 20% of the year's grade. The midterm and final exams were each 10%. Student A frequently asked and

answered questions in social studies class and genuinely appeared to like the subject. Student A was absent four times, never late to class and had no discipline referrals by the researcher or any other staff member. He was never assigned either in-school or out-of-school suspension. He had no disciplinary file in his Vice-principal's office. He had one male younger sibling and lived with both natural parents. He was a cooperative, teacher-pleasing student. The researcher and Student A shared an adult/student cordial relationship.

Student B's cumulative average for the 2006-2007 school year was 66 %. His marking period grades in sequence were 78, 60 and 66. His midterm exam grade was 66. He was an only child, living with his divorced, single mom. He visited his father in Maryland during the summers. Like student A, student B frequently asked and answered questions although he usually did not do homework in preparation for the lessons. The researcher observed that student B was inherently more intelligent and better informed about world events than was student A. Student B often offered analogies to clarify his points. He was interested in social studies but unmotivated to study it beyond class time. Student B had five absences and four lates-to-school with 14 tardies to the researcher's social studies class. He often ran through the door with a pal 45 seconds after the bell sounded from socializing in the halls. He had eight demerits for cutting study hall. He served 3 days in-school suspension for a verbal and physical scuffle with a freshman male. In an attempt to register positive personal capital with both student B and his mother, the teacher/researcher praised his meaningful contributions to a class discussion and called his mom on December 19, 2007 to commend student B to his mother. On January 9, 2007 the teacher/researcher left a message on the home telephone recorder that

student B was about to fail the second marking period and needed to make improvements in his performance quickly to avoid a grade below 65. He failed with a 60. Half way through the third marking period, the teacher/researcher mailed a request home to Student B's mother to meet with the researcher and her son. The researcher, student B and student B's mother met for more than an hour. We all agreed that he was a young man with great potential who needed to develop self-discipline. There existed a positive relationship amongst the three of us.

<div align="center">Design : A Case Study; The Pilot Study</div>

Yin (2002) described a case study as empirical inquiry that investigates a phenomenon within its real-life context. This case study entailed adding the variable of playing computer simulation video games about the American Civil War to the social studies pedagogy. A pair of students drawn from one of two classes of college preparatory sophomore American history classes and taught by the researcher experienced the intervention. The researcher conducted this case study as a pilot study in preparation for this dissertation involving the same problem statements, which are the decline of social studies education in American schools as well as the lack of motivation students demonstrate for learning social studies. The researcher opined that social studies instruction is floundering and this considerable educational gap causes significant concern by some American educators, this researcher among them. The case study hypothesized that adding game play of computer simulation video games to social studies pedagogy would positively influence student outcomes by motivating students and improving student learning.

Three research questions targeted in the case study were:

1. To what extent does a positive relationship exist between playing computer simulation video games in social studies classes and students being motivated to engage in learning the higher order thinking skills necessary for understanding social studies?

2. To what extent does a positive relationship exist between students learning social studies and teachers using computer simulation video games as pedagogy?

3. What does the inclusion of computer simulation video games in social studies instruction abdicate from the curriculum?

The purpose of the study was to assess the influence of playing computer simulation video games as part of social studies pedagogy through a case study on a pair of male students in the same class. The researcher used a mixed-method acquiring both quantitative and qualitative data.

The reported minutes spent playing the computer simulation video game, points earned or levels achieved in the game and the summative test results were quantitative data. Written reflections on what both students learned by playing the computer simulation video games and the focused "look back" of open-ended questions were qualitative data. These activities helped students identify their own metacognition, useful knowledge for any learner.

The researcher used the number of minutes spent playing the computer simulation video game to assess motivation and summative test scores were used to assess retention of content knowledge and the understanding of big ideas. Advancement through increasingly more difficult levels of play assessed engagement (motivation) and learning at all levels of Bloom's taxonomy of cognitive skills, concerning the American Civil War – knowledge, comprehension, application, analysis, synthesis and evaluation. Both

Kirkpatrick (1994) and Baker and Mayer (1999) theoretical frameworks used

advancement through increasingly difficult levels of play to assess learning.

The researcher used five instruments to assess the influence playing the Civil War

computer simulation video game had on students' motivation and learning. Three

quantitative assessments were: (a) the number of minutes spent playing the game was a

measure of motivation, (b) the difficulty level attained while playing the game was a

measure of learning, and (c) the summative test score was another measure of learning

In addition, the researcher used two qualitative assessments: (a) the students wrote

reflective journals, and (b) the students completed a "look back" questionnaire to focus

on specific areas of interest.

Using five assessments accommodated the concept of triangulation. Stake(1994) stated

that

> ...triangulation has been generally considered a process of
>
> using multiple perceptions to clarify meaning, verifying the
>
> repeatability of an observation or interpretation. Acknowledging
>
> that no observation or interpretation is perfectly repeatable,
>
> triangulation serves to clarify meaning by identifying
>
> different ways the phenomenon is being seen. (p.241).

Limitations of the Case Study

The researcher studied only two students (both male) so making sweeping

conclusions from such a small sampling was unwise. The researcher worked alone and

had no one to corroborate her interpretation of the data. Nor did the researcher have data

collected by another researcher. Such data could have either altered or validated the

conclusions. The students and the researcher shared positive teacher/student relationships. Consciously or unconsciously, one or both of them may have tailored his responses to please the researcher

Case Study Data Collection

The researcher used the post- intervention, open-ended journals concerning new knowledge of the American Civil War, to inform the post-intervention "look back." The two students took home *The History Channel, Civil War,*(2004) and reportedly played the game, "for as long as they wanted." In class the next day, from memory each wrote a short reflective journal stating what he learned by playing the game. In addition, the students reported the total minutes that each spent playing the game on his own time. The post-intervention journals, "look backs," and summative tests were administered by the researcher under formal testing procedures

Each subject had to return the video game the next day so that another student might take it home. Because both subjects were self-motivated to spend more time playing the computer simulation video game, each purchased a copy of the game to continue and thereby not be subject to the availability of the teacher's copy of the game.

Student A thoroughly enjoyed his introductory night of game play. He recommended the game to Student B, who had not yet volunteered to be a research subject. Student B wrote in his "look back,"

> I bought the game because one of my friends had played it and
> told me that it was good.

Conclusions of the Pilot Case Study

The purchase of *The History Channel, The Civil War* (2004) by student A – the male, engaged, high achiever , so that he could play more and progress past his original advancement to level three, was interpreted as evidence of motivation. He reported in the "look back" that he played a total of 6 hours. This was more proof of motivation.

The male, recalcitrant, low achieving, student B, joined the study when influenced by the glowing report by student A. Student B also purchased the $30.00 game *The History Channel, The Civil War* (2004). After playing for a reported 4 hours, (evidence of motivation) student B advanced through all 12 levels (evidence of learning). In response to the "look back" question, "What level did you achieve?" Student A wrote,

I beat the game.

Student B wrote,

I completed the game.

The researcher interpreted the different verbs used by the two students as reflections of two different motivators: (a) winning and (b) experiencing. If the game motivated students differently then perhaps, gaming as social studies pedagogy will appeal to more students than if they both reported "winning" or both "completing."

The Kirkpatrick (1994) model for assessing if learning occurs when video games are part of learning, uses winning the game at increasingly difficult levels as an assessment of learning. Kirkpatrick posits that successfully advancing through more challenging levels of tiered play (winning or completing) may be how to determine if players improve their metacognitive skills. Kirkpatrick also theorizes that the transfer of

what students learn may be determined if improved game performance occurs from one level of the game to the next.

The researcher, seeking to identify new knowledge and any commonalities between the two subjects' learning, compared their pre-gaming written responses to their post-gaming journals and "look backs." In the pre-intervention writing, student A recalled much of the information taught through completing the chapter preview and participating in the class discussion. As directed, he organized his writing before commencing the narrative, using the advantages of both sides as the central scaffold. He then made a list of facts unrelated to the "advantage" theme. Two "facts" on the list were incorrect. Student A placed the U.S. Military Academy at West Point as being in the South. He also distorted the association of the Native Americans (Cherokee Nation) with the Confederacy by stating that they were allies.

Student A's post-gaming commentary contained all new and correct information. He cited the contemporary disparaging slang for the Union's retreat from the First Battle of Bull Run as the "Great Skedaddle." He described Civil War weaponry in detail, identified Virginia as the major theatre of war and stated,

> A popular [military] strategy was to get around enemy forces to cut off
>
> their escape. (a big idea).

Although he did not say so, his ascendance through twelve levels of play indicates that he applied winning strategy to get there. If the Kirkpatrick and CRESST theories are valid measures of learning and applying learning then both students evidenced higher order thinking skills as identified in Bloom's taxonomy.

Student A was motivated to learn more about the Civil War.

I went home and tried to find out some Civil War movies to see so I can
learn more.

He wrote that some movies were *Gone With The Wind (1939), Colt (2005)*
,Gettysburg(1993) and *Cold Mountain (2003)* . The researcher noted that movies, not
books were his chosen method of expanding his knowledge about the American Civil
War. Film directors often use artistic license when bringing history to the big screen.
Student A's indication that watching commercial films was his way for learning more
about the American Civil War reminded the researcher that teachers need to inform their
students about the historical inaccuracies that abound in the movies.

In the pre-intervention writing student B did not follow directions and organize
his thoughts before hand. He listed eight facts and stated that Jefferson Davis rather than
Robert E. Lee surrendered to the North, a misrepresentation that disregards Davis' denial
and stubborn reluctance to capitulate to General Grant. In Student B's post-intervention
journal, he commented on the inaccuracy of Civil War era weapons and the novelty of
viewing the Civil War from two perspectives, the North and South. Student B wrote in
his post-intervention journal,

Being able to see both sides' viewpoints also helps too.

This comment reveals a propensity for interpersonal as well as intrapersonal
intelligences(Gardner, 1984). These intelligences are usually missing from learning
assessments. Student B constructed understanding from polar perspectives. His comment
speaks to experiencing which increases learning (Dewey, 1938). He went on to explain
how playing the game clarified for him, unlike anything else that preceded this
experience, the severe and enormous suffering of all Civil War soldiers. His post game

reflection was empathetic. Studying affect was not part of this study but it is cited as another benefit that proponents of using computer simulation video games herald. Cooper (2006), reporting on the proceedings at the Sixth International Conference on Advance Learning Technologies stated,

> Affective issues were revealed to be at the heart of
> learning and positive emotion was generated in the
> computer classroom where teachers and children
> continually collaborated around the machines.
> Achievements at the end of two years were higher
> in computer embedded classrooms, as was self-esteem.
> (p.1204).

Learning embraced both minds and hearts. Student A's answer to a question about his feelings concerning the inclusion of gaming in social studies pedagogy was,

> It is a fun and easy way for students to learn.

Student B stated,

> When I saw a battle that was on the game it would make me excited and I
> could relate from the game to the [text] book.

Many educators testify to the power of positive emotion to promote learning. The amount of time spent "playing" (having fun) while learning supports the inclusion of computer simulation video games into social studies pedagogy. According to Csikszentmihalyi (1991), a professor of Human Development and Education at the University of Chicago, we are more satisfied when we learn something primarily because we find the task enjoyable and not because it is necessarily useful. As cited by Sylwester

(1995) a student who has a "flow experience" learns free of anxiety. Students in the "flow state" identify with the curriculum they learn and are happier because they are in a "flow state." Emotion and learning are closely connected "Emotional involvement is prerequisite to learning; emotion is the engine that propels attention, which, in turn, makes learning and memory possible. (p.72).

Student B synthesized what he knew about warfare before playing the game with his post-game understanding. He therefore constructed knowledge. Student B reported learning no "big ideas" yet he stated,

The warfare of the time period was more brutal than what we have

now.

The impersonal almost mechanical nature of modern warfare is a "big idea."

Student A stated that he learned that secession and slavery caused the Civil War. These are not "big ideas," – generalizations applicable to all time and place – but they are enormously significant conclusions about the American Civil War that he came to understand and not simply memorize.

Student A performed at his usual high achievement level on the summative assessment. Student B, the underachiever, performed 11% higher than his average test grade. When asked if he would recommend making computer simulation video games a regular component of social studies pedagogy, Student B's response was,

Yes, because I think that kids would be more interested in electronics

than reading books.

The researcher attributed the student's improved summative test score to his improved motivation to learn through playing a computer simulation video game.

This case study pilot test revealed that adding a computer simulation video game to the pedagogy of social studies instruction did improve motivation to engage in learning. Student B played the game for 4 hours and Student A played for 6 hours. Student A sought other sources from which he could learn about the Civil War. The traditional summative test showed that both subjects learned the curriculum. The underachiever demonstrated significantly more content knowledge and understanding than he usually did on summative tests. This suggested to the researcher that students who are disengaged from traditional pedagogy might benefit more from the inclusion of computer simulation video games to social studies teaching than students who are already engaged. This observation supported differentiated education. Both subjects evidenced motivation and learning. After the pilot test, the researcher began the actual study using the case study design and method.

Research Sampling For the Full Case Study.

The sampling in this research involves pairs of New Jersey social studies classes, with the same curriculum, on the same ability level, taught by the same teacher, in one large Central New Jersey public high school. Classes with the same course number and same course title usually contain a similar number of students. Student gender, ethnicity, age and religion in like-named and like-numbered classes most often follow similar demographics.

The classes were in a high school that has a District Factor Group (DFG) of I, thus making it a high school that is among the wealthiest groups in New Jersey. The sample was not random because the researcher sought teacher volunteers to participate in this study. The students in the classes of the four teachers who volunteered to use the

intervention with one class in a pair of classes, each with the same number had been assigned by the high school administrators using the regular scheduling method, which took into account, student choice, student grades, parent choice, teacher recommendation and guidance counselor recommendation, determined same level.

Two of the teachers were female and two were male. Each of the male teachers had masters' degrees as well as credits beyond their masters. One had 5 years teaching experience and the other had 10 years teaching experience. Both men were White and in their early thirties. One female was a 22 year old student teacher. The other female was 51 years old, held a masters' degree and had taught 7 years as a middle school special education teacher and 2 years as a high school social studies teacher.

The 42 students in two College Preparatory (CP) classes taught by two different teachers played *Food Force*, a free computer simulation video game developed by designers who worked for the United Nations. Anyone can download it off the web. The 43 students taught by two other teachers played *Civilization III*, a sophisticated commercial game. The 85 students in four classes received the intervention.

The two teachers who played *Food Force* with one class of their pairs of classes taught the same curriculum, using the same materials to 39 students in the two comparison classes. One class had 23 students and one had 16 students.

The two teachers who played *Civilization III* with one class of their pairs of classes taught the same curriculum to 42 students in two comparison classes. One comparison class had 25 students and the other comparison class had 17 students. Eighty-one students in four classes were in the comparison group. The final number of students

in the study could have been higher than the 166 who participated except for absences and students' failure to return informed consent forms.

Design and Method of the Study

The Kirkpatrick (1994) (see Table 1) and Baker's and Mayer's, CRESST (1999) (see Figure 1) frameworks guided the design of the study. The design focused on the second level of the Kirkpatrick framework, *learning*, and the third level of the CRESST study, *self-regulation*. The entire CRESST model assesses learning and defines self-regulation as a sub-set. Both the Kirkpatrick and the CRESST framework designs evaluate learning, although assessing learning through the playing of computer simulation video games in public schools was not the original intention of either Kirkpatrick or the CRESST designers.

For the current study, the researcher sought teacher volunteers, who were willing to be part of the experiment and were members in the social studies department of one central New Jersey suburban high school. Four social studies teachers volunteered to use a simulation video game recommended by the researcher. No previous knowledge of gaming was necessary. The research investigated the effects of using simulation video games as classroom pedagogy regardless of teacher familiarity with computer simulation video games. The researcher reasoned that if familiarity with playing computer simulation video games was a pre-requisite for participation in the study, fewer teachers would have volunteered.

The researcher assessed the differences in learning and motivation between each teacher's pair of same-named and same-numbered classes by using the design and method. (see Figure 2). Teachers included the games in classroom instruction as they
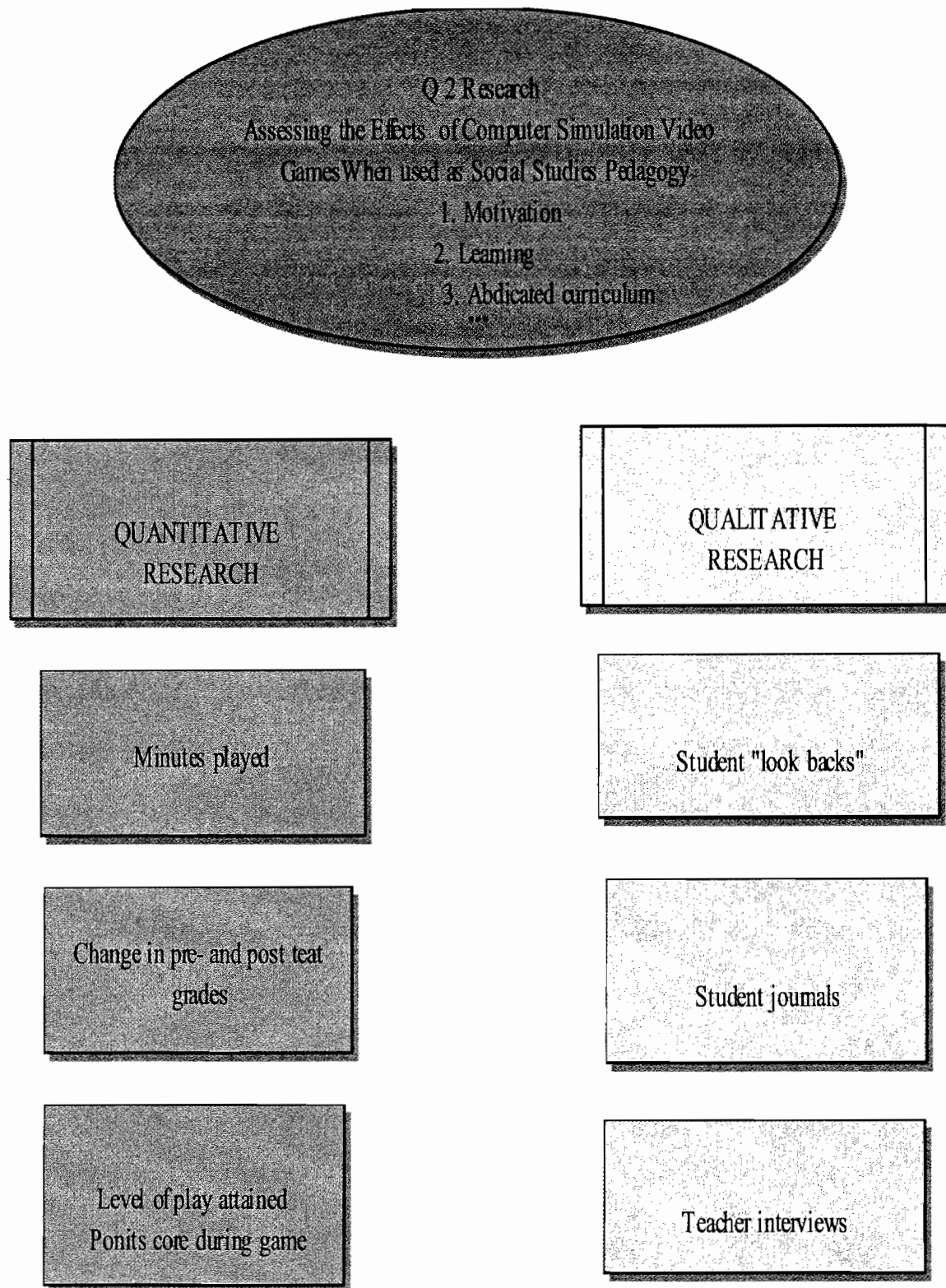
Figure 2. A plan of action for the study of the influence of computer simulation video games on motivation and learning when used as pedagogy in ninth grade social studies classes

saw fit and they made the games available to students to play outside of class time. The same teachers administered assessment instruments at the behest of the researcher. The teachers used the intervention in one class of each pair of the same-named and same-numbered classes, during the first semester of the 2007-2008 school year.

