An investigation of the relationship of selected end of the course test scores and selected perceptions of teachers on the use of technology in an urban high school cluster

Terance Larnard Shipman

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AN INVESTIGATION OF THE RELATIONSHIP OF SELECTED END-OF-COURSE TEST SCORES AND SELECTED PERCEPTIONS OF TEACHERS ON THE USE OF TECHNOLOGY IN AN URBAN HIGH SCHOOL CLUSTER

Advisor: Dr. Moses Norman

Dissertation dated May 2013

The purpose of this study was to determine if teachers' use of instructional technology and other factors would influence End-of-Course Test (EOCT) scores. The EOCT scores were analyzed in terms of, gender, ethnicity, teacher experience, teacher qualifications, and instructional practices. Establishing a relationship between the independent variables and performance levels on the EOCT scores may allow schools leaders to develop possible intervention strategies for high school students.

The research study was conducted at a high school in an Urban School cluster. The criteria for the selection were those students who attended the high school and who took the EOCT for the 2011-2012 academic school year. Three methods of gathering data were used in this study: a survey, interviews, and EOCT scores overall. This study
included teachers from the high school who had taught the high school students identified for this research study and current EOCT teachers. The researcher surveyed teachers who are teaching EOCT and those teachers who were on the instructional staff from the high school who taught these students that took the EOCT in 2011-2012 were interviewed. The method of using percentages of data analysis was used to determine relationships between the demographic groups of gender, ethnicity, and total population EOCT scores and their performance on the EOCT scores.

Analysis of the data from the research found that teachers were very limited in the technology they had in their classrooms and the school. This did have an effect on how they could integrate technology into the curriculum. The school's overall EOCT test scores were low. The school only passed 4 out of 10 EOCT with a 54.72% or higher. The females outperformed the males by passing 6 out of 10 EOCT. Both Asian and African-American students had the highest scores on three of the test.

The research study showed that in order for teachers to increase EOCT scores by using technology their must not be a lack of technology in the school and classrooms. The amount of technology available impacted both the teacher's and student's performance. The results from the interviews, surveys and overall EOCT scores have shown that technology has not had an impact on the EOCT at this urban high school.
AN INVESTIGATION OF THE RELATIONSHIP OF SELECTED END-OF-COURSE
TEST SCORES AND SELECTED PERCEPTIONS OF TEACHERS
ON THE USE OF TECHNOLOGY IN AN URBAN
HIGH SCHOOL CLUSTER

A DISSERTATION
SUBMITTED TO THE FACULTY OF CLARK ATLANTA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF EDUCATION

BY

TERANCE LARNARD SHIPMAN

DEPARTMENT OF EDUCATIONAL LEADERSHIP

ATLANTA, GEORGIA

MAY 2013
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I give thanks to God and his son Jesus Christ. You saved me and have brought me to this point in my life. You will take me to the next level in my life. Saying Thank You does not seem to be enough. I thank Dr. Trevor Turner for being a great person and professor. To my committee member, Dr. Rebecca Dashiell–Mitchell, Dr. Moses Norman, and to Dr. Noran Moffett, you are truly one of the best people I know. Mrs. Betty Jo Cook, thank you for always making sure I was moving forward, but most of all showing that you care. To my mother who has never given up on me—you have shown me how to be a man, a parent and most of all, a good human being. To my father, Tiny L. Laster, Jr., I thank you for the opportunities you have given me. To my sister Zina, who showed me by example how to excel in life, your belief in God has strengthened mine. To Jerontai, Teryn, Zaire, and Khalil, I love you. To Yolanda B. Williams and Melanie Frizzell, there is no way I could have made it through this without you. To Tashika Law, you have been a true angel. To the school that will remain with me forever, I give thanks. To Calvin, Yolanda, Mrs. Linda, George, Sonja, Oakhurst and other friends who never stopped believing in me, thanks. Finally, to all the students I have taught (Team Shipman), this is also for you. Thank you all and continue to Find Out How GREAT You Can Be!
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CHAPTER I
INTRODUCTION

Statement of the Problem

On January 8, 2002, President George W. Bush signed into law the No Child Left behind (NCLB) Act of 2001. The focus of school districts across the country had been based on principles of the NCLB Act, closing the achievement gap, stronger accountability, implementing proven methods, and measuring students' progress through assessments (U.S. Department of Education, 2004). The inception of NCLB not only focused on closing the achievement gap between minorities, subgroups, and non minorities in reading and math it utilized standardized testing as the system of measurement by which the closing of the gap would be assessed.

In 2011, President Barack Obama announced NCLB waiver initiatives to provide states more flexibility with accountability requirements in exchange for reforms allowed to the states included the waiver of vital Elementary and Secondary Act (ESEA) requirements. Under the agreement, states no longer had to set targets requiring all students to be proficient on state tests by 2013-2014. The State of Georgia was among the first of 10 states to be given a waiver (McNeil, 2012).

According to Georgia Department of Education (2012), students that entered high school prior to July 2011 who sought to obtain a Georgia High School diploma must pass the Georgia High School Graduation Tests (GHSGT) in four content areas (mathematics,
English/language arts, social studies, and science) as well as the Georgia High Writing Test.

As a result of amendments to State Board of Education rule in April 2011, the cohort of students who enrolled in high school from Fall 2008 through Summer 2011 must demonstrate their proficiency in the four GHSGT content areas by either passing each of the GHSGTs or by passing one of the equivalent End-of-Course Tests (EOCT) in each corresponding content area. These students are also required to take and pass the Georgia High School Writing Test (GHSWT) to be eligible for a diploma (Georgia Department of Education, 2012). School administrators across the state of Georgia are looking for various methods to increase student scores on the EOCT. The EOCT scores are weighing more heavily each year as the GHSGT has begun to phase out.

The End-of-Course Test, which became effective in 2004-2005 (Georgia Department of Education, 2012), requires students to take cumulative exams in the eight areas: Ninth Grade Literature and Composition, American Literature and Composition, Algebra I, Geometry, Biology, Physical Science, Economics and United States History. These exams, which are designed to test students’ proficiencies in these individual subject areas are required and count for 20% of their final grades in the corresponding courses (Georgia Department of Education, 2012). The EOCT also provide data to evaluate the effectiveness of classroom instruction at the school, system and state levels. In 2011–2012, the EOCT became Georgia’s high school accountability assessment as part of the College and Career Readiness Performance Index (CCRPI).
Students entering school today have more exposure to technology than ever before. Our world has become technological driven, with students having the availability to be able to operate iPods, digital video disc (DVD) players, video game systems and computers before they enter kindergarten. The use of technology in education has grown considerably since 2000 (Niess, 2005). The schools curricula have changed to adapt to the use of technology by teachers and students. Children entering kindergarten may not know how to read a book, but they are ready to begin formal reading lessons. They may have started to develop knowledge of the alphabet, and a few children discovered the connections between letters and their sounds (Barone, 2002). Teachers have learned to use technology tools to help educate their students. In today’s classrooms teachers are using computers, smartboards, IPads and IPods just to name a few of the many technical tools at their disposal. These tools have been used to advance the learning of students on all levels and in all subject matters. Teachers are expected by the district and principals to use technology in their daily lesson plans (Segers & Verhoeven, 2002). According to Fails (1998), technology has helped professional educators realize their dream of using a multimedia approach to learning to enhance students’ ability to retain and expand on what they have studied. The use of 16mm films, slide projectors, overhead projectors represented pioneering efforts in this direction; today computerized instruction, videotapes, DVD and the Internet are available for classroom use.