The curriculum goals and objectives were the identical for each teacher selected and researcher approved pair of classes. Teachers taught the same curricula to both classes in their respective pair of classes but used different pedagogies. With the comparison classes the teachers used traditional pedagogy and with the intervention classes they used a computer simulation video game. The researcher aligned the software, the specific simulation video game, used as part of the teachers' pedagogy, with the specific NJCCCS (2005) for social studies.

The researcher used mixed methods that included both quantitative and qualitative data collection. The teachers administered all written assessments under traditional, formal testing procedures, providing for uniform time and without accommodations of any kind. Students who had Individual Educational Plans (IEPs) and 504s were not accommodated because student achievement on the assessments did not count toward any report-card grade. The teachers followed a written protocol. (see Appendix D)

Quantitative instruments included the following:

1. The researcher used scores on content pre-tests and post-tests (see Appendixes E & F) to assess the relationship between using simulation video games and self-regulation (motivation) when social studies pedagogy included the playing of simulation video games.

2. The number of minutes spent engaged in playing the game was a quantitative measure of motivation.

3. The number of points attained while playing the game was a measure of learning as was the advancement through increasingly more difficult levels of simulation video game play. The researcher assessed the presence of learning at all levels of Bloom's taxonomy – knowledge, comprehension, application, analysis, synthesis and evaluation as the student strategized through higher levels of play. Both the Kirkpatrick (1994) and the Baker's and Mayer's CRESST (1999) theoretical frameworks used this as an assessment of learning when simulation video games were used to train.

In addition, the researcher, who is the primary tool for qualitative research, used three qualitative instruments. Students played the simulation video games during social studies class and on their own time:

1. completed a generic "look back" questionnaire (see Appendix G), developed by the researcher, and reviewed by the teachers in the study, which focused on students' emotions and the students' perceptions of their own metacognition. The researcher designed the "look back" so that it provided only minimal direction because unstructured queries "…can provide a greater breadth of data than other types, given its qualitative nature" (Fontana & Frey, 2000, p. 652).

2. The teachers asked students who played the games outside of class time to write reflective journals. These students wrote about their gaming experiences and what they thought they would have been doing if not for playing the simulation video game.

3. The researcher interviewed the four teachers involved in the study.

The use of six assessment instruments accommodated the concept of triangulation. Stake (1994) stated that "...triangulation has been generally considered a process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation. Acknowledging that no observation or interpretation is perfectly repeatable, triangulation serves to clarify meaning by identifying different ways the phenomenon is being seen" (p.241).

Each teacher administered to every student in the intervention classes and the comparison classes, a pre-test and post-test developed by the researcher (see Appendixes E and F) and reviewed by the teachers involved in the research. The classroom teachers had reviewed these tests and accepted them as reliable. Students' individual grades on the pre-tests informed the researcher of students' prior content knowledge and established "markers" from which each student's learning was measured. The researcher coded and graded both pre-tests and post-tests although the classroom teachers administered them. The classroom teachers acted only as "conduits" for data collection. A colleague of the researcher re-graded the pre-tests and post-tests to insure grading reliability. The researcher required teachers to follow a written protocol when administering the pre- and post-tests and using the intervention.

The post-tests assessed newly acquired content understanding. In "look backs" students self-reported advancement through increasingly difficult levels of the game or the cumulative amount of game points earned. Teachers did not require students to reach any specific levels of difficulty. Students self-reported the number of minutes that they played the game

While the researcher designed the qualitative instrument known as a "look back" the teachers who administered the "look back" reviewed it and agreed with the researcher that the open-ended questions that were posed were valid questions related to the stated purpose of the study. The researcher sought to identify any evidence of students having been motivated to learn through playing the computer simulation video game. The researcher looked for patterns in the student responses as well as specific characteristics of the simulation video games that motivated students to play and learn. The researcher looked for evidence that students constructed new content knowledge and improved their understandings of social studies' "big ideas," as well as the demonstration of higher-order thinking skills.

Chapter Summary and Transition

Chapter III provided information concerning a pilot study that the researcher conducted prior to initiating the action research for this dissertation. The purpose of the pilot study was to inform the researcher and have it assist the researcher in determining the design and methodology of this larger study. To guide the researcher in developing the design and method of the case study the researcher reviewed the literature concerning the effectiveness of computer simulation video games on learning. Parts of Kirkpatrick's (1994) four levels of evaluating training and Baker's and Mayer's (1999) federally funded (CRESST) model were adaptable to the case study as well as this larger research project.

The pilot study, which informed the design and method of the larger research effort, involved a pair of sophomore males in a college preparatory United States History I class taught by the researcher. The same intervention as used in this research, that is

including computer simulation video games as part of social studies pedagogy, was the intervention in the pilot study. The pilot study data informed the current research and confirmed for the researcher that the objective of the research could be met by the design and method that the researcher adopted.

Although there is much theory and opinion on the positive influence on student outcomes when using computer simulation video games as pedagogy, there is a paucity of evidence. The three questions addressed by the current research were:

1. To what extent does a positive relationship exist between playing computer simulation video games in social studies classes and students being motivated to engage in learning the higher order thinking skills necessary for understanding social studies?

2. To what extent does a positive relationship exist between students learning social studies and teachers using computer simulation video games as pedagogy?

3. What does the inclusion of computer simulation video games in social studies instruction abdicate from the curriculum?

After studying the Kirkpatrick (1994) and Baker and Mayer's (1999) CRESST frameworks, the researcher decided upon mixed methods research. Three quantitative instruments as well as three qualitative instruments supplied the data. The three quantitative instruments were (a) pre-and post test scores. (Learning assessment); (b) minutes spent playing the computer simulation game outside of class time. (Motivation assessment); and (c) points scored or levels of the game attained. (Learning assessment)

The three qualitative assessments were: (a) student reflective journals. (Learning and motivation assessment); (b) written student "look backs" (Learning and motivation

assessment); and (c) teacher interviews. (Learning, motivation and abdication of curriculum assessment).

Four volunteer teachers applied the intervention and they collected the data during the fall of 2007. The sample was not random because the administration of the high school placed the students in each class following regular placement procedures before the school year began. The sample size used in this research was 166 students in eight classes. Eighty-five received the intervention and 81 were in the comparison group. Four teachers, two males and two females with varied teaching experience and varied computer simulation video game experience volunteered to use the intervention with one class in a pair of classes, which they taught. Each pair of classes was the same subject and the level.

In Chapter IV the researcher reports the research findings. The researcher provides Excel sheets that list the pre-test and post-test scores on cognitive tests developed by the researcher, and reviewed and accepted by the four volunteer teachers whose pairs of same-named and same-numbered classes were used in the research. The researcher presents and analyzes the data including the mean, median, mode and standard deviation of each student by using Microsoft Excel. Direct quotes of both students and teachers taken from the three qualitative tools – "look backs," student journals, and teacher interviews – afford a deeper understanding of the reported quantitative data.

Chapter IV

DATA AND DATA ANALYSIS

Overview

The researcher conducted the mixed method research over a 60-day period during the 2007 fall semester. Students (n =186) and 4 teachers in a large Central New Jersey suburban high school with a DFG of I and approximately 2,400 students, provided the data. The researcher gained permission from the Acting Superintendent of schools, the Principal of the high school, and the District's Technology Supervisor. Students, parent/guardians and teachers completed informed consent forms in compliance with the standards of academic research (see Appendix A). The classes were not random nor were the teachers. The teachers who participated volunteered and chose the pair of their assigned classes that they involved in the research. The school administrators formed the class rosters prior to the research by following their usual method, which took into account, grades from the previous school year, student selections, parental wishes, and recommendations by previous teachers and counselors.

In Chapter I the researcher supported her concern for the decline in social studies education in the United States by citing historians, educators, and government officials who share the concern. In Chapter II the researcher explained that while theories extolling the positive influence of computer simulation video games on motivation and learning abound there exists a paucity of empirical, objective research to support those theories. The researcher cited two previously used frameworks (Kirkpatrick, 1994; and (Baker & Mayer, 1999) which assessed the influence on motivation and learning when the military and industry used computer simulation video games to train personnel. In

Chapter III the researcher explained the design and method used in the current research. The researcher adopted some previously used quantitative assessments and complemented them by adding qualitative assessments thereby creating a new paradigm for assessing the effectiveness of computer simulation video games on motivation and learning. The researcher also investigated what areas of the curriculum might be abdicated if teachers used this new pedagogy. The researcher used mixed methods employing three quantitative and three qualitative assessments to provide the data. The three qualitative assessments were as follows:

1. The number of minutes that students played the computer simulation video games outside of class-time was one assessment of student motivation. This assessment was used by Kirkpatrick (1994) and Baker's and Mayer's (1999) to assess the effectiveness of training through the use of computer simulation video games.

2. The researcher used a statistical measure of the mean difference (p value) between pre-test scores and post-test scores in both comparison and intervention classes of each pair of classes in the study. The researcher used Microsoft Excel (see Appendix H) and Statistics Program for Social Sciences (SPSS) (see Appendix I) to compute the data and after analyzing the SPSS printouts, the researcher drew conclusions concerning the influence on student learning when computer simulation video games are used as pedagogy.

3. The researcher asked the teachers to record the number of points or levels of difficulty attained when students played computer simulation video games as part of social studies pedagogy. Kirkpatrick, (1994) and Baker and Mayer (CRESST, 1999) used points earned and levels of difficulty achieved as assessments when they researched the

influence of computer simulation video games on training in the military and industry. By using Microsoft Excel and SPSS, the researcher determined the means, medians, modes and standard deviations of the pre-test and post-test scores of the eight classes involved in the study, comparing the difference in results between each pair of same-named and same-numbered classes taught by the same teacher. Although each student's relevant statistics were calculated the researcher compared class not individual student statistics. Additionally, the researcher reported the statistics by gender.

The researcher used three qualitative assessments.

1. Students wrote reflective journals

2. Students wrote answers to questions on a generic "look back" (see Appendix G) which was developed by the researcher and reviewed by the teachers who participated in the study. In these assessments, the students wrote about their perceived motivation and their perceived learning when teachers employed playing computer simulation video games as part of social studies pedagogy. The reflective journals and student written "look backs" "fleshed out" what, how and why the students perceived that they did or did not learn when playing computer simulation video games as part of social studies.

3. After collecting the empirical data and two qualitative assessments, the researcher privately interviewed each of the four participating teachers. The researcher asked the teachers to share their perceptions concerning student motivation and student learning when the teachers used computer simulation video games as pedagogy in social studies classes. The researcher analyzed the three qualitative assessments to asses the influence of computer simulation video games on motivation and learning.

The researcher made two games available for the study, *Food Force* and

Civilization III. Both games addressed several of the NJCCCS (2005), particularly those

concerning geography. Standard 6.6 reads, "All students will apply knowledge of spatial

relationships and other geographic skills to understand human behavior in relation to the

physical and cultural environment." School districts in New Jersey must teach their

students by the end of Grade 12 the following: (a) The World in Spatial Terms; (b) Places

and Regions; (c) Human Systems; and (d) Environment and Society.

Standard 6.5 states that all students will acquire an understanding of key

economic principles. These included: (a) Economic Literacy and (b) Economics and

Society.

Food Force is a game developed by the United Nations, specifically to teach

students about world hunger and the United Nations' hunger relief efforts. *Civilization III*

is the third in a series of four computer simulation video games developed by Meier that

have players "travel" through time, advancing civilizations from their beginnings to the

year 2050 A.D. The player of the game (the student), may guide the civilization through

the ages by making effective choices. The player must demonstrate understanding the

influences and inter-relationships of geography, technology, commerce, diplomacy,

military strength, religion, politics, and cultural characteristics upon a specific

civilization, to "travel" successfully through time. If the player makes poor choices,

another civilization may dominate or destroy the player's civilization. A player may

choose a civilization (i.e. Roman, British, Japanese, Mayan) or be assigned a historical

civilization at random.

Four teaching colleagues of the researcher, two males and two females, volunteered to use a computer simulation video game in one class of a pair of same-named and same-numbered social studies classes. A male social studies teacher age 34, who has 4 years experience and holds two masters' degrees in education and a female student-teacher, age 22 collaboratively developed a lesson for teaching about world hunger with their comparison classes and used as social studies pedagogy the same computer simulation video game, *Food Force,* with their intervention classes. Students were given the URL for *Food Force* http://www.food-force.com and were told that they could download it themselves to play at home. All four of their classes were CP.

A female social studies teacher, age 51 with a masters' degree in special education and 2 years experience teaching high school social studies and a male social studies teacher, age 31 who has two masters' degrees and 10 years of teaching experience taught a pair of like-named and like-numbered classes. Within each pair of classes, one was taught the curriculum through lecturing and the other was taught the curriculum through playing the computer simulation video game, *Civilization III.* The object of the lessons was to improve the understandings of the generic characteristics that must be present in a civilization for it to prosper. The researcher made 13 games available for students to bring home to play. The male teacher's classes were honors classes, World History (H) that carry a 1.5 multiple when calculating Grade Point Average (GPA) for class rank. The female teacher's classes were CP.

There was no threshold of gaming expertise required for the teachers or students. The researcher used a one-dimensional linear scale similar to a Likert scale but using 10 numbers like the "happy faces" now commonly used in hospitals for patients to self-

assess their levels of pain, where 1 meant that the responder had no gaming experience and 10 meant the responder was proficient in gaming. The female student-teacher, L, who used *Food Force*, placed herself at 3 on the scale. The male teacher, G, placed himself at 6. The male teacher who played *Civilization III* with the intervention class placed his gaming expertise at 6 on the scale while the female teacher placed herself at 1.

The researcher designed a protocol for administering the assessments and for data collection (sees Appendix D). The researcher was not present when the teachers taught any of the eight classes and therefore was unable to observe and evaluate how closely the teachers followed the protocol. Because the researcher relied on the good will of colleagues, the researcher did not insist on any particular number of days that each class be involved in the study but only that the class- time spent teaching both the comparison classes and the intervention classes be the same. Neither did the researcher specify that the teachers use a particular traditional method of teaching with the comparison groups.

The two teachers who played *Food Force* with the intervention classes planned together, allotting 2 days for game play and 2 days for teaching the curriculum traditionally in the comparison classes. A technology glitch cut the female teacher's time in the computer lab to one day. Students in the comparison classes completed the activities in one day rather than the planned 2 days. The female teacher therefore spent one class period teaching the same curriculum in both the intervention and comparison classes. Consequently, the male teacher spent 2 days playing the game and only 1 day teaching traditionally: a breech of protocol. He gave as his reason,

The kids were really into it. (Teacher 5G, November 20, 2007).

The researcher created the pre-tests and post-tests and aligned them to both the curriculum and the two computer video simulation games used in the study. Before administering the pre-tests and post-tests, the four teachers reviewed them and considered them appropriate (see Appendixes E & F). The 166 students in eight ninth grade classes completed the pre-tests and post-tests.

The students in the intervention classes had the opportunity to play the games outside of class-time if they were motivated to do so. It was possible for students to download off the internet, *Food Force*, a free educational game. The teachers made available to interested students the thirteen games of *Civilization III,* which the researcher had purchased. All students who played the computer simulation video games in school or at some other time wrote reflective journals or completed written "look back." (see Appendix G) In the look backs students answered questions about their perceived motivation to play the computer simulation video games, their perceived learning acquired through playing the games and their thoughts concerning what they would have been doing if they were not playing one of the computer simulation video games used in the research. Students did not learn their scores on the pre-test or on the post-test; therefore their grades did not influence their perceptions. The response to the question in the look back, which asked the student what the student would have been doing at the time that the student was playing the computer simulation video game helped the researcher address the final question concerning what students perceived as abdicated from their learning when computer simulation video games become part of social studies pedagogy.

The researcher assessed that due to the voluntary nature of the research, many students chose not to play the games outside of class, and not to write look backs or reflective journals. Although, teachers gave students 15 minutes to complete the qualitative assessments, no teacher demanded any specific amount of writing and many students wrote very little even though the questions were open-ended. Teachers told the students that the assessments would not be part of their actual grades. The teachers and the researcher opined that because the written assessments "did not count" for a grade, not all students completed them.

Eight ninth grade World History classes participated in the study. Six were CP classes and two were honors (H) classes. Four classes (one from each pair) were comparison classes that learned the curriculum without playing either of the games. Four intervention classes played one of the two games

The school district blocks students from accessing games, which are available on-line lest they play video games rather than complete assigned work when in the computer labs therefore, the district's technology supervisor removed the block in one computer lab. The district's technology supervisor downloaded the free computer video simulation game *Food Force* onto a lab with 25 personal computers. There were enough computers for each student to play the game independently. The school district's technology supervisor also downloaded thirteen copies of *Civilization III*, which the researcher had purchased off e-bay for $3.99 each. A more recent design of the game, *Civilization IV*, contains a larger choice of civilizations and improved graphics. This newest version of the game sells for $40.00. The researcher chose to purchase the older version of the game

because doing so was more economical and the researcher wanted to abide by all copyright laws.

Data Collection for Assessing Student Motivation.

The first research question was:

1. To what extent does a positive relationship exist between playing computer simulation video games in social studies classes and students being motivated to engage in learning the higher order thinking skills necessary for understanding social studies?

The researcher used minutes spent playing the simulation video game outside of class time as one assessment of student motivation. No students in either intervention class reportedly played *Food Force* during any out-off-class time. Therefore, no motivation was recorded using out-off-class playing time as an assessment for the students who played *Food Force*. The teachers posited that the satisfactory performances earned by the students who played *Food Force* were the reason that students did not feel the need to play the game at home.