Technology usage, specifically computers, has been shown to not only have a positive impact on the instructional process and student achievement but, is in fact, changing how the instruction program is delivered to students (Schoeller, 2004).
Therefore, technology can support the many current dimensions of learning that have proven to provide a positive impact on student achievement. Marzano (2000) indicated that students need to be provided opportunities for practice in order to master concepts. Technology can provide students with the practice needed to use their knowledge in meaningful ways (Maninger, 2007). Technology has the ability to offer real time communication, hands on learning, multimedia presentation, and an infinite amount of information (Schoeller, 2004). “Technology moves a student further from the Industrial Age and closer to the lifelong learners of the Digital Age” (McDonough, 2000, p. 3).

Papert (1993) believes computers should be integrated into the curriculum for greatest impact. Lackney (2001) stated, “If we are going to move to the Digital Age, we are going to need to look at the way we are designing our classrooms so that we can incorporate student-centered, technologically integrated learning environments into our schools” (p. 7).

Schoeller (2004) states that technology usage has been shown to not only have a positive impact on the instructional process and student achievement, but is in fact, changing the way instruction is delivered to students. Kulik (2003) states teachers begin to change their teaching styles to adjust to the growing need to integrate technology into the classroom. Papert (1993) suggests that technology should be integrated into the curriculum for the greatest impact. Schoeller (2004) explains that technology and curriculum must be integrated in an educational climate in which digital learning exists.
Purpose of the Study

The purpose of this study was to determine if teachers' use of instructional technology and other factors would influence EOCT scores. The EOCT scores were analyzed in terms of, gender, ethnicity, teacher experience, teacher qualifications, and instructional practices. Establishing a relationship between the independent variables and performance levels on the EOCT scores may allow schools leaders to develop possible intervention strategies for high school students. Performance levels on the EOCT were categorized as exceeds, meets, and does not meet Georgia proficiency levels.

Research Questions

The researcher proposed the following overarching research questions for empirical measurement:

RQ1: Does a teacher's sense of efficacy in the use of technology improve students' test scores on EOCT?

RQ2: Is there a relationship between EOCT scores and teachers' use of instructional technology?

RQ3: Is there a statistically significant difference between student achievement scores on the EOCT based on gender?

RQ4: Is there a statistically significant difference between student achievement scores on the EOCT based on Ethnicity?

RQ5: Is there a statistically significant difference between student achievement scores on the EOCT based on teacher experience?
RQ6: Is there a statistically significant difference between student achievement scores on the EOCT based on teacher qualifications?

RQ7: Is there a statistically significant relationship between student achievement scores on the EOCT based on instructional practices?

**Significance of the Study**

The study sought to extend knowledge on the EOCT and attempted to give middle and high school administrators, assistance with planning, scheduling and staffing of EOCT courses. Middle school students can take EOCT courses. Middle school students completing an EOCT course must take the EOCT regardless of whether they are receiving high school credit. Students enrolling from non-accredited programs are required to take and pass the EOCT prior to receiving credit for the course. This research explored how integrating instructional technology expands student learning and helps teachers to prepare students to successfully pass the EOCT course.

Data from this study may serve as a foundation for further research on EOCT. Test score data from this study may be used to identify teachers with high student achievement scores in order to create follow-up studies which might identify effective instructional methods and practices corresponding to increased student achievement. It can also seek to see if technology improves high school students’ preparedness for post-secondary studies.

**Summary**

In this chapter, the researcher provided a detailed account of the statement of the problem, if there is relationship of teacher’s use of technology and other factors on the
End-of-Course Test. The researcher gives the purpose of the study offered the researcher questions that guided the study, and discussed the significance of the research.
CHAPTER II
REVIEW OF THE LITERATURE

Since 1983, the Georgia State Board of Education and the Georgia Assembly have implemented testing requirements as prerequisites to earning a high school diploma. Prior to 1983, no exit exam was required to establish minimum competency. The Basic Skills Test (BST) was the first method of establishing minimum competency through assessment and remained the method of choice until 1994. The BST required students to attain a minimum passing score in order to earn a high school diploma. The BST consisted of language arts, mathematics and writing. In 1991, Georgia High School Graduation Test (GHSGT) replaced the BST for students who entered the ninth grade. The GHSGT contained five tests in the areas of language arts, mathematics, writing, social studies and science (Georgia Code § 20-2-282; State Board Rule (SBR) 160-4-2.30, Georgia Governor’s Office of Student Achievement, 2004).

Testing

The State of Georgia’s standardized testing, is a direct result of the A+ Education Reform Act of 2000. The purpose of these assessments was to make sure that all of the students in Georgia have access to an academically rigorous curriculum and to give educators information that will improve student achievement by offering effective instruction of Georgia performance Standards (Georgia Department of Education, 2012).
The State of Georgia, in terms of validity and reliability of these tests, employs a test development process that follows national professional standards. The first step of the process is to determine the purpose of the test. The Department of Education finds a reputable test development company to facilitate test development after the purpose of the test is established. A selection committee consisting of Georgia educators is formed to work with the test development facilitators to decide how concepts and skills will be assessed and to develop a test blueprint. The content domain specification are developed to specify how curriculum elements are categorized to establish test written by Georgia educators and then the test items are submitted to the review committees for approval. The test items, following approval, are field tested by embedding them into operational test, which are then given to a group students. These items are then received by another review committee to determine how the students performed on the field test items. Once the items are accepted by the committee, they are placed in a test bank from which test items for the actual tests are obtained. The End-of-Course Tests are written by using this process.

**End-of-Course Test (EOCT)**

According to the Georgia Department of Education (2012), the purpose of the EOCT is to give educators useful diagnostic information to help them identify strengths and weakness in the areas of mathematics, social studies, science and language arts. The identification of strengths and weaknesses may help to improve student performance in high school courses. The EOCTs are aligned with Georgia Performance Standards (GPS) and are composed of test items that assess specific content knowledge and skills. The
EOCTs also provide data to evaluate the effectiveness of classroom instruction at the school and system levels.

The Georgia Department of Education requires that the EOCT should be administered when students complete courses in the following areas: mathematics, social studies, science, and language arts. Mathematics End-of-Course Tests include test for Mathematics I, Mathematics II, GPS Algebra, and GPS Geometry. Social Studies End-of-Course Tests are separated into the United States History EOCT and the Economics/Business/Free Enterprise EOCT. Language Arts End-of-Course Tests are divided into the Ninth Grade Literature EOCT and the American Literature and Composition EOCT. The Science End-of-Course Tests consist of Physical Science EOCT and Biology EOCT.

At the beginning of the 2004–2005 school year, a student’s EOCT score was averaged in as 15% of the final course grade. The student must have final course grade of 70 or above to pass the course and earn credit toward graduation. Upon failure of a class that requires taking the EOCT, the student must repeat the course and retake the EOCT to earn credit for graduation.

In addition to the test given at the end of each semester, the EOCTs are given in the winter, spring, and summer and they are administered in an on-line format in the middle of each of the following months: August, September, October, November, February and March. The EOCTs can be taken in a paper-pencil or an on-line format. Paper and pencil assessments can only be taken during the main administrations at the end of each semester. Online assessments are available for all administrations. Each test is administered in two 60 minute sections.
According to the Georgia Department of Education, the number of test items that students get correct is converted to a scale score. This enables standardization of score reporting of all sections of the EOCT. For example, the Biology EOCT scores are reported on a scale of 200 to 650. Students who do not meet the Biology EOCT standard have scores ranging from 400 to 499 conversely; students who exceed the EOCT standard have scores ranging from 450 to 650.

**Gender**

Gender has been the focus of many national studies which dealt with math and science skills of high school students. For example, Harris-Britt, Valrie, and Kurtz-Costes (2008) found a small number of gender differences in math and science abilities of students over the last thirty years have been identified. The researchers also asserted that as males entering late adolescence and young adulthood were more likely to take higher level math courses and pursue careers in engineering, computer science, and physical sciences.

Ding, Murray, and Stuart (2006) conducted a study to determine whether or not gender differences were evident in student performance in mathematics. Findings revealed that “females did not show statistically low math test scores, and that the growth rate over time remained the same for both males and females” (p. 8). The authors speculated that the educational environment played a part in the gender difference because the same growth rate existed in boys and girls in mathematics from 3rd grade to 12th grade. The authors suggested that expectations were important factors in student
achievement. Additionally, when girls were expected to perform as well as boys, the researchers found that girls performed just as well.

Bailey and Whitmire (2010) reinforced the notion of a gender gap that existed in the area of academic achievement. The authors stated that boys have always lagged behind girls in terms of literacy. Despite this difference, girls were making strides in the areas of math and science by outperforming boys on assessments in these areas. The authors further explained that this gap in achievement was seen in boys and girls as individuals rather than as a group. Bailey and Whitmire asserted that the best way to bridge this achievement gap was to create a school culture in which high academic achievement was a goal for all students.

Ethnicity

Jeremy D. Visone (2009) researched on how ethnicity and student achievement are related to standardize testing in science. Visone study described reading and its relation to science achievement. This study was done in three Connecticut high schools that where 90/90/90 schools. 90/90/90 schools are schools which have greater than 90% meeting high academic standards on test achievement, 90% of students that receive free and reduced lunch, and 90% of students that are ethnic minorities. Visone stated, “These schools made deliberate decisions to trade content area time for reading comprehension and nonfiction writing instruction” (p. 50). The results of the study showed an increase in student achievement on all standardized test scores in all student groups. The conclusion was that achievement was not based on ethnicity but was, rather, a result of effort.
Gallant and Moore (2008) conducted a study that involved the achievement gap between white and African-American students. The study consists of first grade students and Caucasian students on the language and literacy portion of a curriculum-embedded assessment. Findings of the study revealed that, compared to white students, African-American students received lower performance ratings on assessments. The researchers attributed this gap to changes in socioeconomics, family conditions, youth culture, and school conditions.

Teachers have identified students whose native language was not English identified reading as their primary issue as it relates to learning. These students, who are Limited English Proficient (LEP), are still expected to do well in their academic courses and pass standardized tests. These tests are typically administered in English rather than in the students’ first languages. Curtin (2005) expanded on the idea of the improvement of academic achievement among English as Second Language (ESL) students. She stated that ESL students benefited greatly from instruction that involved ESL teachers who employed an interactive teaching style which provide cooperative learning opportunities for students.

**Instructional Practices**

Horenstein and Seabert (2002) noted that examining instructional practices as a central element in teacher development would help students achieve more and standards would rise. Teachers are being asked to teach more to students who are presenting with an ever widening range of skills. To meet these challenge teachers must develop instructional practices that produce effective instruction in classrooms. Palardy and
Rumberger (2008) examined how instructional practices are conceptualized as having the most proximal association with student learning. That is, instructional practices are theorized to influence student learning directly, whereas teacher background qualifications and teacher attitudes are theorized to influence learning indirectly through their association with instructional practices.

School systems across the country are developing professional development programs for teachers to continue to increase their instructional practice skills. The school systems have passed it down to the principals. Their roles as instructional leaders are to influence others to pair appropriate instructional practices with their best knowledge of the subject matter (Quinn, 2002). With principals performing at high levels, this will have teachers using highly effective instructional practice that will produce high student achievement levels (Quinn, 2002).

**Teacher Qualifications**

The Georgia Professional Standards Commission (2012) requires that all teachers at least have a bachelor’s degree before deciding to become a teacher. To qualify for a teaching certification in the State of Georgia, there are four routes a person can take. Each route is designed to combine high standards with flexibility to bring quality teachers into the classroom.

The traditional route is when a Georgia certificate is obtained by completing a state-approved educator preparation program, usually at a college or university. The alternative routes occur when a person is obtaining a Georgia certificate while working as an educator. This is design for people who hold degrees and have various life
experiences, as well as former educators with expired or invalid certificate who wish to return to the classroom. Initial eligibility requirements lead to a Nonrenewable Certificate and remaining requirements are completed while the individual is serving as an educator in a Georgia public school. Upon completion of this route, the Clear Renewable Certificate is issued. In the International Exchange Teacher Route a person can obtain a Georgia certificate based on their teacher certification in another country. The final route is the Permit Route. A teacher can obtain a Georgia permit to teach in special restricted circumstances. A permit allows performing artists, retired teachers and native foreign language speakers to teach in Georgia classrooms and selected business/professional leaders to serve in superintendent positions based on their rich expertise. While each route has a unique set of eligibility requirements and different ways to achieve certification, the standards and requirements for the Clear Renewable Certificate are the same regardless of the route chosen.

Teachers’ Sense of Efficacy

Bandura (1997) defined perceived self-efficacy as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p. 3). Self-efficacy is a future-oriented belief about the level of competence a person expects he or she will display in a given situation. Self-efficacy beliefs influence thought patterns and emotions that enable actions in which people expand substantial effort in pursuit of goals, persist in the face of adversity, rebound from temporary setbacks, and exercise some control over events that affect their lives (Bandura, 1997).
Bandura (1986, 1997) postulated four sources of efficacy expectations: mastery experiences, physiological and emotional states, vicarious experiences, and social persuasion. Mastery experiences are the most powerful source of efficacy information. The perception that a performance has been successful raises efficacy beliefs, which contributes to the expectation that performance will be proficient in the future. Vicarious experiences are those in which the skill in question is modeled by someone else. The degree to which the observer identifies with the model moderates the effect on the observer’s self-efficacy (Bandura, 1997). The more closely the observer identifies with the model, the stronger will be the impact on efficacy. Social persuasion may entail a pep talk or specific performance feedback from a supervisor or a colleague, or it may involve the general chatter in the teachers’ lounge or in the media about the ability of teachers to influence students (Tschannen-Moran, Hoy, & Hoy, 1998). Although social persuasion alone may be limited in its power to create enduring increases in self-efficacy, it can contribute to successful performances to the extent that a persuasive boost in self-efficacy leads a person to initiate a task, attempt new strategies, or try hard enough to succeed (Bandura, 1982).