The class that worked on the computer was more enthused about playing with the technology. This was a much better game than what I had expected. (Teacher 5G , November 20, 2007)

The two teachers, a male and female, played *Food Force* with the intervention classes and taught more traditionally in the two comparison classes. In the comparison classes, the teachers had quads of students jigsaw readings concerning world hunger and relief efforts employed to address it. The teachers scheduled 2 class days to teach the curriculum in both the comparison and intervention classes; however, they discovered

that they needed only one class period with the comparison classes for students to both jigsaw and report on what they learned.

> The students were not really interested in the topic. There seemed to be a lot of talking about other things not connected to the lesson. (Teacher L, November 20, 2007)

The two teachers used the same reading materials and comprehension questions with each of their comparison classes. The male teacher broke protocol by playing the game for two class periods with class 5G. The number of class days spent learning the material was therefore different in classes 5G and 1G because he found that the students in the comparison group, 1G, were bored and the students in the intervention group 5G were interested. Recognizing that the comparison group was disengaged from the curriculum, he moved on to the next topic. Education researchers define engagement as "…the willingness to make the psychological investment required comprehending and mastering knowledge and skills" (Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989, p.177). In the district, in which the research occurred, the World History curriculum focused on world events after the year 1550 A.D. Because the curriculum included so much, it was necessary for any teacher to select to spend more time on some issues and less time on others. The male, experienced teacher's adjustment to students' interests was a common and accepted practice.

Students in the intervention classes 1L and 5G raced against a clock to assess the severity of the hunger problem and to coordinate relief services in the virtual world of *Food Force.* They worked to achieve success although events beyond their control such as civil wars and natural disasters often thwarted their progress. These "events" were part

of the game design. Students accumulated points, shown at the bottom of the screen, as they demonstrated through playing the game that they knew how to determine hunger relief needs and successfully carry out six different relief missions. A poor point score received no penalty. As part of the game's design, a kindly voice encouraged low scoring students to do the mission over. Many computer links from which students could access more information about world hunger were available on the *Food Force* website ostensibly to help students improve their scores.

Class 5 G played *Food Force* for 2 class days. The students in 5G saved their scores from the first day of play and were able to improve them on the second day. Most students reported completing the game in class and improving their point scores to their own satisfaction. Although none of the students who played *Food Force* in class, downloaded it at home to play, the class 5G students wrote commentary in their reflective journals that supported the premise that playing *Food Force* was motivating. A female student wrote,

> I liked the game because it was a quick way to learn the ways in which food can be delivered to people in need. (Student 5G19, September 25,2007)

Another girl expressed both motivation and engagement when she wrote,

> I liked that it was interactive; you had to act just like you would if you were actually doing it [delivering nutritional packets to starving people]. (Student 5G5, September 25, 2007)

A male student echoed the same sentiment when he wrote,

> Usually, when I don't like something I tend not to pay attention, but I did

like this game and it had my attention. (Student 5G8, September 25,

2007)

One reason the male, 31 year old teacher with 4 years experience gave for allowing

students to play the game two days was that:

They were really enjoying themselves and seemed to be learning. (Teacher G,

September 25, 2008)

This comment by the participating teacher suggested that the students were motivated to

learn by playing the game in spite of the fact that no student reportedly downloaded

during out-of-class time.

The second computer video simulation game used in the research was *Civilization*

III, designed by Meier. Teachers followed the same protocol, teaching the comparison

classes through more traditional methods and playing *Civilization III* with the

intervention classes for one class period each. *Civilization III* is a commercial game that

is *much* more difficult to play than *Food Force.* The game begins at the beginning of

earthly civilization. The player(s) must choose a civilization to develop and that

civilization may progress through time all the way to the mid-21st century or have a

competing civilization dominate or destroy it. Progress is linear and based upon actual

historical developments. A player may use different strategies or a combination of

strategies to prosper. A gamer may win by physically dominating two-thirds of the map,

through diplomacy, by achieving overwhelming cultural supremacy, by developing the

best technology, or through military victory. It is necessary for the player to comprehend

and synthesize understandings about diplomacy, technological development; cultural

idiosyncrasies, economics, geography, religion, military prowess, governmental designs,

and leadership to have the civilization that they represent in the game, survive and prosper.

> The disconnect between facts and rules that students memorize and knowledge they can use to solve real problems simply doesn't happen in epistemic games. Epistemic games are based on making and applying knowledge. Instead of learning facts, information, and theories first and then trying to apply them, the facts, information, and theories are learned and remembered because they are needed to play the game – that is, to solve some real world problems – in the first place. (Shaffer, 2005 p.14)

Because the researcher made only 13 games available for the research, most students played *Civilization III* in pairs in the classroom but independently during out-of-class time. First time players followed an audio and animated tutorial available for purview at the beginning of the game that explained how to play. Experienced gamers skipped the tutorial, apparently familiar with generic functions of computer simulation video games.

The research design used number of minutes that students played the game outside of class-time to assess motivation. More than one-half of the students in class 2H played the game, *Civilization III*, outside of class-time for a total of 1,175 minutes (roughly 19.5 hours). According to the research design, this was evidence of motivation for those 11 students. Nine males played for 820 minutes for an average of slightly more than 1.5 hours each. Four females played for 355 minutes for an average of slightly less than 1.5 hours each. The remaining 11 students did not play the game outside of class time. Student 2H24, a female student, played for 70 minutes at home because,

I wanted to see how far I could go. It was interactive and I was more

interested. She wrote in her "look back", I would recommend

playing video games because I do feel I gained a much better

understanding for civilizations and it was enjoyable.

September, (Student 2H24, September 24, 2007). This student's grade increased

from 30% to 35%, a 17% increase. A male student who reportedly played *Civilization III*

at home for 90 minutes said that he played the game,

...to learn more about civilization in a fun way. (Student, 2H21, September

24, 2007)

His score on the assessment increased from 20% on the pre-test to 35% on the post-test.,

a 75% improvement. He recounted how he played

...other history games such as Stronghold Crusader, a game

based in the Medieval Times. (Student, 2H21, September 24, 2007)

A female student who played an additional 75 minutes reported,

I played the game at home because I was bored and wanted

something to entertain me. Also, I wanted to understand how

to play the game. (Student, 2H2, September 24, 2007)

Her grade increased from 40% to 50%, a 25% improvement. Most of the responses were

positive but one female wrote,

Games should not be used to teach in school. It's better when the teacher

gives you notes and questions from the book. (Student, 2H16, September

24, 2007)

She did not take the game home to play on her own time. Her grade increased from 25% to 30%, a 20% improvement.

Not one of the female teacher's students in the intervention class asked to take the game home. The researcher assessed that playing the game, *Civilization III*, as having no influence on motivating the students in class 10 S. The two teachers who used *Civilization III* as pedagogy had widely disparate data concerning students requesting to take the game home. Although no student requested to borrow the game to play during out-of-class time, Teacher S reported,

> Boys in particular really loved the game. One way to beat the game was to annihilate the enemy (November 22, 2008).

The violence in video games has many adults alarmed. Teacher S's comment implied that it was the appeal to be violent in the virtual world that drew the males to the game. The level of violence was a question on the look back and the researcher will address its relevance in Chapter V.

The final quantitative assessment for motivation and learning was the record of number of points won playing *Food Force* and levels achieved playing *Civilization III*. Students and teachers failed to record points while playing *Food Force*. Only one student who played *Civilization III* reported getting to the third level. Several students reported starting over when their civilization died out or another civilization conquered it.

Data Collection for Assessing Student Learning

The second research question was: 2. To what extent does a positive relationship exist between students learning social studies and teachers using computer simulation video games as pedagogy?

A quantitative measure of learning that the researcher used was the difference between points scored on the multiple-choice pre-tests as compared to points scored on the multiple-choice post-tests. The questions were not simply knowledge level. Some of them required higher order thinking skills to answer correctly. Students who answered correctly demonstrated understanding, analysis, synthesis, and evaluation skills. The teachers administered pre-tests and post-tests to students in the intervention classes and the comparison classes under standard testing procedures, which the researcher outlined in the protocol. The researcher collected the pre-tests and post-tests, graded them and then had a colleague re-grade them to check for human error. The researcher graded two pre-tests incorrectly and corrected the mistakes after the check.

. Teachers L and G used cooperative learning to jigsaw readings and comprehension questions. Teachers H and S lectured. The researcher compared the difference in average means, medians, modes, and standard deviations of the intervention classes' scores with the comparison classes' scores (see Appendix H). Because Microsoft Excel calculated mean scores of the 8 classes, the researcher used p tests, not t tests to determine significance.

In her comparison class 4 L, the female, 22-year-old, graduate student- student teacher arranged quads heterogeneously by student achievement levels yet homogenously by the specific reading. The students in each quad read one reading and collaboratively answered the accompanying questions. The teacher then rearranged students into new quads, grouped heterogeneously by topics with no regard for student achievement level. Each student in the second quad contributed a different reading and comprehension questions and answers concerning world hunger and efforts to alleviate it. Within this

second set of quads, students taught the other three members the information and understandings that their first group learned from the readings. The teacher called upon one volunteer from each of the second quads to share orally with the rest of the class the information that the second set of quads learned. The teacher clarified any misunderstandings that were evident in the oral reports.

The other teacher whose intervention class played *Food Force* was male, 31 years old, with 4 years teaching experience and a master's degree in education. As with class 4L, the readings were jigsawed during 1 day with the comparison class 1G. Class 1G self-selected their first quad and all four students read the same article and collaboratively answered the same comprehension questions as the other comparison class, 4L. The male teacher arranged the second set of quads heterogeneously by reading material without regard to student achievement.

The members of the second quad taught the information from one of the four readings to the remaining quad members. As with the class 4L, students in class 1G reviewed the answers orally by volunteering responses. Both comparison classes engaged in the curriculum for one class period of 51 minutes. The female student-teacher's classes were coded Class 1L (intervention class of 22 students, 8 females and 14 males) and 4L (comparison class of 16 students, 5 females and 11 males). The male teacher taught class 5G, (intervention class 20 students, 14 females and 6 males) as well as class 1G (comparison class of 23 students, 11 females and 12 males).

While the game *Food Force* computes points at the bottom of the screen it also audibly evaluates the player's earned point score with comments such as, *"You can do better. Want to try again?"* Students did not take note of their scores but considered that

they had done well when after a mission the audio said *"Good work!"* The fact that no student recorded the number of points earned eliminated this quantitative assessment from the research data. It was the observation of the teachers that students did not remember the number of points scored when playing the game because they were caught up in the game. The researcher was disappointed that students did not record their point scores; however, the researcher interpreted that the students' enthusiasm for playing the game without concern for the number of points earned as evidence of intrinsic motivation. Comments from their journals and look backs, two qualitative assessments of learning, supported the students' perception that they learned the curriculum embedded in the computer simulation video game, *Food Force.* The positive comments were corroborated by the greater improvement in mean class post-test scores of the intervention classes over mean post-test scores by the comparison classes.

> I liked how there was a good variation of games and the fact that if you
> did poorly you could try again. Much better than reading articles.
> (Student 5G17, September 25, 2007)

The teacher of 1L thought that her class had not learned less because they only played for one day. She said,

> The kids enjoyed playing the game. They were really into it.
> (1L teacher, November 20, 2007)

Both teachers experienced few class management problems in the intervention classes as compared to the comparison classes. Teachers L and G had to direct students back on task and reported frequent social loafing in the comparison classes. Teacher L reported telling some students to "get back to work." While class management was not

part of the research, the observation is valuable. Engaged students are less likely to misbehave. Students requested that the sound on the game be louder but the district technology staff previously set the sound level and the teachers could not increase it. This was fortunate because excessive volume may have annoyed near-by classes and that may have been assessed as a negative by teachers considering using computer simulation video games as pedagogy.

The male teacher placed himself at 4 on a linear scale of 1 to 10, 10 being the highest level of experience. The female teacher placed herself at 3. Although not a research question, the results for the classes that played the game, *Food Force,* had little relationship between teacher self-reported knowledge of gaming and student motivation or student learning. The game, *Food Force,* had as its primary purpose teaching students about world hunger, the conditions that aggravate it and the attempts by the global community to ameliorate it. Although many students found the game to be entertaining *Food Force* is a not-for-profit game, designed by the United Nations primarily to educate not entertain the youth of the world.

The researcher used Microsoft Excel to compute means, medians, modes, and standard deviations. The researcher used SPSS to organize, summarize, and compare the mean post-test scores with the mean pre-test scores. The researcher used p values to assess the influence of the new pedagogy. "The p value for a test result represents the degree of rarity of that result, given that the null hypothesis is true. Smaller p values tend to discredit the null hypothesis and to support the research hypothesis" (Witte & Witte, 2004, p. 368). When $p < $ or $ = .05$ it means that the null hypothesis is rejected. The researcher stated the null hypothesis as follows: There is no difference in the mean post-

test scores of students who played a computer simulation video game to learn the curriculum as compared to the mean post-test scores of students who learned the curriculum through traditional pedagogy. The researcher stated the research hypothesis as follows: There is a significant difference in the mean post-test scores of students who played a computer simulation video game to learn the curriculum as compared to the mean post-test scores of students who learned the curriculum through traditional pedagogy.

When the researcher compared the difference in mean post-test scores with the difference in post-test scores of the intervention class, 1L, against the comparison class, 4L, $p = .001$. The difference in the mean test scores was significant. The null hypothesis, Ho, was rejected. The highest score one could possibly attain on the *Food Force* pre-test and post-test was 20. No student in the intervention class 4L had a lower post-test score than pre-test score. The mean score for the intervention class 1L rose 3.86 points from 8.09 to 11.95 while the mean score of the comparison class, 4L, rose .56 points from 8.87 to 9.43. Males in the intervention class showed the largest jump in mean score rising from 7.85 on the pre-test to 12 on the post-test. Five out of 16 students in the comparison class, 4L, had lower post-test scores than pre-test scores. The male mean score in the comparison class rose from 9.45 to 9.9, less than half a point. Teacher L said in an interview conducted by the researcher that the students in the comparison class were not interested in the topic. Research supports the contention that students learn more when they are interested in the topic (Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989).Considering that the same teacher taught the students in both classes, 1 L and 4 L, the same curriculum and that the students in the classes had similar SES, the researcher

concluded that the new pedagogy made the topic interesting for the students in class 4L.

The mean difference between the mean post-test score in the intervention class 1 L and

the mean post-test score in the comparison class,4 L had a better than 95% chance of

having been influenced by the new pedagogy

The male teacher G's intervention class's mean score for the on the pre-test was

8.1 and the mean score on the post-test was 10.9, an increase of 2.8 points. The p value

was p = .064 and therefore the mean difference in scores did not reach significance. For

females in the intervention class, 5G, the mean post-test score jumped from 7.6 to 11.0, a

gain of 3.4 points and the difference between the mean change in scores between females

in the intervention class, 5G, and the comparison class, 1 G, had a p value = .011.

Female scores significantly changed in class 5 G. As with teacher L's comparison class,

the increase in the mean test score for teacher G's comparison class was smaller. Four of

the students in the comparison class, two males and two females, had their scores drop.

Male mean scores dropped 1 point from 7.3 to 6.3. Female mean scores in teacher G's

comparison class rose 1.36 points from 7.45 to 8.81. The researcher retained the null

hypothesis for males in class 5G but rejected the null hypothesis for females in class 5 G.

The two teachers who used *Civilization III* as social studies pedagogy had similar

and insignificant experiences concerning differences between pre-test and post-test

scores. The mean, median and mode declined in the two classes of teacher S, regardless

of which pedagogy was used. This was true for both male and female students. Because

the p value = .99 when the mean difference between the class 10 S and class 2 S were

compared, the null hypothesis, Ho, was retained. The mean difference between the mean

post-test score in the intervention class, 10 S and the mean post-test score in the

comparison class, 2 S was insignificant. Teacher S attributed this "across the board" decline to the reaction of freshmen students to the early dismissal occasioned by the half-day schedule. The researcher agreed with this assessment as contributing to students' lackluster performance on the post-test as well as contributing to their lack of motivation to play the game outside of class-time. Teacher S had not told students in the comparison class to take notes during the lecture and no student did. Teacher S said:

> I really didn't understand what I was doing. I just took the book that you gave me [Meier, 2001] and taught the five impulses of civilization [exploration, economics, knowledge, conquest and culture] that the game designer identified. (Teacher S, November 20, 2008)

The researcher assessed that teacher S who was not tenured in her position volunteered to be part of the study to be collegial, not because she had any great interest in gaming-to-learn. Her only interest in the new pedagogy stemmed from the following observation that she stated during the interview with the researcher.

> Kids are such passive learners. By playing the game, they must be involved. (Teacher S, November 20, 2008)

Because the p value = .89 when the mean difference between class 6 H and class 2H were compared, the null hypothesis, Ho, was retained. The mean difference between the mean post-test score in the intervention class, 6 H and the mean post-test score in the comparison class, 2 H was not significant.

The researcher recorded that the male teacher H, whose two classes were honors level, had boys improve their mean test score in both the intervention class 2H (6.4 to 7.53) and comparison class 6H (7.0 to 8.0). Girl's mean score declined in teacher H's

Table 2. Comparison of data for classes of Teacher L and Teacher G

n= number of students   m = mean   sd = standard deviation

FOOD FORCE INTERVENTION CLASSES	TRADITIONAL PEDAGOGY COMPARISON CLASSES
Class 1 L n = 22 m = .81 sd = 1.9	Class 4 L n = 16 m = 3.86 sd = 3.1
Class 5 G n = 20 m = 2.65 sd = 2.53	Class 1 G n = 23 m = 1.56 sd = 2.23

comparison class and remained unchanged in the intervention class. The influence of the intervention was not significant on student learning in teacher H's class. Male teacher H developed a lecture as pedagogy after viewing the post-test. The test focused on "big ideas," those generalizations about human history that have occurred many times for thousands of years and that are imperative for understanding the history of the world. The teacher said that he, "Taught to the test." (Teacher of class 6H, November 20, 2007) without specifically telling students, what exact questions were on the post-test.

As customary in an honors class, students took notes as the teacher lectured. He did not guide them in any way about what to write down or what to study. However, the teacher told them that a post-test was scheduled. He said during the interview with the researcher,

> This is an honors class. These kids take lots of notes. They copy down everything I say. I told them that while they'd be taking a post-test, the grade would not count towards their marking period grade. They already knew this from the informed consent forms. (Teacher of class 6H, November 20, 2007)

Data Collection for Assessing What (if Anything) was Abdicated from the Curriculum

The third research question was: (3) What does the inclusion of computer simulation video games in social studies instruction abdicate from the curriculum?

The researcher used interviews of the teachers and student answers to the look backs to collect qualitative data concerning this question. The researcher interviewed each of the teachers involved in the research independently so as not to have one teacher's responses influence any other teacher. Three teachers who taught the World

Table 3. Comparison of data for classes of Teacher S and Teacher H

n = number of students   m = mean   sd = standard deviation

CIVILIZATION III INTERVENTION CLASSES	TRADITIONAL PEDAGOGY COMPARISON CLASSES
Class 10 S n = 19 m = -1.47 sd = 1.68	Class 2 S n = 25 m = -.28 sd = 2.28
Class 2 H n = 24 m = .71 sd = 1.9	Class 6 H n = 17 m = 1.11 sd = 1.68

History curriculum said that they planned to abdicate nothing from the curriculum. Teacher H said that he did not know what he would abdicate because he was simply going to pick up his plans where he had deviated from them to participate in the research. The researcher is no physicist but it seems impossible to add to a finite curriculum and subtract nothing. Teachers are accustomed to flexibility and adapting to changing conditions. The researcher observed that whatever the teachers abdicated from the curriculum was of little or no concern to them. They all cited the very practical acknowledgement that any teacher expected to teach such an enormous curriculum (the world since 1550 A.D.) must continuously select what to abdicate and what to include. No teachers named anything that they planned to abdicate.

Although the researcher was not able to assess what teachers abdicated from the curriculum the researcher concluded that the new pedagogy added depth to the NJCCCS for social studies. The two male teachers stated that they probably would not have taught the curriculum embedded in the computer simulation video games except for their involvement in the research project. Both considered the class-time playing the games, as time well spent.

> I never would have taught the enormous influence of geography that must be understood to advance a civilization. I think the students will now be more aware of the tremendous influence that geography has on a country's future. That's good. (Teacher H, November 20, 2008)

The other male teacher, G said that he would have covered world hunger and efforts to alleviate it in a current events forum but those students would be noting facts not understanding how some facts can aggravate world hunger.

My telling the kids that civil wars turn women and children into political

as well as economic refugees and prevents international cooperation to do

something about it would have been something that they may have written

in their note books and remembered if I asked it on a test, using the same

language. But the kids felt as if they had experienced the problems faced

by relief workers and that experience [playing *Food Force*] made what

they learned more than just words. (Teacher G, November 20, 2007)

In their look backs, the students who played *Civilization III* out of school

overwhelmingly reported that they would have been playing other video games, watching

TV or I-Ming friends. The researcher assessed that nothing of consequence was abdicated

from these students' learning by playing *Civilization III* and possibly an opportunity for

mischief may have been avoided because they were playing the game.

Two female honors students reported that they would have been doing other

homework.

<div align="center">Chapter Summary and Transition</div>

Chapter IV briefly reviewed the first three chapters that preceded it. Chapter IV

cited descriptive data concerning the school district, high school, students, four teachers,

the curriculum and the two computer simulation video games, *Food Force* and

Civilization III that were involved in the study. The researcher aligned the assessments

designed to supply the data with the three research questions that the assessments

addressed. The data from six assessments, three quantitative and three qualitative, were

reported separately for each question in the order in which the research questions were

originally posed by the researcher. Quotes from students and teachers illuminated the raw

numbers of the quantitative research. The researcher included Excel spreadsheets and SPSS print-outs in the Appendix showing individual student scores on pre-tests and post-tests as well as class means, medians, modes, and standard deviations. One spreadsheet includes the minutes that the students played *Civilization III* outside of class-time. The researcher verbally described what the data showed.

In Chapter V the researcher presents the findings of the study and articulates the many questions that remain to be answered. The researcher connects the findings of the current research with findings of previous and similar research and with current theories that support the use of the researched pedagogy and with current theories concerning the influence of computer simulation video games on student motivation and student learning. The researcher reports specifically on the influence of two computer simulation video games, *Food Force,* used as pedagogy with 42 students and *Civilization III,* used as pedagogy with 43 students in 4, freshman, suburban, social studies classes in central New Jersey for one class period. The researcher states her conclusions and makes recommendations for policy, practice and further research on the topic of the influence of the pedagogy of using simulation video games in high school social studies instruction.

Chapter V

SUMMARY, DISCUSSION, CONCLUSIONS AND, RECOMMENDATIONS

Overview

The problem that precipitated the current study is the alarming decline in social studies education in American schools. The era of high-stakes, standardized testing in math, literacy and science that school systems across the United States of America (USA) are currently experiencing has the incidental effect of reducing the number of minutes-per-week that students spend learning social studies. Wills (2007) stated that simple reproduction of historical knowledge devoid of understanding has replaced the social studies, especially in K-8. The lackluster scores on a test of "big ideas", which the researcher had two teachers administer to four ninth grade social studies classes involved in this study, lends credence to Wills' concerns about the decline of social studies education. The mean scores on the post-test for two honors (H) classes were 53% and 55%. The mean post-test score for the two college preparatory (CP) classes were 30% and 40%. "Big ideas" are those generalizations concerning human behavior that have repeatedly occurred throughout history. Pace (2007) stated how unnerving he perceives the current decline in social studies education to be. In place of social studies, students drill the three, tested curricula lest a school not make annual yearly progress (AYP) as demanded by the NCLB (2002). Ironically, on January 7, 2008, the Sixth Circuit Court of the United States Court of Appeals in Cincinnati declared NCLB unconstitutional because states, not the federal government, control education. What better evidence exemplifies the decline of social studies knowledge in the USA? Our federal representatives failed to recognize their constitutional limitations.

It is illogical for educators to require high school students to learn a sophisticated, social studies curriculum in spite of the anorexic attention given to K-8 social studies instruction. Included in the social studies are history, economics, geography, sociology, civics, and psychology. Not only do the students lack an adequate foundation in social studies but after 9 years of minimal instruction, students perceive that the social studies are unimportant. Healthy democratic republics need educated citizens to knowledgably meet their civic responsibilities. Thomas Jefferson's strong support for education stemmed from his unwavering belief that a people cannot be "...ignorant and free" (Jefferson, 1816, p.1). According to Pace (2007) students in poor communities, arguably those students who need the loudest political voices, are the ones whose social studies educations are most negatively impacted as schools with low SES are less likely to achieve AYP and more likely to spend school time prepping for the standardized tests. Democracy is a learned behavior. The benefits of compromise and negotiation require teaching. "Liberty is something we have to learn." (O' Connor, 2007). Only look to the fledgling democracies across the globe for validation. Currently (2008) many students in the USA lack the necessary knowledge to fulfill their civic obligations to their country because they lack understanding of the centuries of struggle that shaped present day America.

The researcher investigated a new pedagogy, which is using computer simulation video games to teach social studies. Advocates of this pedagogy have opined many reasons that "gaming-to-learn" is the wave of the future but there exists a paucity of objective research to support these claims. Supporters of using computer simulation video games as social studies pedagogy have expressed the need for objective, empirical

research on its effectiveness (de Frietas, 2006; Quinn, 2005). Educators need evidence

that gaming-to-learn works before they invest in it. The purpose of the study was to

assess how using computer simulation video games as pedagogy in four ninth grade

social studies classes influenced motivation and learning and to assess what teachers

abdicated from the curriculum when they employed the new pedagogy. This study begins

to fill this glaring gap in the research.

Pilot Study

In preparation for this study, the researcher conducted action research in the form

of a case study during the spring, 2007 term. The pilot study involved two male students

in the researcher's 10th grade social studies class. The two students played the same

computer simulation video game for as long as they wanted on their own time. The

researcher conducted the case study in the same high school as the action research

reported here. The method and design of the case study informed the method and design

of the current study.

Current Study

The current study involved eight ninth grade social studies classes in a central

New Jersey public high school with a DFG of I. Four teachers volunteered to participate

in the action research. Each teacher taught a pair of ninth grade social studies classes the

same curriculum and the class rosters were composed of students at the same academic

level and similar SES. The teachers used computer simulation video games as pedagogy

with the intervention classes and traditional pedagogy with the comparison classes. The

traditional pedagogy in two classes was lecture and in the other two classes, it was

jigsawed readings in cooperative learning groups (see Appendix J). The researcher used

three quantitative and three qualitative assessments to collect data. The researcher

embraced the concept of triangulation because similar findings rendered from different

perspectives validate one another and deepen understanding (Stake, 1994). The

researcher adopted parts of two research frameworks (Kirkpatrick, 1994; Baker & Mayer,

1999) which assessed the effectiveness of computer simulation video games for training

in the military and industry. To these frameworks, the researcher added three qualitative

assessments: look backs, reflective journals, and teacher interviews.

The Problem

The researcher compared pre-test and post-test scores on curricula related tests in

all eight classes, involving 186 students. One test concerning "big ideas" and

administered to four classes had 14 multiple-choice questions. In these four classes, two

teachers, H and S, tested generic understandings concerning the five impulses that

according to Meir, the designer of *Civilization III*, (Ellis, 2001) drive civilizations and are

of the greatest importance to their progress. These five impulses are exploration,

economics, knowledge, conquest and culture. The researcher's 25 years experience as a

high school social studies teacher led her to opine that these impulses are an important

part of what the researcher calls "big ideas": the core of social studies understandings.

The NJCCCS in social studies includes historical, economic, social, cultural and

geographical facts, which support and validate these big ideas. "All students will acquire

an understanding of key economic principles."(NJCCCS, 2005, 6.5) and "All students

will apply knowledge of spatial relationships and other geographic skills to understand

human behavior in relation to the physical and cultural environment" (NJCCCS, 2005,

6.6). The mean class pre-test scores and the mean class post-test scores in the four classes

upheld the supposition of many notable Americans, (McCullough, 2006; O'Connor,2007; Warner, 2004) that the social studies knowledge of American students is wanting. Two intervention classes were college preparatory (CP) classes and two were Honors (H) classes, a level above the CP classes. The mean scores of two H classes on the pre-tests were 47% in the comparison class and 48% in the intervention class. The mean post-test score of the H comparison class was 55%, and the H intervention class had a mean score of 53%.

The students in the CP classes had lower mean scores on the pre- and post-tests. The CP comparison classes' mean score was 42% on the pre-test and 40% on the post-test. The CP intervention classes' mean score was 40% on the pre-test and 30% on the post-test. If students in H and CP classes, in a DFG school district of I scored so poorly on a test concerning the major understandings of the NJCCCS in social studies, what understandings of the social studies can we expect of students in the many high schools with lower SES? "The social studies squeeze occurs disproportionately in low performing schools and large minority and low-income populations that are under intense pressure to raise [standardized test] scores" (Pace, 2007, para. 3).

The researcher interpreted the low scores on the test of big ideas as warranting the concern voiced by academics, government officials and concerned citizens about the future health of our democracy. "Reduced instructional time in social studies has resulted in a reduction of the scope of the curriculum, the curtailment or elimination of opportunities to promote students' higher-order thinking, and an increased emphasis at times on the simple reproduction of content knowledge"(Wills, 2007, p. 1980).

The other test had 20 questions concerning world hunger and efforts to relieve it. World hunger is a much narrower topic than the big ideas that guide the development of civilizations. Although world hunger has been front-page news for years, the researcher and the teachers correctly anticipated that the students would not know many specifics regarding its causes and efforts to relieve it. Although famines like the one in the Soviet Union in the 1930s are part of NJCCCS, (2005) in social studies (6.3 F 1), students learn that famines occurred and sometimes students learn a short explanation as to why they occurred but few educators include teaching the characteristics of hunger and malnutrition, naturally occurring conditions that exacerbate them, and the human and environmental impediments to relieving them.

Concerning current event topics like world hunger (NJCCCS, 2005, 6.3 H), teachers must make choices about which topics to study in depth because there are many and time limitations prevent teaching them all. The researcher opined that test scores on this topic were not as useful in assessing the existence of the problem, which is the poor understanding of social studies by many high school students, as the test scores concerning the big ideas were useful. The researcher chose this "niche" topic, however, because the topic is part of NJCCCS for social studies and a computer simulation video game, specifically designed to teach students about the topic can be downloaded free.

<div align="center">Research Question One</div>

To what extent does a positive relationship exist between playing computer simulation video games in social studies classes and students being motivated to engage in learning the higher order thinking skills necessary for understanding social studies?

The design of the study used the number of minutes that a student played the game outside of class-time, student reflective journals, student look backs and separate interviews of the teachers by the researcher to assess motivation. Both Kirkpatrick (1994) and Baker and Mayer (1999) used minutes spent playing the game as a quantitative assessment of motivation.

No students who played the game, *Food Force*, reported playing it outside of class-time. Zero minutes played outside of class-time by every student in two intervention classes suggested that playing *Food Force* had no influence on motivation to learn. Yet, the researcher collected qualitative data from the students' reflective journals and the separate interviews of the two teachers that conflicted with the quantitative data. The teachers observed that the students were motivated to learn citing how *"into the game"* the students were while playing *Food Force* in class. In their reflective journals, students wrote that *Food Force* was enjoyable because they liked taking on the role of an avatar and making choices about the six different relief missions. Totty (2005) stated the role-playing, competitiveness, and increasingly difficult levels of play produced positive outcomes with adults when they learned through playing computer simulation games. Active involvement (being "into" the game) was cited by Garris, Ahlers, and Driskell (2002) as necessary to sustain motivation.

The researcher surmised that there were several other reasons why students were motivated to play the game and learned while playing. The directions to play the game were clear. Willis and Mann (2000) stated clear goals as a major attribute of computer simulation video games. The avatars in the game were of both genders and varied ethnicities, allowing any player to slip easily into the role of one of the avatars without

completely abandoning reality. Game realism, was cited by de Frietas (2006) as a strong

motivator. Berger (2006) and Francis (2006) cited student immersion in a compelling

narrative as motivating students to learn. Within the narrative of *Food Force*, the student

controlled the actions of an avatar and became emotionally engaged in the simulation.

Quinn (2005) cited emotional engagement as a positive component of computer

simulation video games.

   While playing *Food Force* a helpful voice" prompted students, who were not

satisfactorily successful as determined by the game designer(s) to try again. A player had

the choice to move onto the next mission or to repeat it. De Fritas (2006) opined that

student control and choice were key motivators. An avatar spoke encouraging words,

suggesting that a player try again if points scored did not indicate to the designer of the

game an adequate demonstration by the student of the understandings embedded in the

game. The teachers observed that students did try again until they felt successful enough

to move on to the next mission. Cotton (1988) concluded that immediate feedback

motivates students regardless of if the feedback is positive or negative. Cotton referred to

this motivating characteristic as instructional reinforcement. Vygotsky (1978) stated that

if students were in the zone of proximal development (ZPD) they were more likely to

improve their performances. The researcher attributed part of the students' success at

playing *Food Force* to a *reachable* level of increased achievement built into the game.

The game conformed to many students' ZPDs and therefore students tried again instead

of giving up. Although no student played *Food Force* any time other than in class the

teachers reported that while in class the students were engaged in the game. Teachers

reported that time on task was greater in the intervention classes than in the comparison

classes where social loafing was an on-going problem. Hunter (1993) correlated time on task to positive student outcomes. The researcher concluded that the game, *Food Force*, was motivating to play and that the motivation to play positively influenced student learning partly because the students spent more class time learning than socializing.

O'Neill et al. (2005) cited motivation for learning as the most important benefit of using computer simulation games as pedagogy. More than one-half of the students in class 2H played the game, *Civilization III*, outside of class-time for a total of 1,175 minutes (roughly 19.5 hours). Nine males played for 820 minutes for an average of slightly more than 1.5 hours each. Four females played for 355 minutes for an average of slightly less than 1.5 hours each. The remaining 11 students did not play the game outside of class time. The fact that the researcher provided only 13 games to borrow and that 13 students asked to borrow the games may be coincidental but the researcher is naturally suspicious of coincidence. As students returned the games after playing on their own time, teacher H offered the other 11 students in the Honors class who had not asked to borrow the game initially, opportunities to do so. The researcher opined that had more games been available to borrow, more students would have played the game initially on their own time. One or 2 days after the playing-to-learn in class, most ninth grade students had simply moved on to other interests. If any students entered a "flow state" (Csikszentmihalyi, 1991) while playing during class, without a game to play, the flow state inevitably ebbed.

The researcher assessed that the computer simulation video game, *Civilization III*, did motivate the 13 students who asked to take it home. However, the researcher was not confident assessing that the motivation was for learning. Students may have been

motivated simply to be entertained. The post-test scores did not evidence significant

learning. Dede (2005) opines that even the least academically motivated student will

learn if entertainment is successfully married to education through well-designed

computer simulation video games. The least motivated students are unlikely to be in H or

CP classes so Dede's opinion could not be evaluated by the current research.

It was the researcher's opinion that *Civilization III*, requires a solid understanding

of social studies for a player to be successful. Squire (2003) cited in his research

concerning the same game *Civilization III* that most students who he interviewed hated

traditionally taught history classes but did like gaming-to-learn. Squire (2003) had

students play the game in an after-school program. In that environment, the game was

available to play for many hours a week. Students in the after-school program were able

to save their scores and build on their learning over many hours. The researcher assessed

that *Civilization III* is such a difficult and sophisticated game that students need to play

for many hours before they acquire the lessons embedded in the game design.

Many students have grown up learning in ways completely different from their

elders. Schwab (2002) reported that some students access the visual and kinesthetic first

and then read about the topic. Youngsters learn through multi-tasking (Francis, 2006) and

acquire knowledge through many senses (Dunn, 2000). The researcher's investigation of

the pedagogy of using computer simulation video games accommodated these theories.

The researcher assessed that regardless of motivation, playing *Civilization III* as

social studies pedagogy within the current class schedule of 51 minute periods, no less

half a period, is impractical. The CP classes' data revealed no motivation to learn through

playing computer simulation video games because no students in the CP intervention class of teacher S asked to play *Civilization III* outside of class time.

The researcher concluded that several variables beyond the researcher's control accounted for the extremely different influence on motivation to play the game, *Civilization III,* outside of class-time by the two intervention classes, 2 H and 10 S.

1. One class was H and one was CP. Academic engagement is more common in honor students: that is why they *are* honor students. It is the researcher's observation, based upon a quarter of a century of teaching high school social studies, that most students assigned to ninth grade H classes are so placed because they do what educators and parents ask them to do not necessarily because they have superior intelligence as compared to most students in CP classes. Pleasing authority motivates them. Any interpretation of the data must consider this variable.

2. The teacher of the H class verbally and tacitly commended the students when they asked to play the game outside of class-time. The CP students received no such approval either audibly or tacitly from their teacher nor had they received it would they have valued the commendation as much as the H students did. While educators recognize praise as a motivator for most students, teacher-pleasing behavior is a stronger motivator for Honors students.

3. The teacher in the H class was motivated to use the new pedagogy more than the teacher in the CP class was motivated to use it. The researcher learned through interviewing the teachers that each one communicated to their students far different levels of enthusiasm for the pedagogy. The teachers' levels of enthusiasm for gaming-to-learn influenced their students' levels of enthusiasm for gaming-to-learn. One teacher, H,

genuinely embraced the purpose of the study while the other teacher, S, volunteered to

participate as a gesture of congeniality toward the researcher but teacher S truly lacked

any interest in the research. The researcher deduced that students mirrored the enthusiasm

of their teachers.