A teacher with high self-efficacy tends to provide the most beneficial learning environment for his or her students (Yost, 2002). Teachers with high self-efficacy are more likely to try innovative practices (Sparks, 1988). The development of an educator’s sense of teaching efficacy pays huge dividends for schools and both novice and veteran teachers (Yost, 2002). Such reciprocal learning opportunities move schools forward in their efforts to put an excellent teacher in every classroom. Yost states that educational
leaders must try harder to understand and facilitate the power and importance of a teacher believing in themselves.

Technology in Schools

A longitudinal study examining the role that technology plays in home reading and math achievement for kindergarten and first graders shows that students’ access to the use of technology influences their future academic achievement in school (Espinosa, Laffey, Whittaker, & Sheng, 2006). Additionally, research indicates that computers encourage children’s development of positive attitudes toward learning and helps children advance their spoken communication (Cardelle-Elawar & Wetzel, 1995).

In the 20th century there were several waves of massive investments in technology to improve education, but none had a lasting impact (Zhao & Frank, 2003). Research on the role of computer technology in the classroom is still needed to determine not only current practice, but also the best practices to integrate technology into the curriculum (Crouse, 2011). It is believed that many teachers have been slow to use computers or new technology out of fear. This slow adoption of technology by teachers had not allowed the full potential that could lead to qualitatively different teaching and learning experiences (Zhao & Frank, 2003). Teachers who received training are better prepared to integrate technology into their classrooms and are more likely to use them as learning tools for their students (Fatermi, 1999). Technology may improve learning if used correctly by teachers and students. Teachers’ styles of teaching and their willingness to integrate technology into their lessons play a major role in the use of technology in schools (Fatermi, 1999). A teachers’ role in the classroom has the
possibility of affecting how students will use technology and learn through the use of such technology (Bismarck, 2009).

**Technology and Student Achievement**

Townsend (2012) cited with the expanding presence of technology in education, it is important to understand the relationship between the use of technology and measures of student outcomes, namely student achievement. Irving (2006) cited low-stakes diagnostic computer based tests offer possibilities for improving student performance without many of the issues related to their high-stakes counterparts. Some educators believe that success on low-stakes tests portends improved performance on high-stakes tests. The manner in which technology is used in instruction has been found to be related to student achievement (Wenglinsky, 1998). Wenglinsky's study of the 1996 NAEP dataset, for example, revealed that students whose teachers use technology to teach higher-order thinking skills had higher achievement in mathematics.

The Kulik meta-analysis study of 1994 provided several conclusions concerning computer technology, student reading achievement, and students' attitudes towards school, family, peers, and society in general. The results indicated that computer use was associated with an increase of average student’s overall academic percentile from 50% to 64% (Schacter & Fagnano, 1999). Along with this increase in academic percentile, results revealed that less time was necessary for instruction when training utilized computer technology. Finally, results indicated that students liked their class more and developed attitudes that are more positive when technology was part of the instruction (Schacter & Fagnano, 1999).
Sivin-Kachla (1998) reviewed research on the impact of a technology rich classroom, across all content areas, and every age with regard to student’s achievement and attitudes towards learning and self-esteem from 1990-1997. The researchers concluded that students exposed to technology performed better in their major classes, such as math and science. Low ability students who displayed a poor perception of themselves from a survey given prior to the study had a tendency to have better self-concepts. This finding was true in all age groups, including special needs students.

Researchers studying teachers who incorporate technology in a student-centered learning atmosphere revealed that students displayed increased eagerness, enthusiasm, and self-worth (Faison, 1996; Rice, Wilson, & Bagley, 2001; Mckeachie & Svinicki, 2006). According to Faison (1996), there was an increase in student collaboration in terms of shared responsibility and interdisciplinary study after the infusion of technology into the students’ learning environment. Students, in general, were also more receptive to exploring and risk-taking when problem solving (Mckeachie & Svinicki, 2006).

Maninger (2007) gave credence to the idea that technology is beneficial for at-risk students. Maninger found that embedding at-risk or struggling students who in technology rich environments, such as those providing computers, internet, and multimedia settings, improved reading scores and grades.

Researchers studying teachers who incorporate technology in a student-centered learning atmosphere revealed that students displayed increased eagerness, enthusiasm, and self-worth (Faison, 1996; Rice, Wilson, & Bagley, 2001; Mckeachie & Svinicki, 2006). According to Faison (1996), there was an increase in student collaboration in
terms of shared responsibility and interdisciplinary study after the infusion of technology into the students’ learning environment. Students, in general, were also more receptive to exploring and risk-taking when problem solving (McKeachie & Svinicki, 2006).

Maninger (2007), studying English-1 high school students, found that at-risk or struggling students who were embedded in technology rich environments, such as those providing computers, internet, and a multimedia setting, had improved reading scores and grades. The CEO Forum (2001) listed two initiatives that indicated the positive effects of educational technology implementation on student achievement. In West Virginia, statewide implementation of technology led to an increase on test scores in all basic skills areas; specifically, that eleven percent of the gain in test scores was shown to correlate directly with a Basic Skills/Computer Education technology implementation 10 years earlier. In New Jersey, students who were placed in an integrated technology curriculum program scored 54 points higher in verbal and 34 points higher in math on the SAT-1 than students not participating in the program. The Forum concluded, Education technology can help improve student achievement and technology can help the nation’s schools deliver a world class education that will improve student achievement and develop 21st century skills. Supporters of the use of educational technology cite these studies as evidence that technology can play an important role in improving student’s achievement.

Kulik (2003) used measures of effect size in his summary of eight meta-analysis studies. The meta-analysis was based on a total of 396 studies. Of the 396 studies, 335 studies were published before 1990 and 61 controlled studies were published after 1990.
The researcher reviewed 27 controlled studies on instructional technology and reading that included three major technology applications: (a) integrated learning systems (ILSs), (b) writing-based reading programs, and (c) reading management programs. Kulik found that ILSs did not affect reading improvement. For writing-based programs, he found that early studies showed no effect on reading improvement, while more recent studies showed a positive effect. Based on these recent studies, Kulik suggested that overall, writing-based programs had a positive effect on reading improvement. For reading management programs Kulik reported that there were too few controlled studies and no firm conclusions could be reached. Kulik completed that educational technology implementation did have an affirmative impact on student achievement by and large. He noted that ILSs were not typically totally implemented and the partial implementation is what led to varied results shown in studies. He implicated that computers can be important tools for writing and that computer simulations should be selected with care. He suggested that instructional technology use was on the increase in elementary and secondary school applications.

Taylor, Castro, and Walls (2004) reported on a West Virginia grant program. In this study, two groups of students were given a pre-test on sixteen different lessons. One group was then taught the lessons with technology and another group was taught without technology. The research design was a 2 x 2 mixed-model analysis of variance with the dependent variables being student achievement as measured by class average scores on the pretest and the class average scores on the posttest for 16 lessons. Subjects included six classes of 20 or 22 students. The analysis of variance for treatment showed a
significant main effect (F (1, 15) = 51.0, p .01). The group taught without technology and the group taught with technology showed significant gains from the pretest to the posttest (Tukey tests, p<.01). The group taught with technology, however, scored significantly higher than the group taught without technology (Tukey tests, p<.01).