4. The H class played the game for a full period; not a half period like the CP class that

had no students request to borrow the game. The teacher of the intervention class 10S

who had no requests to take the game home for out-of-class play, had scheduled the in-

class play on a half day of school. Teacher S stated,

> The kids acted crazy. They just wanted to get out of school. (Teacher S,
>
> November 22, 2008)

5. Finally, the teacher of the H class was better prepared and more knowledgeable of the

curriculum than the teacher of the CP class was prepared and knowledgeable.

Educational studies are replete with research that shows that the greatest influence on

student learning is the quality of the teacher. (Darling-Hammond, 1997).

Research Question Two

To what extent does a positive relationship exist between students learning social

studies and teachers using computer simulation video games as pedagogy?

While the 13 students in the intervention class who played the game *Civilization*

III outside of class- time perceived that they learned more than they would have learned

with traditional pedagogy, the difference in the mean score between their pre-test and

post-test scores did not support their perceptions. Intervention class 2 H, the honors class,

had the mean score rise 2.4% from the pre-test mean score of 48% to the post-test mean

score of 53 %. In the comparison class, 6 H, the average mean score rose 2.8% from 47%

for the mean pre-test score to 55% on the post-test score. The researcher did not consider the .4% difference between the change in mean pre-and post-test scores, significant.

Intervention class 10 S had mean scores drop 25% in the intervention class from a mean pre-test score of 40% to a mean post-test score of 30%. The mean score in the comparison class, 3S, had scores drop from 42% to 40%, an average decline of 4.76%. The researcher concluded that playing *Civilization III* for one class period (2 H) or for half a class period (10 S) did not positively influence student learning.

The two ninth grade teachers who had their students play *Food Force* to learn about world hunger and efforts to relieve it saw significantly higher mean scores on the post-tests of the intervention classes than in the mean scores on the post-tests of the comparison classes. A characteristic of the game *Food Force* is continual auditory feedback by a friendly, encouraging avatar. According to Delanghe (2001), "The immediate feedback can allow learners to alter their performance more quickly often leading to accelerated learning times" (p.32).

The intervention class 1L played *Food* Force during one class period. The mean post-test score of class 1L improved by 50%. The mean pre-test score was 40% while the post-test mean score was 60%. The intervention class 5 G played *Food Force* for two class periods. The mean post-test score in class 5 G improved by 34%. The mean pre-test score was 41% while the mean post-test score was 55 %. The comparison classes 4 L and 1G learned about world hunger and efforts to relieve it using the pedagogy called jigsawing in cooperative groups. Quads of students read the same material and collaboratively constructed answers to comprehension questions. Each quad in the first group was homogeneous according to reading material and each quad in the second

grouping was heterogeneous by reading material. In the second quad students taught each other the knowledge that they learned in their first quad. It is in the second set of quads that there occurred more social loafing. Time on task improves student outcomes (Hunter, 1993). The researcher opined that it is reasonable then to assess that time off task exacerbates students' outcomes. The researcher cannot say that the better performance of the intervention classes resulted from being fully engaged in the lesson or the better performance was a result of the new pedagogy. The researcher cannot determine if the novelty of the classroom pedagogy was the motivation to engage or the pedagogy itself. Schwab (2002) stated that students who grew up playing video games learn differently than people who did not grow up gaming. According to Schwab (2002), they access visual and kinesthetic opportunities to learn before reading opportunities to learn. Schwab's theory supports the pedagogy not the novelty of the pedagogy as the reason why students who played *Food Force* engaged in the lesson while students in the comparison class reportedly found the topic boring. Francis (2006) stated that students learn by using multiple modalities simultaneously while playing computer simulation video games. *Food Force* required a player to use several modalities at once. According to Dunn (2000) we all have a favorite learning modality. Since *Food Force* required a student to use more than one learning modality, the probability that a student utilized a favored modality increased by playing the computer simulation video game. *Food Force* provided links to auxiliary information about the problems inherent in each relief mission. Kerschberg (2001) stated that students access such information when they have difficulty progressing through a game. The researcher failed to record how many times students used the tutorials.

The comparison classes did not journal about what they learned. It is possible that having students in the intervention classes write reflective journals was the pedagogy that influenced learning rather than the pedagogy of playing computer simulation video games. In any succeeding study, comparison and intervention classes need to journal to remove that variable from influencing the findings.

Students in the comparison class 4 L, had mean post-test scores improve by 6.82% over mean pre-test scores. The mean pre-test score in class 4 L was 44% while the mean post-test score was 47%. Students in the comparison class 1 G had mean post- test scores improve by 16.21% over mean pre-test scores. The mean pre-test score in class 1 G was 37% and the mean post-test score was 43%.

Students in the intervention class, 1 L, experienced mean post-test scores 43.18% higher than mean post-test scores in the comparison class, 4 L. No student in the intervention class had a score decline. Tomlinson (1999) proposed that differentiated instruction provides the opportunity to learn for all students. Tomlinson stated that differentiated instruction allows every student the occasion to learn complex curricula without "watering it down." As noted earlier, college preparatory (CP) classes contain students that cover an enormous range of aptitude. It is the researcher's conclusion that the fact that no student in class 1L had a decline in post-test scores lends credence to Tomlinson's (1999) theory of differentiated instruction, which is inherent in computer simulation video games. Students in the intervention class, 5 G, experienced mean post-test scores 17.79% higher than mean post test-scores in the comparison class, 1G. Although the researcher is unsure of the influence of variables that were not controlled, the researcher concluded that playing the computer simulation video game *Food Force*

was a more effective pedagogy for teaching about world hunger and relief efforts than jigsawing readings in cooperative learning groups.

Research Question Three

What does the inclusion of computer simulation video games in social studies instruction abdicate (if anything) from the curriculum?

The researcher and the teachers were unable to determine what they abdicated from the curriculum. Not one teacher suggested what it was that they would not teach because of using the new pedagogy. The researcher attributed this optimistic forecast to the confidence in the future academic performance that any good practitioner of education needs to communicate at the beginning of the school year. Researchers continue to debate whether teachers' expectations are self-fulfilling prophecies (SFP) (Jussin & Harber, 2005; Tauber, 1998). The researcher opined that the four teachers who participated in the study accepted the strong influence of the Pygmalion Effect (Rosenthal & Jacobson, 1968) and resultantly were reluctant to cast doubt on their ability to cover the curriculum lest stating failure to complete the curriculum would inevitably incur failure to do so. Teacher H simply inserted the game-playing into his lesson plan. He stated that he would teach everything that he planned to teach during the rest of the school year. The researcher concluded that the teachers might recognize what curriculum they did not teach by the end of the school year but not when the researcher interviewed them during the first semester. Having played the video game may help students better understand succeeding curriculum and thereby shorten the amount of time required for students to learn concepts later on that school year. If so, the researcher opined favorable assessments by the teachers concerning gaming-to-learn would strengthen. Teachers and

administrators may accept playing –to-learn if students learned subsequent curriculum more easily. The current data is insufficient to make that claim.

Students who played the game on their own answered, "No", when queried in the look backs: "Do you think anything was abdicated from the curriculum because you played the computer simulation video game in class?" Many reported that had they not been playing *Civilization III* at home they would have been playing other video games, talking on the phone, text messaging, watching television or just "hanging out." A few (all females) wrote that they would have been doing other homework. The researcher concluded that game-playing abdicated nothing identifiable from the curriculum at the time of the study.

Discussion

The number of students in the study was only 186. Three classes used the new pedagogy for only one class period (51 minutes) or less. One class used the new pedagogy for two class periods. Students self-reported the minutes that they played the video games outside of class time and the researcher has no way to verify those reports. One teacher broke protocol by using the new pedagogy twice as long as the traditional pedagogy. Few students recorded their point scores or levels achieved while gaming - another breech of protocol. These observations render the researcher's conclusions about the influence of computer simulation video games on student motivation and learning, very weak.

Adapting commercial games to required curriculum is difficult because designers create games to entertain and make money, not to teach. School districts lack the

resources to create games themselves. Designers are expensive and unlikely to be employed by public school systems and be available for designing adaptations. Game developers created *Food Force* for teaching students about world hunger and efforts to relieve it. *Food Force* needed no adapting. The researcher concluded that it was effective pedagogy *because* game developers designed it for teaching with entertainment as an ancillary.

Students in intervention class, 1L, had a significantly larger mean gain on post-test scores than the comparative class, 4 L, had. Females in intervention class, 5G, earned a higher mean post-test score than females in the comparison class, 1G, but 5G spent two days learning the curriculum as opposed to 1G's one day of instruction, which the teacher accomplished by using traditional pedagogy. Even though 5 G played the game for two class periods, the post-test mean score was lower than 1 L's post-test mean score, which played the game for only 1 day. The fact that class 1L had higher mean post-test scores than class 5 G had suggests that there was no improved outcome because class 5G played the game for twice as long as 1 L. Other explanations *may* be that class 1 L students were faster learners, had more experienced gamers on the roster, were more intelligent or were disproportionately male.

Class 1 L was 64% male while class 5 G was 30% male. The lopsided gender distribution in the intervention classes my have influenced student outcomes. In a first-of-its-kind brain imaging study, Stanford University School of Medicine researchers demonstrated that rewarding feelings are more activated in men than women during video-game play. (Brandt, 2008). Perhaps because 1L had more than twice the percentage of male students than class 5G the competitive environment that the heavy male

population created in 1 L contributed to 1L's higher mean post-test scores. Male mean post-test scores increased 21% while female scores rose 17%. In class 5 G female post-test score improved 17%, the same increase as females in class 1L where males outnumbered females 14 to 8. The males in class 5 G made up only 30% of the class. Rather than an environment charged with competition, the 14 females created a nurturing environment reflective of the goals of the game. The male mean post-test score improved 5 %. *Food Force* was not a "shoot-them-up" game, which are favored by males but a game that nurtures, which are favored by females. The disproportionate number of males in class 1 L transformed the game into a competition amongst themselves regardless of *Food Forces'* helping narrative. When the females made up 70% of the class the learning culture transformed again to its humanitarian roots and the males became significantly less engaged. The researcher suggests that learning through the use of computer simulation video games is influenced by gender because the genders respond differently to competition and nurturing.

The difference between mean post-test male scores in two intervention classes 1L (*Food Force*) and 10 S (*Civilization III*) was 16% higher than the mean post-test male scores in the comparison classes taught by the same teachers

Meier developed *Civilization III* for entertainment. It requires hours of play to understand and master the five influences on civilizations, which a player must comprehend and apply for a civilization to progress. Students need long blocks of time to play *Civilization III* for it to have a positive influence on learning as Squire (2004) reported. The researcher concluded that gaming-to-learn when the game is a commercial one *does not* fit with the scheduling of the high school where the researcher conducted

the study. The researcher opines that block scheduling is a better venue for gaming-to-learn with commercial games. If teachers fully embraced the new pedagogy the way McMichael (2007) embraced it in a college course; it is likely that the NJCCCS (2005) in social studies would be compromised. High school teachers lack the flexibility in curriculum that college professors have.

The researcher opines that playing *Civilization III* as social studies pedagogy is better suited to after-school activities such as the one initiated by Squire (2004) where uninterrupted play can occur and where students would be more likely to get into the "flow state" (Csikszentmihalayi, 1991). An elective course or an after school club could accommodate the new pedagogy. Research shows that students involved in extra-curricular activities have better grades, lower drug use, and are more likely to graduate high school (Chait & Sabattini, 2006; Fahey, 2007). Providing gaming-to-learn opportunities for students may help "level the playing field" for students with lower SES by affording them regular access to technology and a safe, supervised after-school environment. Squire (2005) reported that students who did not believe that they could understand the inter-play of several social studies subjects (geography, history, politics, economics) learned them by playing *Civilization lll* for a minimum of 30 hours. The researcher thinks that awakening students to the myriad of forces that construct our global community is an essential responsibility of educators in a democratic republic. The researcher did not find evidence that playing *Civilization III* during social studies class achieved that goal.

Technological skills are currently (2008) necessary for most living-wage office jobs. According to Squire (2005) and Beck and Wade (2004) future employers expect

workers to innovatively and creatively use the most current technology to anticipate and solve problems. The confidence and familiarity with computers that coincides with gaming is likely to ameliorate apprehensions of techno-phobic students and therefore assist in preparing them for the workplace. Teachers embraced using "clips" from commercial movies and PowerPoint presentations as effective teaching tools but the aforementioned technology already existed. Video games that need to be adapted require skills that veteran teachers are unlikely to possess and therefore until more video games, which are specifically designed to teach become available, the researcher doubts that gaming-to-learn will be widespread. Teachers in the USA are likely to be over 45 and female, while according to the Entertainment Software Association (ESA) website, the average video game player in the USA is male and 33 years old. The researcher concluded that unless more games are designed explicitly for teaching and educators receive professional development on how to best use them in the classroom, it is unlikely that gaming-to –learn will become a regular part of classroom pedagogy until current gamers age and more females embrace gaming.

The observed disengagement of the comparison classes as recorded in teacher interviews had the researcher conclude that lecturing to students and jigsawing readings and comprehension questions, without a strategy that held every quad member accountable, was neither motivating nor effective pedagogy. The researcher assessed that "It doesn't count" was a strong de-motivator because grades *do* motivate H students and many CP students. Teacher S's comment concerning the passivity of many high school social studies students is what led the researcher to research a novel pedagogy that may effectively engage learners. Teacher S's statement confirmed the researcher's perception

that too many high school social studies students want a "pre-digested" education. They lack curiosity and perform in school for grades. They want educators to give them the "right" answers rather than expect students to construct the right answers.

Generally, people are reluctant to change. Although the gaming phenomenon is growing daily, its inroads among teachers and administrators are marginal as compared to its inroads with teens and pre-teens. Rapidly changing technology increasingly accompanies life in the 21st century and gaming-to-learn is part of this phenomenon. The military and industry assessed that using simulation video games for training is effective. (Baker & Mayer, 1999; Kirkpatrick, 1994). As educators strive to reach every student, computer simulation video games may fill a pedagological niche that reaches some students through gaming, which for them is a better-developed and more favored modality (Dunn, 2000). Educators may find this new pedagogy effective especially for those students who do not like to read but do like to compete and have confidence in their gaming abilities, which they spend hours honing each week. Beck and Wade (2004) reported that the average middle school student spends 7 1/2 hours per week playing video games. We know that student choice and affect impact learning. Student outcomes improve when students are engaged and happy (Dede, 2005).

<div align="center">Recommendations for Policy</div>

Without data that reveal information concerning the influence on student outcomes, policy makers cannot make prudent decisions. The violence associated with computer simulation video games is a concern. Pundits have theorized that violent games encourage students who play them to be violent just as they theorize that violent television shows and movies encourage the same. Comprehensive analysis of violent

interactive video game research suggests that exposure to video games "...a.) increase aggressive behavior, b.) increases aggressive thoughts, c.) increases angry feelings, d.) decreases helpful behavior, and e.) increases physiological arousa." (Walsh, Gentile, VanOverbeke, & Chasco, 2002, para.2). Researchers at Iowa State University (Anderson, Gentile & Buckley, 2007) provided empirical evidence that exposure to violent video games increases aggressive behavior in children and teenagers. The amount of time spent playing violent video games was a better predictor of students' own violent behavior than either gender or the students' self-described beliefs concerning the level of violence that is normal in society. Of course, another explanation of the data is that violent children choose to play violent video games.

Video game addiction is another concern that stakeholders need to investigate. Anecdotal evidence suggests that some students immerse themselves in virtual worlds allowing their real worlds to fall apart. According to pediatrician, Dr. M. Wasserman, executive director of the Maryland State Medical Society, who spoke at a meeting of the American Medical Association, research concerning addiction to gaming, has shown that video-game addiction was not unlike addiction to gambling or alcohol, where it [gaming] was having a profound impact on the lives of individuals (Tanner, 2007). Teaching about the pitfalls of gaming addiction needs to accompany any gaming-to-learn initiative.

The researcher opines that at this time (2008), administrators should neither embrace nor discourage this new pedagogy but ever encourage support for action research by teachers, which may produce data and allow for prudent decision-making at a future time. The researcher concluded that the complexity and the length of time a player must spend to master the game *Civilization II,* makes its use as a pedogological tool

during class-time impractical. *Civilization III* a game designed for entertainment, was a weak pedogological tool when utilized so sparingly. The researcher suggests that administrators consider creating after-school programs, advised by faculty members where students could play video games. While having fun, students may develop higher-order-thinking and technology skills that are marketable. This would be of particular benefit for students with low SES who might otherwise not have access to the software. (Dede, 2003; Glazer, 2006) or have a fun and safe place to spend the hours between the end of the school day and when parents return from work. (Fahey, 2007).

Recommendations for Practice

The researcher concluded that *Food Force* was an effective pedagological tool. The American Federation of Scientists working with University of Southern California and Brown University created a couple of educational computer simulation video games available for free downloading off the web. These games are *Immune Attack* and *Discover Babylon*. Designers consider these games, works in progress, and they seek teachers' input concerning their effectiveness in the classroom. Supervisors should encourage teachers to use the new games and thereby take part in their development.

Recommendations for Research

Clearly, there is a need for more research on the influence of playing computer simulation games on motivation and learning. Under-achieving male students may benefit from the new pedagogy more than the general population of students. It is the researcher's recommendation that more studies concerning the effectiveness of computer simulation video games as social studies pedagogy target teenage males.

After inquiring about the current study, two social studies colleagues of the researcher planned to use as pedagogy the computer simulation video game *Oregon Trail*. One biology teacher planned to use *Immune Attack* with an inclusion class. The teachers' use of the new pedagogy is informal and not action research, however, the researcher concluded that the current research led the teachers to use the new pedagogy. More formal action research is necessary to answer the research questions presented in this study. The researcher predicts that as more teachers experiment with the new pedagogy more teachers will volunteer to be part of formal research to determine the influence of computer simulation video games on motivation and learning. It is the researcher's opinion that the social studies teachers who were not a part of this study will likely volunteer to participate in another study.

The researcher concluded that many other variables contributed to student academic outcomes and therefore assessing the influence of the intervention used in this research was difficult and the conclusions are weak. The researcher recommends that any succeeding study should follow an amended design, which includes the following:

1. A formal and well-prepared presentation should precede the recruitment of teachers as participants in any action research. Only teachers who are truly interested in the new pedagogy and committed to the research objectives and following the protocol should participate.

2. A researcher cannot use as a quantitative measure of motivation, minutes of play, outside of class-time unless students can download freely the computer simulation video game off the web or the teacher has enough games for students to have their own to access any time that students wish to play outside of class-time.

3. Teachers must commit to at least 3 days of in-class play because technology snafus are daily occurrences and the snafus create another variable (time-on task) (Hunter, 1993) which most educators accept as having a strong influence on student outcomes.

4. Post-test scores need to be part of students' grades because grades are motivators for many students. In the pilot study (2007), which informed the current study (2008) the researcher administered a summative test that "counted." Because in the pilot study what students learned playing the game helped students understand the curriculum about which they were tested, students completed post-tests with care. The researcher thinks that "counting" is an essential element necessary for any further research concerning the influence of the new pedagogy. If it does not count, it is not done with integrity.

5. Garris, Ahlers and Driskell, (2002) stated that reflection is an important part of learning. In future research, reflective journaling cannot occur as a variable. Both comparison and intervention classes must be given equal opportunity to reflect on what they learned to remove reflection as a variable in the research.

Chapter Summary

Any further research needs to implement the recommendations proposed by the researcher. The answers to the three research questions were inconclusive but the researcher noted a definite difference in the influence on motivation and learning between a game designed to educate as a first goal and a game designed to entertain as a first goal. Students learn more when they enjoy learning. It is the researchers opinion that gaming will continue to grow in popularity and that educators need to assess its use as an effective pedagogy particularly for male students who are underachieving.

Educators need to do a better job teaching social studies understandings to all American children. The social studies are too important for educators to neglect. The new pedagogy, teaching social studies through the inclusion of computer simulation video games in classroom instruction, may be the "hook" to engage actively students in the social studies subjects but more research is necessary before school districts invest in professional development and software.

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Completion Certificate

This is to certify that

Bernadette Coyle

has completed the **Human Participants Protection Education for Research Teams** online course, sponsored by the National Institutes of Health (NIH), on 08/28/2007.

This course included the following:

- key historical events and current issues that impact guidelines and legislation on human participant protection in research.
- ethical principles and guidelines that should assist in resolving the ethical issues inherent in the conduct of research with human participants.
- the use of key ethical principles and federal regulations to protect human participants at various stages in the research process.
- a description of guidelines for the protection of special populations in research.
- a definition of informed consent and components necessary for a valid consent.
- a description of the role of the IRB in the research process.
- the roles, responsibilities, and interactions of federal agencies, institutions, and researchers in conducting research with human participants.

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Appendix G
SETON HALL UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN SERVICES
OFFICE OF GRADUATE STUDIES

APPROVAL FOR DISSERTATION PROPOSAL

Candidate, *Bernadette D. Coyle*, has successfully completed all requisite requirements. This candidate's proposal has been reviewed and the candidate may proceed to collect data according to the approved proposal for dissertation, under the direction of the mentor and the candidate's dissertation committee.

If there are substantive differences between what has been approved in the proposal and the actual study, the final dissertation should indicate, on a separate page in the Appendix, the approval of the committee for those changes.

Title of Proposed Dissertation: *A Study Assessing the Effects of Simulation Video Games on Student Motivation and Learning When They are Used as Part of Social Studies Pedagogy*

Dissertation Committee:

Mentor
(sign/date):_____

Committee Member
(sign/date):_____ *Margaret G Nemnie   8/27/07* _____

Committee Member (sign/date):_____

Committee Member (sign/date):_____

Approved by Seton Hall University Institutional Review Board on

Department Chairperson (sign/date):

Appendix G
SETON HALL UNIVERSITY
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Simulation Video Games on Student Motivation and
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Studies Pedagogy
Dissertation Committee:

Mentor
(sign/date):_____

Committee Member
(sign/date):_____ _Todd W. Kent_ _8-24-07_

Committee Member (sign/date):

_____

Committee Member (sign/date):

_____

Approved by Seton Hall University Institutional Review Board on

_____

Department Chairperson (sign/date):

_____

DR. LISA M. ANTUNES
Assistant Superintendent

<div align="right">Telephone
(908) 369-0030</div>

June 27, 2007

Seton Hall University Institutional Review Board for the
    Protection of Human Subjects and Sponsored Programs
400 South Orange Avenue
South Orange, New Jersey, NJ   07079-2685

To Members of Seton Hall University Institutional Review Board:

Please be advised that Bernadette Coyle has discussed her proposal for conducting
research utilizing students from Hillsborough High School. Pursuant to our conversation,
Mrs. Coyle is authorized to utilize the Hillsborough High School premises within the first
marking period beginning September, 2007 to conduct her research, provided active
consent is acquired from the parents of the students in those classes that may be utilized
in her research. She will supply the computer games and is aware of all copyright
procedures. Mrs. Coyle has also obtained the consent of the building principal and the
district technology supervisor.

If I can be of any further assistance, please do not hesitate to contact my office.

Sincerely,

Lisa M Antunes

Lisa M. Antunes, Ed.D.
Assistant Superintendent of Schools

HILLSBOROUGH HIGH SCHOOL

466 RAIDER BOULEVARD • HILLSBOROUGH • NJ • 08844-1499 • (908) 874-4200 • FAX (908) 874-3762

KAREN A. BINGERT, Principal
EVETTE R. CHANEY, Vice Principal
THEODORE W. LEBO, Vice Principal
MICHAEL J. SIMBORSKI, Vice Principal

September 25, 2007

Seton Hall University Institutional Review Board for the
    Protection of Human Subjects and Sponsored Programs
400 South Orange Avenue
South Orange, New Jersey 07079-2685

To Members of Seton Hall University Institutional Review Board:

Please be advised that Bernadette Coyle has discussed with me her proposal for
conducting research utilizing students from Hillsborough High School. She has been
approved by our superintendent and Board of Education, and she has my approval for use
of Hillsborough High School specifically. This permission is granted for the duration of
the 2007-2008 school year, and Mrs. Coyle knows that student involvement is contingent
upon parental approval. All materials will be provided by Mrs. Coyle, and she will work
closely with necessary school personnel to assure that all runs smoothly.

Please feel free to contact me with any further questions or concerns.

Sincerely,

Karen A. Bingert
Principal

Hillsborough Township Board of Education

Joel T. Handler
Director of Technology
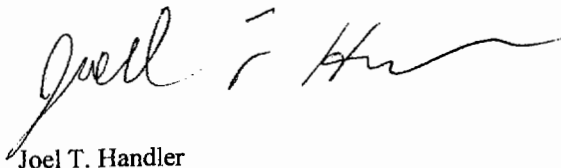
Seton Hall University Institutional Review Board for the

Protection of Human Subjects and Sponsored Programs

400 South Orange Avenue

South Orange, New Jersey 07079-2685

To Members of Seton Hall University Institutional Review Board:

Bernadette Coyle has discussed her proposal for conducting game based research utilizing students and computers from Hillsborough High School. Mrs. Coyle is authorized to utilize the Hillsborough High School labs during the 2007-2008 school year, provided consent is acquired from parents of the students in those classes that may be utilized in her research. She will supply the computer games and ensure she is covered under all copyright requirements.

If I can be of any further assistance, please do not hesitate to contact my office.

Sincerely,

Joel T. Handler
Directory of Technology

379 South Branch Road, Hillsborough, NJ 08844 • Phone: 908-369-0030 x 5027 Fax: 908-369-8286; email:
jhandler@hillsborough.k12.nj.us

SETON HALL ⛪ UNIVERSITY.

Dear Member of the HHS Community,

I need your help in order to carry out a research project, which is the culminating activity of my doctoral studies at Seton Hall University.

In recent years there is evidence that many American students graduate high school lacking adequate knowledge of history, economics, geography, civics, sociology and psychology. These are the subjects that make up social studies. In order for our democratic republic to thrive it is necessary that a knowledgeable and vigilant citizenry participate in the national discourse. Without knowledge any such dialogue is only ranting. At the 2007 Conference of the American Association of School Administrators, the keynote speaker, retired Supreme Court Justice, Sandra Day O'Conner, urged the attendees to improve social studies education. Alarmed by the knowledge that a greater number of high school students could name the Three Stooges than could name the three branches of government, Justice O'Conner said, "We are born free, but liberty is something we have to learn. It all comes down to education."
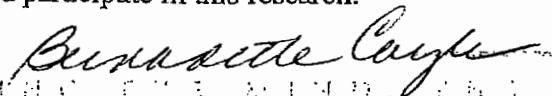
Many students today refuse or are unable to read textbooks that teach social studies. Consequently, they do not comprehend geo-political machinations and therefore are ill equipped as well as uninterested in participating in government. As fewer Americans engage in political dialogue and civic activity, we place at risk the freedoms that we cherish. Knowledge is power. No one wants a diminution of liberty but history has repeatedly shown us that such is the consequence of ignorance.

Rather than lament the little time that American high school students spend reading, I am researching how they might learn social studies through playing computer simulation video games both in and out of class. Twenty-first century citizens of the world need to be aware of how the histories of our global neighbors shaped their values. We will be better equipped to succeed in the worldwide community if more Americans learn higher order thinking skills that social studies teach us.

Attached to this recruitment letter is an Informed Consent Form (ICF). All students who wish to volunteer must sign an ICF and they and their parent/guardian must sign a second ICF. Teachers who volunteer must also sign an ICF.

Please join me in this endeavor. I need students, parents and teachers to volunteer for research that will assess the effects on motivation and learning when social studies teachers use computer simulation video games as one of their classroom teaching strategies.

I hope you participate in this research.

Bernadette Cayle

SETON HALL ⛪ UNIVERSITY.

1 8 5 6

Teacher Informed Consent Form

Researcher's Affiliation

The researcher, Mrs. Bernadette Coyle, a social studies teacher at Hillsborough High School for the past 17 years, is a doctoral candidate in the College of Education and Human Services, Department of Education, Leadership, Management and Policy at Seton Hall University.

Purpose of the Research

The purpose of the research is to assess the effects on student motivation and learning when computer simulation video games are used in social studies (history, economics, civics, sociology, geography, or psychology) classroom instruction.

Description of Procedures

The researcher will use mixed method research, both quantitative (using numeric assessments) and qualitative (assessing through narrative). Teachers who teach two of the same social studies courses will play a simulation video game with one class but not the other. The game will be only one of the teachers' strategies. Each teacher will determine how and for how long the simulation video games are used. All students will complete a pre and posttest, compiled by the researcher, on the targeted curriculum. Students will write "open-ended" reflection journals about the gaming experience as well as answers to a focused, "look back" that has specific questions. The teacher will administer and collect the assessments stated above, but not grade them. The teacher will put the unread assessments in sealed envelopes and return them to the researcher. The assignments listed above will not in anyway affect student grades. The data collection will take place within the first marking period of the fall semester of 2007. The teacher will make, administer and grade a summative test to students in both classes. Summative test grades will become part of students' report card grades. The researcher will access these grades.

Instruments

Instruments to be used include an open-ended reflection journal, a written "look-back" and content pretests and posttests. A few students from the classes that played the video games will be interviewed by the researcher without use of a recording machine. The researcher will take written notes. The researcher will access student files of those students who played the simulation video game. The purpose of this is to provide the researcher with enough information to accurately describe the students and thereby identify patterns of engagement and performance among similarly described students. The researcher will record the grades on the summative tests of all students.

Voluntary Participation

Participation in this study will be completely voluntary. There will be no penalty or loss to a student or teacher who refuses to participate or discontinues participation at any time.

College of Education and Human Services
Department of Education Leadership, Management and Policy
Tel: 973.761.9397
400 South Orange Avenue • South Orange, New Jersey 07079-2685

Anonymity

The teacher will only grade the summative tests. The authorship and grades of all other assessments will be known only to the researcher. Any identifying data will be coded to protect privacy. The code key will be safely locked and stored, separate from the data. All data will be destroyed three years after the completion of the dissertation.

Confidentiality

Only the researcher will have access to the collected data. The information may be shared with the researcher's mentor and dissertation committee members only when necessary and then with all identifiable information blacked out or coded. Collected data will be stored in a locked and secure place, to which only the researcher will have access. No electronic recording of the data will exist.

Foreseeable Risks

There are no anticipated risks for participation in this study.

Benefits

A case study completed in preparation for this dissertation gave credence to the hypothesis that the use of simulation video games as part of the pedagogy of Social Studies instruction improves student motivation and student performance on academic tests. The results of this research may provide valuable data to help inform staff development.

Volunteer teachers, students and the researcher will not be paid or given any type of remuneration for their participation in this study.

Compensation

No compensation will be offered to any participants because this research does not involve any risk

Contact Information

The researcher is available to answer any questions about the study or the rights of the students, teacher volunteers and parent/guardians. Parents and teacher volunteers may contact the researcher, Bernadette Coyle at (908) 874-4200 and use the telephone prompt to leave a phone message or by email at bcoyle@hillsborough.k12.nj.us If you prefer, you may contact the researcher's mentor at Seton Hall University, Dr. Charles Achilles at (973) 761-9223.

Consent

Consent to participate in this study is indicated by returning this letter, signed and dated below to Bernadette Coyle, Hillsborough High School, 466 Raider Boulevard, Hillsborough, NJ 08844. You will be given a signed and dated copy of this Informed Consent Form.

        Signature   (Date)

SETON HALL UNIVERSITY.

Parent/Guardian Informed Consent Form

<u>Researcher's Affiliation</u>

The researcher, Mrs. Bernadette Coyle, a social studies teacher at Hillsborough High School for the past 17 years, is a doctoral candidate in the College of Education and Human Services, Department of Education, Leadership, Management and Policy at Seton Hall University.

<u>Purpose of the Research</u>

The purpose of the research is to assess the effects on student motivation and learning when computer simulation video games are used in social studies (history, economics, civics, sociology, geography, or psychology) classroom instruction.

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<u>Instruments</u>

Instruments to be used include an open-ended reflection journal, a written "look-back" and content pretests and posttests. A few students from the classes that played the video games will be interviewed by the researcher without use of a recording machine. The researcher will take written notes. The researcher will access student files of those students who played the simulation video game. The purpose of this is to provide the researcher with enough information to accurately describe the students and thereby identify patterns of engagement and performance among similarly described students. The researcher will record the grades on the summative tests of all students.

<u>Voluntary Participation</u>

Participation in this study will be completely voluntary. There will be no penalty or loss to a student or teacher who refuses to participate or discontinues participation at any time.

SETON HALL UNIVERSITY.

1 8 5 6

Student Informed Consent Form

Researcher's Affiliation

The researcher, Mrs. Bernadette Coyle, a social studies teacher at Hillsborough High School for the past 17 years, is a doctoral candidate in the College of Education and Human Services, Department of Education, Leadership, Management and Policy at Seton Hall University.

Purpose of the Research

The purpose of the research is to assess the effects on student motivation and learning when computer simulation video games are used in social studies (history, economics, civics, sociology, geography, or psychology) classroom instruction.

Description of Procedures

The researcher will use mixed method research, both quantitative (using numeric assessments) and qualitative (assessing through narrative). Teachers who teach two of the same social studies courses will play a simulation video game with one class but not the other. The game will be only one of the teachers' strategies. Each teacher will determine how and for how long the simulation video games are used. All students will complete a pre and posttest, compiled by the researcher, on the targeted curriculum. Students will write "open-ended" reflection journals about the gaming experience as well as answers to a focused, "look back" that has specific questions. The teacher will administer and collect the assessments stated above, but not grade them. The teacher will put the unread assessments in sealed envelopes and return them to the researcher. The assignments listed above will not in anyway affect student grades. The data collection will take place within the first marking period of the fall semester of 2007. The teacher will make, administer and grade a summative test to students in both classes. Summative test grades will become part of students' report card grades. The researcher will access these grades.

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College of Education and Human Services
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Anonymity

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A case study completed in preparation for this dissertation gave credence to the hypothesis that the use of simulation video games as part of the pedagogy of Social Studies instruction improves student motivation and student performance on academic tests. The results of this research may provide valuable data to help inform staff development.

Volunteer teachers, students and the researcher will not be paid or given any type of remuneration for their participation in this study.

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No compensation will be offered to any participants because this research does not involve any risk

Contact Information

The researcher is available to answer any questions about the study or the rights of the students, teacher volunteers and parent/guardians. Parents and teacher volunteers may contact the researcher, Bernadette Coyle at (908) 874-4200 and use the telephone prompt to leave a phone message or by email at bcoyle@hillsborough.k12.nj.us If you prefer, you may contact the researcher's mentor at Seton Hall University, Dr. Charles Achilles at (973) 761-9223.

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_____   _____
           Signature   (Date)

Appendix B

Definition of Terms

The rapidly changing field of simulation video games makes use of many new terms that are being created alongside the technology. It is necessary that a glossary of terms accompany this dissertation because the non-gaming world may be totally unfamiliar with them.

1. Abductive learning occurs when students learn through recursive cycles of observation, analysis and reflection. (Squire, 2007 p.).

2. Annual yearly progress (AYP) is the percentage increase that all aggregate populations within a public school must achieve in relation to the previous year's achievement level. If a school fails to meet AYP, state sanctions are imposed.

3. Avatars are interactive representations of human figures in a game based or three-dimensional interactive graphic environment.

4. Big ideas are constructs of human history repeated for thousands of years, i.e., An army is only as good as its supply lines.

5. Digital natives are young people who have grown up with digital technology and fluently use it.

6. Differentiated instruction is a teaching philosophy based on the premise that teachers should adapt teaching methods to students' ability levels and most favored learning modalities.

7. Engagement in learning is observable interest by a student in the content and activities taught and facilitated by the teacher. This includes but is not

limited to listening attentively, taking notes, asking questions, cooperating with classmates, discussion and offering informed commentary.

8.   Functional epistemology is learning by doing.

9.   Games consist of rules that describe allowable player moves, game constraints and privileges (such as ways of earning extra points and penalties for illegal non-permissible actions). Further, the rules may be imaginative in that they need not relate to real-world events.

10.   Immersive worlds is a term used to mean simulations, games and other interactive, often 3D virtual spaces, or crossover spaces (i.e., between virtual and real). Immersive learning occurs in immersive worlds.

11.   Instructional reinforcement is the provision of verbal, symbolic, tangible or other rewards for desirable academic performance or effort at the classroom level.

12.   "Look Back" is a questionnaire that a qualitative researcher uses so that subjects may reflect on the intervention being assessed.

13.   Metacognition is learning how someone learns.

14.   Motivation is the inherent ideal, which leads us to be successful and effective in concert with our value systems.

15.   The No Child Left Behind Act , (NCLB) is federal legislation signed into law by President. George W. Bush on January 8, 2002. It requires standardized testing in grades 3 through 8 and once in high school with the expectation that 100% of students in public schools in the United States reach proficiency by 2014. It defines what it means to be a highly

qualified teacher and requires schools to have their staffs meet these qualifications. It allows only research based educational programs that have been proven effective, to be used in schools.

16. Platforms are the required hardware on which video games are played. i.e., Sony, Play Station, Nintendo Game Cube, Microsoft X Box, or personal computer.

17. Response cost occurs when a player loses points for a wrong answer.

18. Serious games are so called because they integrate gaming elements with learning or training objectives. It also refers to a movement by researchers and developers of specifically educational, not commercial video games.

19. Simulations are dynamic sets of relationships among several variables that change over time and reflect authentic casual process activated by player choice.