Plowden (2003) investigated the relationship between computer technology use by schools and student achievement in mathematics and reading using Iowa Test of Basic Skills (ITBS). Student scores from two computer technology schools and two non-computer technology schools were compared over the period from 1994 to 2000. In 1994, the non-technology schools had higher reading and mathematics scores for both elementary and secondary students. By 2000, students in computer technology schools had more significant gains in reading and mathematics and their scores had surpassed the scores of the students in the non-technology schools (p<.01). Plowden reported that these results indicated a positive relationship between student achievement and the use of computer technology.

Summary

There are many different types of students who are in many different types of educational situations. There has to be continuous ongoing efforts to try to improve student performance based on results of these assessments. The use of past and current research about academic performance of different types of students will open the future research and developments of new strategies that could improve overall student achievement.
The body of work reviewed indicated that technology in schools is growing more and more each year. Schools districts across the nation are probing into new ways to use technology in innovative ways to teach, organize and focus instruction and resources to take education to a higher level of achievement. The impact that it has had on instruction in the classroom has been positive. Technology has been integrated into the curriculum and has become part of the everyday pedagogy of teachers.

Schools across the nation are searching for ways to use technology in innovative ways to teach, organize and focus instruction and resources to take full advantage of gains in society driven for student's accountability. Students in technology-enriched classrooms appear to score higher on standardized tests, to take control of their own learning environment, to work well in cooperative groups to accomplish a common task, and to place worth in their ability to be productive students (Page, 2002).
CHAPTER III
THEORETICAL FRAMEWORK

Theory of Variables

Quantitative
After reviewing the literature some of the themes that emerged as related to factors that determine if teachers use of technology influence EOCT scores, include, but are not limited to, gender and ethnicity,

Qualitative
A selected group of teachers from high school were interviewed about the use of technology in their classrooms. The interview provided data for the qualitative analysis on their perceptions of using technology and on the teachers' integration of technology into the teaching of EOCT courses.

Definition of Variables and Other Terms

Independent Variables: Quantitative

Teachers' use of Technology: Technology will be used by teachers to help transmit the content being taught. The teachers will integrate technology into the lessons being taught. Teachers in high school use different types of technology. Teachers are expected to use laptops, and desktop computers. There are many classrooms today that are equipped with IPods, IPads, smart boards, CD/DVD payers, and burners. Teachers
have begun to integrate instructional technology into their lessons WebCt, internet searches, video streaming, presentation software and spreadsheets.

**Teacher Experience:** The number of years and work experience, professional development a teacher affirms in a classroom.

**Teacher Qualifications:** Teachers must have at least a bachelor’s degree. They must have a valid state certification. Teachers are also expected to demonstrate content expertise in the core academic subject they teach.

**Instructional Practices:** Pedagogy and methods teachers use to instruct students.

**Teachers’ Sense of Efficacy:** A scholarly activity by which one crafts one’s beliefs about their capability to achieve a certain level of success.

**Gender:** Male and female

**Ethnicity:** Caucasian, African American, Hispanic, Asian, and Asian Indian

**Dependent Variables**

End-of-Course Test (EOCT) scores in:

**Mathematics I:** Algebra/Geometry/Statistics—A course designed to provide students with a rigorous program of study in mathematics. It includes radical, polynomial and rational expressions, basic functions and their graphs, simple equations, fundamentals of proof, properties of polygons, coordinate geometry, sample statistics, and curve fitting.

**Mathematics II:** Geometry/Algebra II/ Statistics—A course in a sequence of courses designed to provide students with a rigorous program of study in mathematics. It
includes complex numbers; quadratic, piece wise, and exponential functions; right triangles, and right triangular trigonometry; properties of circles; and statistical inference.

**GPS Algebra:** A course designed to provide students with a rigorous program of study in mathematics. It includes radical, polynomial and rational expressions, basic functions and their graphs, simple equations, complex numbers, quadratic and piece wise functions, sample statistics and curve fitting.

**GPS Geometry:** A course designed to provide students with rigorous program of study in mathematics. It includes fundamentals of proof, properties of polygons, coordinate geometry, right triangles, and right triangular trigonometry; properties of circles; statistical inference and exponential functions.

**United States History:** The course provides students with a comprehensive, intensive study of major events and themes in United States history. Beginning with early European colonization, the course examines major events and themes throughout United States history.

**Economics/Business/Free Enterprise:** A course that focuses on the American economic system, covering fundamental economic concepts, comparative economic systems, microeconomics, macroeconomics, and international economic independence. It stresses the student's ability to analyze critically and to make decisions concerning public issues.

**Ninth Grade Literature and Composition:** These two theme–related, literature-based, integrated courses, providing students an opportunity to read extensively while strengthening skills in composition through literacy study.
**American Literature and Composition:** A study of the major literary topics and themes across the history of the United States from pre-colonial times to present day.

**Physical Science:** This course is designed as a survey course of chemistry and physics. It includes the more abstract concepts such as the conceptualization of the principle, and wave behavior.

**Biology:** This course includes abstract concepts such as the interdependence of organisms, the relationship of matter, energy, and organization in living systems, the behavior of organisms, and biological evolution.

Figure 1 shows the relationship among the variables.

**Scores and Reports**

Systems received a full set of reports for each administration. These reports included:

- Class Roster Reports (electronic only) with a 5-day turnaround (Rapid Scoring) – Give scale score, grade conversion score, performance level and domain level information for each student in a specific class

- Individual Student Reports (electronic or paper) - Include scale score and a grade conversion score. One copy should be filed in the student’s permanent record and one given to student/parent

- Summary Reports (system, school and class) – Generated by subject and present summary statistics for a particular group of students

- Content Area Summary Reports (system and school) – Provide information for school, system and state at the Domain Level
**Limitations of the Study**

Possible limitations to this study included the following: First, the number of teachers that taught the EOCT courses in the high school may not be teaching at these schools anymore. Secondly, the small sample sizes of the participants both teachers and students had an impact the study. The number of students in the urban school high school
that performed at or above the passing score may have attended other schools in the LEA or another high school setting. The proposed interview protocol does not suggest that all teachers at the high school can be identified nor will participate in the research; however, the generalization beyond group would not be reliable and valid indicators of success on EOCT or technology as a moderating variable that can empirically impact student achievement on the test.

Summary

This chapter disclosed the theory of Variables, Definition of Variables, Relationship among Variables, and the Limitations of the Study. The study examined whether there is a relationship to determine if teachers use of technology and other factors influence EOCT scores.
CHAPTER IV
METHODOLOGY

Research Design

A QUAN-QUAL Model was used in this research study. Gay, Mills, and Airasian (2009) stated that the QUAN-QUAL Model, also known as the explanatory mixed methods design, quantitative data are collected first and are more heavily weighted than qualitative data. In the first study or phase, the researcher formulated a hypothesis, collected quantitative data, and conducted data analysis. The findings of the quantitative study determined the type of data collected in a second study or phase that included qualitative data collection, analysis, and interpretation. The researcher then used the qualitative analysis and interpretation to help explain or elaborate on the quantitative results. The quantitative design for the research study focused on the theory of the variables cited in the literature related to the EOCT. As such, the participants from the high school that have taken the EOCT during the 2011–2012 school year were identified. The qualitative analysis and interpretation were interviews with the teachers, that helped explain or elaborate on the quantitative results.