20. A simulation video game is a blend of the two interactive media – games and simulations.

21. Social loafing occurs when team members drop their individual responsibilities, expecting the team to pick them up.

Appendix C

Executive Summary For Determining DFGs

The District Factor Groups (DFGs) were first developed in 1975 for the purpose of comparing students' performance on statewide assessments across demographically similar school districts. The categories are updated every ten years when the Census Bureau releases the latest Decennial Census data.

Since the DFGs were created, they have been used for purposes other than analyzing test score performance. In particular, the DFGs played a significant role in determining the initial group of districts that were classified as Abbott districts. Additionally, subsequent to the *Abbott IV* court ruling, the DFGs were also used to define the group of school districts on which Abbott v Burke parity remedy aid would be based.

The DFGs represent an approximate measure of a community's relative socioeconomic status (SES). The classification system provides a useful tool for examining student achievement and comparing similarly-situated school districts in other analyses. The DFGs do not have a primary or significant influence in the school funding formula beyond the legal requirements associated with parity aid provided to the Abbott districts.

In updating the DFGs using the data from the most recent Decennial Census, efforts were made to improve the methodology while preserving the underlying meaning of the DFG classification system. After discussing the measure with representatives from school districts and experimenting with various methods, the DFGs were calculated using the following six variables that are closely related to SES:

1) Percent of adults with no high school diploma

2) Percent of adults with some college education

3) Occupational status

4) Unemployment rate

5) Percent of individuals in poverty

6) Median family income.

Appendix D

Protocol

Thank you for volunteering to help me do this research assessing the influence of using computer simulation video games as social studies pedagogy on motivation, learning and the abdication of curriculum. Please follow the uniformed protocol.

1. Teach the comparison class and the intervention class the curriculum for the same amount of time.

2. Have students complete the information at the top of the pre-and post tests.

3. Administer the test under standardized test procedures. Tell the students that the grades on the tests will not affect their course grades.

4. Allow 10 minutes for students to complete the pre-test and 10 minutes for students to complete the post-tests.

5. Place the unmarked tests in the envelope provided by the researcher, seal it and place it in the researcher's school mailbox.

6. Supply the URL for *Food Force* to the students in the intervention classes so that any of them may play it at home. Lend out *Civilization III* to any student who wants to play it during out-of-class time. Ask students who played either game to keep track of the minutes that they played and the points that they earned as well as the levels of difficulty they achieved.

7. Allow 15 minutes of class time for students in the intervention classes to complete "look backs" or write reflective journals.

8. Place the "look backs" and reflective journals in the envelope provided by the researcher, seal it and place it in the researcher's school mailbox.

Appendix E

World Hunger Test

1. What United Nations organization is responsible for feeding areas experiencing a hunger crisis?
    A. Red Cross
    B. World Food Program
    C. Network For Good
    D. Salvation Army

2. Feeding large numbers of people can be expensive. How much do you think a basic ration of food for one day costs?
    A. $ ..30
    B. $1.00
    C. $3.00
    D. $5.00

3. If an area is dangerous because of war or conflict, what would be the best way to get food to hungry people, quickly?
    A. by heavily armored trucks
    B. by delivering to locations away from the fighting
    C. through air-drops from planes
    D. shipping the food by boat

4. Which of the following is NOT a main cause of hunger?
    A. drought
    B. war
    C. natural disasters
    D. disease

5. What do you think would be the first step to provide food for hungry people?
    A. send food from whatever country is closest to the hungry people as quickly as possible.
    B. finding out how many hungry people there are and where they are located.
    C. petitioning governments around the world to donate food or sell food cheaply.
    D. visiting the hungry people and asking them what they need and how much thy need.

6. What kind of food is the best to send to people in need?
    A. Staples like rice and sugar
    B. Cheap food like corn and flour
    C. Foods with vitamins such as vegetables
    D. Foods with proteins such as chicken

7. What people are most susceptible to dying during a food crisis?
    A. Children
    B. People with the flu
    C. Elderly people
    D. Farmers

8. What is the approximate number of hungry people in the world?
    A. 30 million
    B. 80 million
    C. 150 million
    D. 850 million

9. What is NOT a challenge faced by workers delivering food in areas plagued by conflict?
    A. cleaning land mines
    B. rebuilding bridges
    C. gaining permission from soldiers from both sides of a conflict
    D. avoiding conflict with armed rebels

10. How long do you think it takes an are to fully recover from a food crisis?
    A. two years
    B. five years
    C. ten years
    D. twenty years

11. What is one way that a relief organization can help a community become self-sufficient again after a food crisis?
    A. Give food to citizens who learn valuable skills.
    B. Plant a large number of varied crops that are high in nutritional value.
    C. Donate millions of dollars to be used for food and teaching efficient farming techniques.
    D. Send experts from the UN to permanently set up a center to help with all problems.

12. Desertification is
    A. the process by which fertile land turns into desert
    B. the process by which arid land is made fertile
    C. limited to West Africa
    D. is the sole result of nomadic herders

13. According to the Global Environment Facility, an organization of the United Nations, how many countries in the world would experience desertification?
    A. 50
    B. 75
    C. 100
    D. 150

14. Today, what region in the world has the most people who go hungry (on a per capita basis)?
    A. Bangladesh
    B. Rural China
    C. India
    D. Sub-Sahara Africa

15. What percentage of the world's grain is used to feed livestock?
    A. 15%
    B. 33%
    C. 50%
    D. 60%

16. Which of the following is not a poor health condition caused by the floriculture industry?
    A. miscarriage
    B. hunger
    C. pesticide poisoning
    D. cocaine use

17. In countries most affected by hunger and malnutrition, what is the average life expectancy?
    A. 30 years
    B. 38 years
    C. 45 years
    D. 50 years

18. How many children under the age of five die every year as a result of hunger?
    A. 800,000
    B. 2 million
    C. 6 million
    D. 10 million

19. The number of hungry people in the world grows each year by
    A. 5 million
    B. 10 million
    C. 15 million
    D. It remains static.

20. What percentage of the world's hungry is female?
    A. 50%
    B. 60%
    C. 70%
    D. 80%

Appendix F

What is Necessary for a Civilization to Prosper - Test

1. What is the number one priority for any government?
A. maintaining human rights
B. defending itself
C. producing wealth
D. developing technology

2. Which type of land is capable of growing the most food?
A. flood plains
B. grasslands
C. plains
D. seashores

3. Where is the bet location for a city?
A. on high ground
B. on the seacoast
C. along a river
D. on an island in the sea.

4. What is the **most negative** consequence of voiding contact with other civilizations?
A. Your gene pool will weaken.
B. Your people will speak only one language.
C. You will not benefit from the ideas of other civilizations.
D. You will not benefit from the accomplishments of other nations.

5. Which type of dominance over other civilizations is the **most difficult** for a civilization to achieve?
A. political
B. economic
C. artistic
D. cultural

6. Which of the following is **most rare**?
A. finding food in the sea
B. finding rubber tree plants in the jungles
C. finding oil in deserts
D. finding gold in mountains

7. Which of the following is the **most recent** technological advancement?
A. electrical machinery
B. mapmaking
C. interchangeable parts
D. gunpowder

8. Before the 20th Century what was the least significant benefit of an extensive road system?
A. more trade.
B. better military deployment
C. faster spread of ideas
D. bigger tourist industry

9. A long was with high casualties suffered by the aggressive civilization will most likely result in
A. a demand for a change in the government.
B. increased respect for the government.
C. increased fear of the government.
D. It will have neither a positive or negative effect.

10. What is the cheapest way for a civilization to acquire technology?
A. research and develop its own
B. conquer other civilizations
C. use spies
D. trade for it from other civilizations

11. Living in cities became possible when people learned how to
A. build walls
B. make weapons
C. farm
D. write

12. When a cultural project (i.e., museum, university, cathedral) is desired by people in a civilization and **is rushed to completion** all of the following are true **expect:**
A Military funding will increase.
B Leadership is required.
C. Materials will cost more.
D. Wages to workers will be higher.

13. Leaders of a civilization are **most likely** to emerge
A. in times of peace.
B. when a civilization is attached by another civilization.
C. in the two years preceding an election.
D. when famine strikes the civilization.

14. Which city of a civilization is most likely to be taken over by another civilization?
A. the smallest
B. the one with the weakest defenses
C. the one that closely borders another civilization
D. the one with the most immigrants

<u>Appendix G</u>

<u>"Look Back"</u>

<u>Your name</u>_____ Date of Birth_____

<u>Name of game</u>_____

Please answer the following questions as clearly as you can. The purpose of this "look back" is to help the researcher assess the influence of the addition of computer video simulations games on student motivation and learning. No answer is wrong. This questionnaire does not affect your grade in any way.

1. Explain why you played the simulation video game at home?

2. About how many total minutes did you play the game? Add the minutes if you played more than one session.

3. What level did you achieve or how many points did you acquire?

4. How violent was the game? Choose 1 -2-3-4-or-5. 1 is not violent.- 5 is extremely violent.

5. Do you feel the violence was necessary? Why or why not?

6. If the game helped you understand and learn the topic, explain as best as you can - how or say "No." What was different about learning by playing the simulation game rather than learning by more traditional methods?

7. Did playing the video game motivate you to learn more about the topic? If yes cite evidence of your **motivation ?** i.e. Did you look up more information, play another video game, discuss it with someone, read a newspaper, watch a movie? If no, write "No."

8. What would you have been doing during the time that you were playing the video game if you had not been playing the game?

9. Do you feel that Social Studies classes would be better, more enjoyable, more engaging, result in more learning or improve in any other way - if more computer gaming became a common strategy for teaching social studies? Please explain why or why not.

10. Would you recommend that playing simulation video games become a regular component of Social Studies pedagogy (teaching)? Why or why not? Please be specific. The researcher needs students' quotes to document the findings.

Appendix H

Intervention (CP) Class 1 L played *Food Force.*

Code	sex	pre-t	%	mean	median	mode	SD	post-t	%	mean	median	mode	SD	diff	%diff
1L1	F	9	43					10	50					1	5
1L2	M	6	30					12	60					6	30
1L3	M	5	25					12	60					7	35
1L4	M	7	35					11	55					4	20
1L5	F	10	50					13	65					3	15
1L6	F	9	45					12	60					3	15
1L7	M	13	65					13	65					0	0
1L8	F	5	25					9	45					4	20
1L9	F	9	45					12	60					3	15
1110	F	6	30					13	65					7	35
1L11	M	7	35					11	55					4	20
1L12	M	9	45					12	60					3	15
1L13	F	9	45					13	65					4	20
1L14	M	9	45					12	60					3	15
1L15	M	7	35					11	55					4	20
1L16	M	9	45					15	75					6	30
1L17	M	5	25					8	40					3	15
1L18	M	11	55					16	80					5	25
1L19	F	11	55					13	65					2	10
1L20	M	7	35					9	45					2	10
1L21	M	7	35					13	65					6	30
1L22	M	8						13	65					5	25
	ALL		40.45	8.09	8.5	9	2.11	ALL	59.75	11.95	12.0	13	1.9	3.86	19.3
	8 F		42.5	8.5	9.0	9	2.00	8 F	59.35	11.87	12.5	13	1.6	3.37	16.85
	14 M		39.25	7.85	7.0	7	2.21	14 M	60.0	12.0	12.0	12	2.1	4.14	20.7

Comparison (CP) Class 4 L taught through traditional pedagogy

Code	sex	pre-t	%	mean	median	mode	SD	post-t	%	mean	median	mode	SD	diff	%diff
4L1	M	12	60					13	65					1	5
4L2	F	5	25					3	65					-2	-10
4L3	F	10	50					10	50					0	0
4L4	F	11	55					10	50					-1	- 5
4L5	F	5	25					9	45					4	20
4L6	M	10	50					15	75					5	25
4L7	M	8	40					10	50					2	10
4L8	M	13	65					12	60					-1	-5
4L9	F	8	40					7	35					-1	-1
4L10	F	9	45					13	65					4	20
4L11	M	9	45					11	55					2	10
4L12	M	7	35					8	40					1	5
4L13	M	8	40					8	40					0	0
4L14	M	8	40					10	50					2	10
4L15	M	9	45					7	35					2	10
4L16	M	10	50					5	25					-5	-25
	ALL		44.35	8.87	9.0	8	2.19	ALL	47.15	9.43	10	10	3.1	.81	4
	6 F		38.0	7.6	6.5	5	2.53	6 F	42.0	8.4	9	10	3.39	.66	3
	10M		47.25	9.45	9.0	8	1.9	10 M	49.5	9.9	10	10	3.0	.9	5

Intervention (CP) Class 5 G played *Food Force.*

Code	sex	pre-t	%	mean	median	mode	SD	post-t	%	mean	median	mode	SD	diff	%diff
5G1	F	8	40					10	50					2	10
5G2	F	7	35					10	50					3	15
5G3	F	9	45					11	55					2	10
5G4	F	8	40					13	65					5	25
5G5	F	11	55					16	80					5	25
5G6	F	8	40					12	60					4	20
5G7	M	13	65					14	70					1	5
5G8	M	10	50					12	60					2	10
5G9	F	8	40					13	65					5	25
5G10	F	7	35					9	45					2	10
5G11	F	7	35					8	40					1	5
5G12	M	8	40					6	30					-2	-10
5G13	F	6	30					9	45					3	15
5G14	M	9	45					12	60					3	15
5G15	M	9	45					7	35					-2	-10
5G16	M	6	30					10	50					4	20
5G17	F	6	30					11	55					5	25
5G18	F	7	35					9	45					2	15
5G19	F	6	30					9	45					3	15
5G20	F	9	45					14	70					5	25
	ALL		41.0	8.1	8.0	8	1.8	ALL	55	10.95	10.5	9	2.53	2.65	13
	8 F		38.0	7.6	7.5	8	1.4	8 F	55	11.0	10.5	9	2.32	3.36	17
	14 M		46.0	9.2	9.0	9	2.3	14 M	51	10.2	11.0	12	3.13	1.0	5

Comparison (CP) Class 1 G taught through traditional pedagogy

Code	sex	pre-t	%	mean	median	mode	SD	post-t	%	mean	median	mode	SD	diff	%diff
1G1	F	13	65					13	65					0	0
1G2	F	6	30					9	45					3	15
1G3	M	6	30					5	25					-1	-5
1G4	F	8	40					8	40					0	0
1G5	M	7	35					9	45					2	10
1G6	M	4	20					9	45					5	25
1G7	F	6	30					9	45					3	15
1G8	M	5	25					10	50					5	25
1G9	M	8	40					10	50					2	10
1G10	F	9	45					7	35					-2	-10
G11	M	4	20					3	15					-1	-5
1G12	F	7	35					7	35					0	0
1G13	M	7	35					9	45					2	10
1G14	F	8	40					6	30					-2	-10
1G15	M	10	50					10	50					0	0
1G16	M	7	35					11	55					4	20
1G17	F	5	25					8	40					3	15
1G18	F	8	40					10	50					2	10
1G19	F	7	35					12	60					5	25
1G20	M	14	70					10	50					-4	-20
1G21	M	6	30					10	50					4	20
1G22	F	5	25					8	40					3	15
1G23	M	10	50					7	35					3	15
	ALL		37	7.39	7	7	2.54	ALL	43	8.69	9	10	2.23	1.56	8
	11 F		37	7.45	7	8	2.25	11 F	44	8.81	8	8	2.14	1.36	7
	12 M		37	7.33	7	7	2.75	12 M	32	6.3	9.5	10	2.39	1.75	9

Intervention (H) Class 2 H played *Civilization III*

Code	sex	pre-t	%	mean	median	mode	SD	post-t	%	mean	median	mode	SD	diff	%diff	x-pla2
2H1	M	6	43					8	57					2	14	150
2H2	F	8	57					10	71					2	14	75
2H3	M	7	50					5	36					-2	-14	20
2H4	M	7	50					7	50					0	0	0
2H5	M	4	29					9	64					5	36	60
2H6	M	4	29					5	36					1	7	60
2H7	F	5	36					7	50					2	14	0
2H8	F	6	43					6	43					0	0	10
2H9	M	7	50					9	64					2	14	50
2H10	F	10	71					10	71					0	0	0
2H11	M	9	64					8	57					-1	-7	0
2H12	M	6	43					7	50					1	7	180
2H13	F	5	36					5	36					0	0	0
2H14	M	3	21					6	43					3	21	150
2H15	F	10	71					9	64					-1	-7	0
2H16	F	5	36					6	43					1	7	0
2H17	F	9	64					4	29					-5	-36	200
2H18	M	5	36					6	43					1	7	0
2H19	M	9	64					6	43					-3	-21	0
2H20	M	6	43					9	64					3	21	0
2H21	M	4	29					7	50					-3	-21	90
2H22	M	8	57					10	71					-2	-14	60
2H23	M	11	79					11	79					0	0	0
2H24	F	6	43					7	50					1	7	70
ALL			48	6.67	6	6	2.18	ALL	53	7.38	7	7	1.9	.29	2	1175
9 F			51	7.11	6	5	2.26	9 F	51	7.11	7	10	2.1	0.0	0	355
15 M			46	6.4	6	6	2.23	15M	54	7.53	7	7	1.9	.47	3	820

Comparison (CP) Class 6 H taught through traditional pedagogy.