Setting and Participants

The research study was conducted at a high school in an Urban School cluster. The school served sections of metropolitan area of a South Eastern United States city. The high school is located in a school district in an urban city in the southeastern part of
the United States. According to a descriptive report by the principal of the school, the school consisted of 1,847 students. The school served students from the 9th grade to the 12th grades. The school consisted of 79% African American, 16% Hispanic, 2% white, 2% Asian, and 1% Multiracial; 75% of the students were categorized as being eligible for free or reduced lunch. Additionally, 4% of the students within this school were considered to be English Language Learners. Ten percent of the students were classified as students with disabilities. There was a mobility rate of 46%.

The researcher used a purposefully selected sample for the specific needs of this study. The criteria for the selection were those students who attended the high school and who took the EOCT for 2011-2012 academic school year. The information was retrieved from the school’s permanent records database. This study included teachers from the high school who had taught the high school students identified for this research study.

Instrumentation

According to the Georgia Department of Education (2012), the purpose of the EOCT is to give educators useful diagnostic information to help them identify strengths and weakness in the areas of mathematics, social studies, science and language arts. The identification of strengths and weaknesses may help improve student performance in high school courses. The EOCTs are aligned with Georgia Performance Standards (GPS) and are composed of test items that assess specific content knowledge and skills. The EOCTs also provide data to evaluate the effectiveness of classroom instruction at the school and system levels.
The Georgia Department of Education requires that the EOCT should be administered when students complete courses in the following areas: mathematics, social studies, science, and language arts. Mathematics End-of-Course Tests include test for Mathematics I, Mathematics II, GPS Algebra, and GPS Geometry. Social Studies End-of-Course Tests are separated into the United States History EOCT and the Economics/Business/Free Enterprise EOCT. Language Arts End-of-Course Tests are divided into the Ninth Grade Literature EOCT and the American Literature and Composition EOCT. The Science End-of-Course Tests consist of Physical Science EOCT and Biology EOCT.

At the beginning of the 2004–2005 school year, a student’s EOCT score was averaged in as 15% of the final course grade. The student must have a final course grade of 70 or above to pass the course and earn credit toward graduation. Upon failure of a class that requires taking the EOCT, the student must repeat the course and retake the EOCT to earn credit for graduation.

In addition to the test given at the end of each semester, the EOCTs are given in the winter, spring, and summer and they are administered in an on-line format in the middle of each of the following months: August, September, October, November, February and March. The EOCTs can be taken in a paper-pencil or an on-line format. Paper and Pencil assessments can only be taken during the main administrations at the end of each semester. Online assessments are available for all administrations. Each test is administered in two 60-minute sections.
According to the Georgia Department of Education (2012), the number of test items that students get correct is converted to a scale score. This enables standardization of score reporting of all sections of the EOCT. For example, the Biology EOCT scores are reported on a scale of 200 to 650. Students who do not meet the Biology EOCT standard have scores ranging from 400 to 499 conversely; students who exceed the EOCT standard have scores ranging from 450 to 650.

The researcher surveyed teachers who are teaching EOCT. The researcher reviewed the data from the survey to determine which teachers taught at the school during the 2011-2012 school year. These teachers who were on the instructional staff from the high school who taught these students that took the EOCT in 2011-2012 were interviewed. The researcher wanted to see if technology was used to teach the EOCT courses, what experience the teachers have with technology and the instructional practices used. The data were collected by the researcher to determine if technology influenced student’s achievement on the EOCT.

The survey included such items but not limited to (a) How long teachers have been teaching, (b) what certification a teacher has, (c) how long a teacher has used technology, (d) how teachers feel about technology, and (e) what technology resource(s) teachers wish they had in their classroom? The qualitative analysis and interpretation with the teachers helped explain or elaborate on the quantitative results.

The researcher also included as instruments a review of the teacher’s lesson plans and also did classroom observations of the teachers interviewed. This allowed the researcher to better answer the researcher questions.
Procedures

The researcher investigated whether there is a relationship to determine if teachers' use of technology and other factors influence EOCT scores. The research looked at all the EOCT scores of urban school students from the 2011-2012 school year. Students take the EOCT after completing the EOCT course. The student must have final course grade of 70 or above to pass the course and earn credit toward graduation. The researcher collected the EOCT scores of the students and placed them on an Excel spreadsheet. Their scores were sorted and analyzed through percentages. Cross tabulation was used on some of the variables. The Statistical Package for the Social Sciences (SPSS) was employed as the instrument of data analysis. For the purpose of this study, the independent variables were gender, ethnicity, Mathematics I: Algebra/Geometry/Statistics, Mathematics II: Geometry/Algebra II/Statistics, GPS Algebra, GPS Geometry, United States History, Economics/Business/Free Enterprise, Ninth Grade Literature and Composition, American Literature and Composition, Physical Science, and Biology. Causal comparative research was used to determine what effect the independent variables have on student performance on each EOCT.

The method of using percentages of data analysis was used to determine relationships between the demographic groups of gender, ethnicity, and total population EOCT scores and their performance on the EOCT’s scores. Once the data were collected, the EOCT scores were separated into pass and fail. This method of data analysis is “a statistical procedure that is used with nominal data to test relationships
between the frequency of observations in categories of independent variables” (McMillan & Schumacher, 2006, p. 470).

The researcher interviewed and surveyed teachers from the urban high school who taught the students that took the EOCT during the 2011-2012 school year. The researcher wanted to see if technology was used when they taught EOCT courses. The data were collected by the researcher to determine if technology influenced student’s achievement on the EOCT.

**Analysis**

The test consisted of content areas language arts, mathematics, science and social studies. The researcher looked at each student score to determine who made a passing score or not. The researcher also looked at the scale score, grade conversion, performance level and domain level for each student.

**Limitations**

Limitations to this study included the following: First, the number of teachers that taught the students taking the EOCT at the high school was not teaching at this school anymore. Students that may have been in the high school have attended other schools in the Local education Agency (LEA) or another high school setting. The teachers who demonstrated successful preparation for other candidates before the participants who were purposefully selected for the research may not have been assigned to the courses identified as independent variables for the research. The small sample size of the subjects had a great impact on the study. The researcher acknowledges that
correlation is not causation nor can the use of the students from a single high school level predict statistically significant relationships beyond the population cited in the research.

The proposed interview protocol does not suggest that all teachers at the high school level can be identified nor will participate in the research; however, the generalization beyond group would not be reliable and valid indicators of success on the EOCT or technology as a moderating variable that can empirically impact student achievement on the test.

Summary

Within this chapter, the researcher provided a rationale and an overview of the research design. The quantitative and qualitative variables were presented and defined. The relationship among the independent and dependent variables in this study were explained. The researcher indicated the limitations of the study and how they can affect the outcomes.
CHAPTER V
DATA ANALYSIS

Introduction

This chapter presents the results of my investigation of the relationship of select End-of-Course Test scores and selected perceptions of teachers on the use of technology in an urban high school cluster. Seven research questions guided this research study. The purpose of these questions was to see if teachers use of instructional technology and other factors would influence EOCT scores. The data revealed if there was a relationship between the independent variables and performance levels on the EOCT scores.

With the increased number of computers in homes, students are exposed to computers from early childhood. Technology usage in the classroom has been shown to not only have a positive impact on the instructional process and student achievement, but is in fact changing the way we deliver instruction to our students (Schoeller, 2004). This led to the following central research questions for this study:

RQ1: Does a teacher's sense of efficacy in the use of technology improve students' test scores on EOCT?

RQ2: Is there a relationship between EOCT scores and teachers' use of instructional technology?
RQ3: Is there a statistically significant difference between student achievement scores on the EOCT based on gender?

RQ4: Is there a statistically significant difference between student achievement scores on the EOCT based on Ethnicity?

RQ5: Is there a statistically significant difference between student achievement scores on the EOCT based on teacher experience?

RQ6: Is there a statistically significant difference between student achievement scores on the EOCT based on teacher qualifications?

RQ7: Is there a statistically significant relationship between student achievement scores on the EOCT based on instructional practices?

**Characteristics of Sample**

The participants are representatives of teachers from a high school in an urban school cluster. The data from the student’s 2011-2012 academic school year EOCT were used for the study. Averaging the answers provided the following survey information about teachers from the sample: Of the 16 teachers, there were only 11 teachers with 15 or less years of teaching experiences; 5 teachers had 15 or more years of teaching experience; 12 of the teachers from the survey have been at the school at least 10 years. There were 4 teachers that have been there for 10 or more years. All of the teachers are certified to teach in their field of study. There were 5 mathematics, social studies, and science teachers. Only 1 of the teachers was an English Language Arts teacher.
Overview

There were 29 EOCT teachers at the urban high school. Of that number, for various reasons, 13 of the surveys were not returned. The first part of the survey was demographic and was tabulated by frequencies and percentages.

Methods of Data Gathering

Three methods of gathering data were used in this study: a survey, interview, and EOCT scores overall. By using triangulation in this study it allowed the researcher to use multiple data sources to address the research questions and validate the results. Triangulation defined by Patten (2009) is described as a qualitative cross-validation process that combines two or more data sources or data collection procedures.

Surveys. The first method of gathering data used for triangulation was a survey. The research created with the approval of his chairperson of the committee. The survey was printed out and given to the EOCT teachers at the urban high school. Part of the survey was based on a Likert scale. The teachers were asked to respond to how they rate themselves using technology and the professional development they receive on a seven-point scale. Each level of frequency was assigned as follows: 1 (not at all strong) to 7 (extremely strong) and 1 (never used) to 7 (very frequently used). A numeric value was assigned to each answer related to gender, teacher experience, years at the school, grade level they teach, teacher certification, and the End-of-Course class they teach.

- What is your gender?
- How long have you been teaching?
- How many years have you taught at this school?
• What grade(s) do you teach?
• What End-of-Course class do you teach?
• What is your teaching certification in?
• How would you rate yourself with using technology?
• How would you rate your students using technology?
• How would you rate the schools instructional technology resources?
• How frequently do you use instructional technology resources in your lessons?
• Do you have in-serves/professional development on instructional technology?
• Do you have the opportunity to exchange best practices about instructional technology?

**Interviews.** The second method of gathering data used was open-ended, semi-structured interviews, in which 13 teachers participated because they taught EOCT at the school during the 2011-2012 school year. The interviews were also used for triangulation. Interview questions used as a guide for all the interviews with the teachers were as follows:

• How long have you been teaching?
• What is your teaching certification in?
• Have you always taught high school?
• How many years have you taught at this school?
• What subject do you prefer to teach?
• What are your goals as a teacher?
• What are the school’s expectations of you as a teacher?
• How long have you used technology in your classroom?
• How often do you attend or get professional development in technology?
• Do you have support for using technology in the school?
• What are some of the ways you use technology in your classroom?
• How many computers do you have in your classroom?
• Do you have access to a Media Carts?
• Do you have access to a computer lab?
• How do you feel about using technology?
• What technology resource(s) would you like to have in your classroom?
• Are you able to integrate technology into the teaching of your EOCT course and if so how?

EOCT Scores. The third method of gathering data used was the analyzing of the EOCT scores. The researcher examined the overall EOCT scores of the urban high school for the 2011-2012 school year. The total student population that took the EOCT was 1,065. There were 338 ninth graders, 337 tenth graders, 331 eleventh graders, and 14 twelfth graders. The test scores reflected the percentage of students who passed and failed the EOCT. The researcher also looked at gender & Ethnicity in respect to the EOCT scores.

Patten (2009) defines qualitative research as researchers gather data that must be analyzed through the use of informed judgment to identify major and minor themes expressed by participants. To determine the validity of a study, the accuracy of
interpretations in a study can be established if the study measured what the study was supposed to measure (Creswell, 2007). To determine reliability, the data collected has to be consistent and dependable. The researcher based the collected data upon the experiences and beliefs of the teachers from one urban high school in metro Atlanta. The data obtained from these teachers deemed appropriate because these teachers were representative of the teachers throughout metro Atlanta.

The qualitative data were collected in a one week period. The researcher conducted the interviews in the classrooms, media center, and teacher workroom. The teachers were very forthcoming with their answers. There were 13 interviews with teachers. Their answers follow:

**How long have you been teaching?**

The teachers with the least experience had been teaching 3 and 4 years. One teacher had taught 8 years and another teacher taught 9 years. There were teachers who had been teaching for 11 and 13 years, two teachers had been teaching for 14 years, followed by teachers with 15 years, two with 17 years experience, 21 and 20 years in the teaching profession.

**What is your teaching certification in?**

Four teachers stated that their certification was in social studies. Two of the teachers’ certification was in English education. Four teachers had their certification in Mathematics. One teacher’s certification was in biology and she had a board field certification which allowed her to teach all science fields. There were two teachers that
had dual certifications. One teacher had social studies and health/physical education certifications. Another teacher had physical education and biology certifications.

**Have you always taught high school?**

Eleven teachers have always taught high school. One teacher had taught middle school for 11 years and another teacher had taught middle school for 2 years.

**How many years have you taught at this school?**

One teacher had only been at the school for 3 years. Two teachers had taught there for 5 years. One teacher had been there for 6 years. Two teachers had been teaching at the school for 7 years. Two other teachers had been at the school for 10 years. One teacher had taught there for 11 years, another for 12 and the teacher with the longest tenure at the school had been there for 14 years.

**What subject do you prefer to teach?**

Two teachers preferred teaching Economics. Two other teachers preferred teaching Biology. All the other teachers preferred to teach their subjects of government, Algebra, Math, Social Studies, Geometry, AP History, English, and World History.

**What are your goals as a teacher?**

- To help students become productive citizens. To know how government runs and become an active participant.
- I want to see success for all students.
- The short term goal is for 70% of the students to pass the EOCT. The long term goal is for me to become a master teacher and coach.
• Turn out students that can move on and go to college. Do all I can for the students.

• Help students become successful.

• To become a college professor. To have my students do their best.