Code	sex	pre-t	%	mean	median	mode	SD	post-t	%	mean	median	mode	SD	diff	%diff
6H1	F	6	43					8	57					2	14
6H2	M	4	29					7	50					3	21
6H3	M	8	57					9	64					1	7
6H4	M	9	64					8	57					-1	-7
6H5	M	7	50					6	43					-1	-7
6H6	F	5	36					10	71					5	36
6H7	F	4	29					8	57					4	29
6H8	M	6	43					6	43					0	0
6H9	F	7	50					7	50					0	0
6H10	F	7	50					7	50					0	0
6H11	F	8	57					9	64					1	7
6H12	M	7	50					8	57					1	7
6H13	F	6	43					4	29					-2	-14
6H14	F	8	57					9	64					1	7
6H15	M	7	50					10	71					3	21
6H16	F	6	43					6	43					0	0
6H17	M	8	57					10	71					2	14
ALL			47	6.64	7	7	1.41	ALL	55	7.76	8	8	1.68	1.11	8
9 F			54	7.56	6	6	1.32	9 F	45	6.33	8	8	1.81	1.22	9
8 M		50	7.0	7	7	1.51	8M	57	8.0	8	6	1.6	.75	5	

Intervention (CP) Class 10 S played *Civilization III.*

Code	sex	pre-t	%	mean	median	mode	SD	post-t	%	mean	median	mode	SD	diff	%diff
10S1	M	7	50					6	43					-1	-7
10S2	M	6	43					4	29					-2	-14
10S3	F	5	36					2	14					-3	-21
10S4	F	5	36					4	29					-1	-7
10S5	F	4	29					4	29					0	0
10S6	F	7	50					5	36					-2	-14
10S7	F	5	36					2	14					-3	-21
10S8	M	8	57					7	50					-1	-7
10S9	F	5	36					4	29					-1	-7
10S10	M	7	50					5	36					-2	-14
10S11	M	3	21					3	21					0	0
10S12	M	9	64					7	50					-2	-14
10S13	M	3	21					2	14					-1	-7
10S14	F	6	43					6	43					0	0
10S15	F	5	36					4	29					-1	-7
10S16	F	6	43					5	36					-1	-7
10S17	F	5	36					5	36					0	0
10S18	F	7	50					2	14					-5	-36
10S19	F	4	29					2	14					-2	-15
ALL		40		5.63	5	5	1.61	ALL		30	4.16	4	4	1.68	-1.47	-10
8 F		38		5.33	5	5	0.98	12 F		27	3.75	4	2	1.42	-1.58	-11
14 M		44		6.14	7	7	2.34	7 M		35	4.86	5	7	1.95	-1.29	-9

Comparison (CP) Class 3 S taught through traditional pedagogy

Code	sex	pre-t	%	mean	median	mode	SD	post-t	%	mean	median	mode	SD	diff	%diff
3S1	F	5	36					7	50					2	14
3S2	F	5	36					4	29					-1	-7
3S3	M	3	21					3	21					0	0
3S4	M	6	43					6	43					0	0
3S5	F	4	29					4	29					0	0
3S6	M	4	29					4	29					0	0
3S7	M	6	43					2	14					-4	-29
3S8	M	7	50					7	50					0	0
3S9	M	5	36					9	64					4	-29
3S10	F	4	29					6	43					2	14
3S11	M	5	36					4	29					-1	-7
3S12	F	5	36					4	29					-1	-7
3S13	M	10	71					7	50					-3	-21
3S14	M	12	86					10	71					-2	-14
3S15	M	7	50					9	64					2	14
3S16	F	5	36					4	29					-1	-7
3S17	F	5	36					6	43					1	7
3S18	M	6	43					7	50					1	7
3S19	F	7	50					5	36					-2	-14
3S20	F	6	43					5	36					-1	-7
3S21	F	8	57					9	64					1	7
3S22	F	8	57					3	21					5	36
3S23	M	4	29					2	14					2	14
3S24	M	7	50					7	50					0	0
3S25	F	4	29					7	50					3	21
ALL		42		5.92	5	5	2.04	ALL		40	5.64	6	7	2.25	0	0
F 12		39		5.5	5	5	1.45	F 12		38	5.33	5	4	1.72	0	0
M 13		45		6.3	6	6	2.47	M 13		42	5.92	7	7	2.69	0	0

<u>Appendix I</u>

t TESTS

A t Test is used to compare the means between 2 groups

<u>Decision Rule</u> Reject the Ho at the .05 level of significance if **t** is equal to or more positive than 1.812

<u>t distribution between 1L and 4 L</u>

    df = 25.9
     t = 4.096

Ho rejected.   **Intervention game, *Food Force***

<u>t distribution between 5 G and 1G</u>

    df = 40.9
     t = 1.55

Ho retained.

<u>t distribution between 2 H and 6 H</u>

    df = 37.85
     t = -1.2

Ho retained.

                           Intervention game, *Civilization III*

<u>t distribution between 10 S and 3 S</u>

    df = 40.2
     t = - 3.45

Ho is retained.

World Hunger
Group Article Activity

Directions: Please read your assigned article and answer the corresponding questions in your group. You will then meet with others to answer all of the questions on this sheet.

Article 1: "Women and Hunger: The Inextricable Link"

1. Why are women denied some of their basic rights around the world? How is this done?

2. Name three reasons why women are more likely to go hungry than men.

3. Women produce the majority of food in places like Africa. But, do they own their own land and receive support from outside organizations? Why or why not?

Article 2: "How WFP Fights Hunger"

1. What is the first step taken by the WFP when this organization attempts to help hungry people?

2. What is an Emergency Operation?

3. Please make an organizer below or on the back that tracks the steps taken by WFP in a food crisis.

Article 3: "Darfur's Hunger Set to Continue"

    1. Why have the people of Darfur fled their homes?

    2. Why is there a food crisis in Darfur?

    3. What steps are being taken to alleviate hunger in Darfur? Are they working?

Article 4: "There is no excuse for allowing families to go hungry"

    1. How does hunger affect those living in the United States?

    2. What are some of the accomplishments of the Food Stamps Program?

    3. What is the Farm Bill, and how does it affect hungry families?

    Final thoughts:
       ➢ How does hunger affect people in the US and around the globe?

       ➢ What are the best ways to help those experiencing hunger?

       ➢ What are the challenges faced by organizations that help people experiencing food shortages?

THE HUNGER PROJECT

2003 Monthly Newsletters

JULY 2003

Women and Hunger: The Inextricable Link

On 21 May 2003, Joan Holmes, president of The Hunger Project, testified before the U.S. Congressional Human Rights Caucus. Representative Tom Lantos invited Joan - the only female speaker on the expert panel of six - to address the correlation between women and the end of hunger. The invitation stated: "Hunger is a question of misdistribution and inequity - not lack of food." Notably, Joan was the only expert who didn't focus on famine and food aid. Excerpts from her testimony follow.

The greatest violation of human rights in our world is the subjugation of women, and the persistence of world hunger is its greatest consequence.

Famines grab our headlines, yet famines account for less than 8 percent of hunger-related deaths. The remaining 92 percent are the result of chronic, persistent hunger - the silent, day-by-day killer that takes the lives of 20,000 people each and every day.

Chronic hunger is not an issue of food. Most hungry countries produce more than enough food.

Chronic hunger is a human issue. It occurs when people are systematically denied the opportunity to earn enough money, to produce enough food, to be educated, to learn the skills to meet their basic needs, and to have voice in the decisions that affect their lives.

When we speak of hungry people, we are literally talking about women and children. The vast majority of the world's poor are women, and the gap between women and men caught in the cycle of poverty has continued to widen in the past decade.

An estimated 80 percent of the world's refugees are women and children. Two-thirds of the world's illiterates are female. Of the millions of children kept out of school, two-thirds are girls.

The social conditions that deny women their most basic rights are kept in place by violence and the ever-present threat of violence. In this new century - in the year 2003 - many societies still find it justifiable to beat, rape, stone, burn, disfigure and murder women.

There is growing recognition that the subjugation, marginalization and disempowerment of women is the fundamental *cause* of the remaining hunger in our world. Yet policies and programs have failed to incorporate this knowledge.

There are three ways that gender inequality is fundamentally linked to hunger.

Rep. Lois Capps (D-CA) and caucus co-chair Rep. Frank Wolf (R-VA).

1. Women's well-being. Consider India and Bangladesh, which account for more than one-third of the world's remaining hunger. One-third of all babies in Bangladesh and one-quarter of the babies in India are *born* underweight and malnourished. This compares to 12 percent in Africa.

Why are the rates of malnutrition higher in South Asia than in Africa - which is considerably less developed? A 1996 UNICEF study concluded, "The exceptionally high rates of malnutrition in South Asia are rooted deep in the soil of inequality between men and women."

An insidious cycle of malnutrition persists in South Asia. A girl in India and Bangladesh is born underweight and malnourished. She is nursed less and fed less nutritious food than her brother. She is often denied health care and education. She is forced to work, even as a child. She is married and pregnant when she is young, often just a teenager. She is malnourished when she gives birth to babies, who are underweight and malnourished. And the cycle continues.

2. Women as producers. Just as we must learn to think "women" when we think "hungry people" - we must think "women" when we think "food producers." And we do not. Women have been largely bypassed by programs for agricultural development.

In sub-Saharan Africa, women produce 80 percent of the food and do the vast majority of the work to process, transport, store and market Africa's food. Yet women own only 1 percent of the land, receive 7 percent of farm-extension services, and receive less than 10 percent of the credit given to small-scale farmers.

If this weren't challenging enough, African women food farmers are being devastated - and food production is further declining - because of HIV/AIDS, an epidemic fueled by gender inequality. Gender inequality keeps women uninformed about prevention, powerless to protect themselves, last in line for care and life-saving treatment - and imposes an overwhelming burden on them to care for the sick and dying.

Jane Simoneaux, Hunger Project investor from Washington State, speaking with Joan Holmes and Hunger Project staff member, Jim Goodman.

3. Women's leadership. In hungry countries, women bear full responsibility for the key issues in ending hunger: family health, nutrition, education and - increasingly - family income. Yet women traditionally have no say in decisions affecting these issues.

Studies show that when women gain voice in decision-making, they make health, education and income-generation their highest priorities. They take action against the practice of dowry, domestic violence, child marriage and child labor. They help other women to know their rights.

In India and Bangladesh, there is an extraordinary opportunity. New laws guarantee that one-third of all seats in elected local government are reserved for women.

As a result, in the region of the world where women have been the most subjugated, one million women have become elected local leaders - more elected women than in all the other countries of the world combined. This transfer of power to these one million elected women - who themselves are often illiterate and malnourished - is the greatest social experiment of our age.

It is time to dramatically re-examine our foreign aid programs. Ending hunger requires that the *majority* of resources be directed to empowering women. The GAINS legislation to be introduced shortly in Congress is one step in the right direction. The Millennium Challenge Account is an immediate opportunity to direct resources to the key change agents for the end of hunger - which in every developing country are women.

Audience at congressional briefing listens to Joan testify.

For the complete text of Joan's testimony or to watch the briefing video - as well as for background information on the GAINS legislation and Millennium Challenge Account - click here.

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World Food Programme

HOW WFP FIGHTS HUNGER

WFP's logistics operation ferries vital humanitarian supplies to Pakistan earthquake survivors

Whether refugees are fleeing war or drought is destroying farmland, hunger is often the first emergency. The hungry look to WFP for the first response. In 2006, the agency's food assistance reached 63.4 million people caught in the world's ever-widening net of humanitarian disasters.

The number of food emergencies has been rising over the past two decades, from an average of 15 per year during the 1980s to more than 30 per year since the turn of the millennium.

Whatever the cause - natural or man-made - hunger is one of the first threats to survival.

At the request of the local government, WFP sets the well-oiled wheels of its emergency response procedure into motion. Over its 40 year history, the agency has turned the complex business of getting the right food to the right people in the right place into a fine science.

First, Emergency Assessment teams are sent in to ask the key question: how much food assistance is needed for how many beneficiaries and for how long? And, how can the food be delivered to the hungry?

Equipped with the answers, WFP draws up an Emergency Operation (EMOP), including a plan of action and a budget. This lists who will receive food assistance, what rations are required, the type of transport WFP will use and which humanitarian corridors lead to the crisis zone.

Next, WFP launches an **Appeal** to the international community for funds and food aid. The agency relies entirely on voluntary contributions to finance its operations, with donations made in cash, food or services. Governments are the biggest single source of funding. More than 60 support WFP's worldwide operations.

As funds and food start to flow, WFP's logistics team works to bridge the gap between the donors and the hungry. In 2006, the agency distributed 4 million tonnes of food aid by air, land and sea.

Ships carry the largest WFP cargo, their holds filled to the brim with 50,000 tonnes or more of grain, cans of cooking oil and tinned food; every day, the agency has 30 ships on the high seas, frequently rerouting vessels to get food fast to crisis zones.

In extreme environments, WFP also uses the skies to reach the hungry, airlifting or airdropping food directly into disaster zones.

Before the aid can reach its country of destination, logistics experts often need to upgrade ports and secure **warehouses**.

Trucks usually make the final link in WFP's food chain - transporting food aid along the rough roads that lead to the hungry. Where roads are impassable or simply nonexistent, WFP relies on less conventional forms of transport: donkeys in the Andes, speedboats in the Mozambique floods, camels in Sudan and elephants in Nepal.

WFP high-energy biscuits are unloaded at Ngozi, Burundi

When the food reaches designated distribution sites - refugee camps, therapeutic feeding centres and other emergency shelters - WFP teams-up with governments and non-governmental organisations (NGOs) to deliver food into the hands and mouths of the hungry. WFP works with over 3,300 international and local NGOs to distribute food aid.

At this stage, local community leaders work closely with WFP to ensure rations reach the people who need it most: women, pregnant mothers, children and the elderly.

BBC NEWS

Darfur's hunger set to continue

Laura Melo works for the United Nations World Food Programme (WFP) in East Africa and has just been on a trip to the war-torn Darfur region of Sudan.

This is her account of what she saw.

"We are children, when we grow up we will build our country and will make it strong," sing a group of youngsters.

It is an ambitious plan when their starting point is a camp for people displaced by the conflict in Darfur.

Gathered under the shade of a tree in a makeshift nursery in Zamzam camp in North Darfur, they sing the songs Sudanese schoolchildren have always sung.

But this might be the only element of normality in their existence.

Their lives have been shattered by violence that is incomprehensible to them.

Looted

More than two million people in Darfur fled their homes - most to neighbouring areas, some across the border to Chad and elsewhere - to escape a conflict that is often simplified as a fight between Arab and African groups, but is also a conflict for the control of scarce resources such as water and fertile land.

> **I saw six bodies, but we didn't have time to see who they were or whether there were more people killed**
> Asha Khatir

Homeless and destitute, the displaced and refugee families rely almost entirely on food aid to survive.

So do hundreds of thousands other people who live in Darfur but whose lives are in disarray.

At the beginning of the year, the WFP estimated a progressive increase in the number of those in need of food assistance to a peak of 2.8 million people during the July-September rainy season.

Now, some anticipate that this figure could be much higher.

Last April's ceasefire for Darfur is violated on a regular basis, and thousands of people continue to be forced out of their homes - often at a rate that humanitarian agencies find difficult to keep up with.

Asha Khatir and her four children had just arrived when I met them in Kalma camp, near the South Darfur capital, Nyala.

They had fled Marla, 53km south-east of Nyala, following a series of attacks - the last against women and children getting water from a well.

Asha's story is tragically familiar in the camps scattered across Darfur.

"Our village was attacked and all the houses burned," she says.

"I saw six bodies, but we didn't have time to see who they were or whether there were more people killed. My uncle was also killed."

Holding her eight-month-old baby, Asha assures me that she feels safe in Kalma camp.

She laments, however, the loss of the harvest: "All our food was looted."

Grim prospect

Fighting has reduced food production in Darfur to a minimum, most economic activities have ceased and the strain on the land available is increasing.

Traditional nomadic movements are disrupted, leaving herds to overgraze in areas without sufficient water, resulting in drought-like conditions.

Insecurity has prevented both the traditional export of camels to neighbouring markets and cattle sales within Darfur, dramatically decreasing the pastoralists' purchasing power.

Moreover, most farmers don't have access to their land.

Darfur is facing the grim prospect of worsening hunger.

With the continued displacement, and prevailing economic hardship, more and more people are likely to find themselves with nothing to feed their children.

The price of millet, the preferred staple food, has increased by 50% since January 2004 (from $20 to $30 for 100kg), while most families are poorer now than a year before.

Women in the camps are terrified of going out to collect firewood or grass to sell.

Despite a decision to have a buffer zone around the displaced camps, people there continue to talk about armed men on camels harassing those who venture out.

Casual labour is scarce. There are no signs of people feeling safe enough to go home in time to cultivate for the next harvest.

Food shortages are, therefore, a long-term prospect.

On the move

Humanitarian agencies, meanwhile, continue to race against time to reach those in need.

Every day, hundreds of trucks and aeroplanes are on the move to deliver much-needed food aid.

Insecurity, bad roads, lack of funds and a consequent lack of capacity are, however, major deterrents to the Herculean task of delivering an average of 30,000-40,000 metric tons of food a month.

It can take as long as four months for food contributions from abroad to reach Port Sudan and two more months for the commodities to reach Darfur.

With the rainy season approaching, the pressure is even greater.

Large areas of West Darfur will be cut off during the rainy season between July and September.

An additional 23,000 metric tons of food need to be moved to be ready for distribution when the rains start.

WFP is, however, short of funds to purchase all the food required or enough trucks to transport that food.

Amidst this uncertainty, and as WFP and other agencies struggle for a second straight year before the rains to reach all those in need, the voices of the children of Zamzam camp return to me: like all other children in the world, they want to grow up and be strong.

Their dream cannot be ignored.

The Salt Lake Tribune

There is no excuse for allowing families to go hungry

Gina Cornia
Salt Lake Tribune
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Hunger is a real and present issue for many Utah families. One in seven Utah households has trouble affording enough food.

Congress has a chance to make a difference for these families by strengthening the Food Stamp Program when it passes a new farm bill. Improving food stamps may seem like common sense, but it will cost money, and money is tight in Washington, D.C., these days. That's why we need to understand why this issue is so important.

Nearly 52,000 families in Utah, containing 65,507 children, access the Food Stamp Program. Benefits are modest, averaging only about a dollar per meal for each recipient. But for many families, food stamp benefits help make ends meet.

That's because a typical family with children on the Food Stamp Program has income of only around half of the poverty line, or $8,800 for a family of three. In roughly half of these families, at least one parent is employed, but the job doesn't pay enough for the family to live on.

Food stamps help families stretch precious dollars. They're the only way many Americans can afford to put a decent meal on the table every day.

Each year food stamps lift a million children out of poverty. They lift another million children out of what the government calls "extreme poverty," where the family's income is below half of the poverty line.

In fact, food stamps are so effective in fighting hunger and poverty that they were recently cited as a "case study" of successful government.

But despite the program's many accomplishments, millions of children live in families that have difficulty affording an adequate diet. The government has a name for this too - "food insecurity" - and it affects one out of every six American children.

Food insecurity hurts children in many ways. It is particularly harmful in early childhood, when inadequate nutrition can stunt growth and development. Infants and toddlers from food-insecure families are almost twice as likely to be in fair or poor health as other children. In older children, food insecurity can lead to poorer health, lower school achievement and emotional problems.

We can do something about this problem by strengthening food stamp benefits. Because of cuts Congress made in the Food Stamp Program in 1996, food stamps no longer keep pace with the rising cost of living. Often, families' benefits run out before the end of the month.

In July the House of Representatives passed its 2007 Farm Bill, including improvements to nutrition programs. As the Senate prepares to address the Farm Bill they should follow the leadership of the House and include these same improvements in the Senate bill.

Improvements include increasing the minimum benefit from $10 a month to $16, adjusted annually for inflation. It increases the resource limits families must meet in order to qualify for the Food Stamp Program. These resource limits, which have been frozen since 1986 at $2,000 for most households, would begin to be adjusted annually.

The House bill also includes additional funding for the Emergency Food Assistance Program, which provides support to food pantries.

The Senate should adopt these and other important improvements passed in the House version of the Farm

Bill. This will help ensure that American consumers will have access to enough food, which is one of the main goals of the Farm Bill. A Farm Bill that continues farm subsidies while steadily undermining poor families' ability to buy food is not something we should support.

There's no excuse for a wealthy nation like ours to allow food stamps for needy families to continue shrinking.

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* GINA CORNIA is director of Utahns Against Hunger.

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