• To have good EOCT scores. Help the students become responsible for their learning.

• To take students to the next level. Post secondary options make sure they are prepared for college.

• To improve the mathematical awareness of young students.

• To have high student achievement.

• To empower students in knowledge & comprehension to both succeed on the EOCT and in society.

• I want students to walk out the door much better than they walked in. I also want them to see the world scientifically.

• To help the next generation to be better that the one before it.

**What are your school’s expectations of you as a teacher?**

The answers are as follows:

• The school expects me to be a miracle worker.

• To provide instruction to the students and support the school’s mission statement.

• Make sure that I engage the students into the lessons. Have a positive relationship with the students. Also to collaborate with teammates.
• I have high expectations. Always keep you on your toes and looking at the research to learn more. To get students ready for the next level.

• To deliver a rigorous curriculum to the students. Make sure to meet the needs of the students.

• Teach the students the state standards and pass the EOCT.

• To have an effective classroom. Have the students engage and achieve the school wide goal of 100% passing rate on EOCT.

• To be an effective classroom teacher. To act professionally at all times. Improve myself professionally. Know the latest research and to publish.

• Politically speaking, to improve EOCT test scores.

• The school wants to know that I care about the students. That I know my subject area. They expect me to be fair in terms of grading and give lots of feedback.

• High expectations that I will be able to impact knowledge and content. To communicate well with both students and parents.

• To deliver rigorous content of biology in a manner that is interesting.

• To be a teacher leader.

**How long have you used technology in your classroom?**

• I have used technology the last ten years.

• I have been using technology for about 6 to 7 years in my classroom.

• 3 years.

• 13 years. Don’t have nearly the technology that I need for this class.
• I have always used some form of technology in my classroom.

• 10 years.

• 4 years in some form or fashion.

• I have used technology for about 14 years.

• 7 years.

• I have always used some form of technology in my classroom.

• I have always had technology in my classroom.

• 11 years

• 15 years

**How often do you attend or get professional development in technology?**

• We have professional development in technology about once or twice a year.

• I go maybe once a year.

• Only once.

• Maybe once or twice a year.

• 5 to 6 times a year.

• 2 to 3 times a year.

• Maybe twice a year.

• I attend about two in-service a year.

• Maybe once a year.

• I have had about 10 trainings in technology.

• About four times a year.
• Maybe twice a year.
• At least 3 times a year.

Do you have support for using technology?
• No, there is no support for using technology.
• There is not enough support.
• Yes, there are lots of demands for technology support.
• The school is doing all they can do. There is a lack of it at the school.
• I get some support.
• Just a little bit.
• Yes.
• Yes, we have a technology specialist on staff.
• Sometimes we can get support.
• Yes, media center and the technology specialist at the school.
• Yes, we have a technology specialist.
• Yes.
• Not really, I usually get outside resources to assist me with any tech problems.

What are some of the ways you use technology in your classroom?
• I use PowerPoint and eBeam.
• I use YouTube videos and PowerPoint.
• I use LCD projector, graphic calculators, PowerPoint, games and the Internet.
• LCD projectors, videos and PowerPoint.
• PowerPoint’s, calculators, laptops, software, scratchpads, Apps for Smartphone’s.

• PowerPoint’s, LCD Projectors and videos.

• USA Test prep, instructional notes and testing.

• I use LCD projector, internet, PowerPoint, and document camera.

• I use Plato instruction; GeoAlgebra, Laptops, YouTube and I have a classroom website.

• I use LCD projector, eBeam, quizzes online, PowerPoint & videos

• I use PowerPoint, an overhead projector & I integrated the use of computers in my lessons.

• I use technology for everything. I put the homework on-line. I use the computer cart and we watch videos on-line also.

• PowerPoint, Skype & Edmodo.

How many computers do you have in your classroom?

• There are no computers in my classroom.

• I have none.

• None.

• Zero.

• None, just my laptop.

• Zero.

• Zero.

• Zero.
- I have only my one laptop.
- Zero.
- Zero.
- I only have the teacher laptop in the classroom.
- Zero.
- None.

What instructional resources do you have in your classroom?

- I have textbooks and no maps
- I use text messages' & Internet. I also have additional staff development materials.
- Manipulatives, workbooks, books with games in them and textbooks
- Textbooks, teacher's editions and packages.
- Textbooks, workbooks, & calculators.
- Textbooks.
- eBeam, projector, textbooks, workbooks & calculators.
- I have textbooks, DBQ projector & AP US History resources.
- Textbooks & calculators.
- Textbooks, lesson plans and the achievement series.
- I have models, charts, hand-on models, specimen, chemicals, textbooks, teacher resource books, & lab equipment.
- I have a LCD projector & a television.
- Books, academic portfolio, cell phone & my personal computer.
Do you have access to Media Carts?

- Yes.
- No.
- Yes.
- Yes & no, someone has it all the time. Others use it when they can get on the list.
- Yes.
- No.
- Yes.
- Yes, but most of the time they are not functional.
- Yes.
- No.
- Yes, for the department. You have to sign up for it.
- Yes.
- Yes.

Do you have access to a computer lab?

- Yes.
- Yes.
- Yes.
- Yes.
- Yes.
- No.
• Yes, you have to sign up by appointment.

• Yes.

• Yes, have to search one out and sign up for it.

• Somewhat, but no.

• Yes.

• Yes, the media center, business department if a teacher has a break.

• Yes.

• Yes.

**How do you feel about using technology?**

• I have no problem with using technology. It enhances the lessons more.

• I feel fairly comfortable. It’s hard to keep up with the students because they’re more advanced than I am.

• I could improve if I knew what was more available in the school district.

• Love it. Try to be on the cutting edge. Technology will be the one thing that may level the playing field.

• I love it.

• Love it. Have to get caught up or use what the students are using so that I can meet the needs of the students.

• Technology is a great tool. Great for visual effects.

• I wouldn’t be an effective teacher if I didn’t use technology. All the best libraries are at your finger tips.
• I feel great about it. I want to do everything through technology, but we are limited here.

• Yes, when they do presentations.

• It's a good thing. When I can't do hands on things, it can be used as visualization for that lesson.

• I would not want to teach without it. Students are more visual learners than ever before.

• Very comfortable.

Do you allow your students to use technology?

• We have no computers in the classroom and many of the students don’t have computers at home. I try to infuse technology into the lesson and only have the students use it on major projects.

• Yes.

• Yes.

• Yes, on certain assignments. They may use their Smartphone’s and laptops.

• Yes.

• Yes, but it is limited.

• Yes.

• Yes, they can use cellular phones and at home USA Test Prep for the EOCT.

• Yes, but they are limited.

• Yes, when they do presentations.

• Yes, when they have projects and when we go to one of the computer labs.
• Yes, they use their cell phones and headphones.

• Yes.

**What technology resource(s) would you like to have in your classroom?**

• I would love to have smartboards, iPads and Kindles.

• I would love to have LCD projector, Smartboards and more computers.

• I wish I had a Smartboard, and had an understanding of the software that can be used for a Smartphone.

• TV channels so students can watch economics.

• Smartboards or something similar, view documents camera, LCD projector mounted.

• Computers.

• Portable media devices, smartboards, regular computers, and sound equipment.

• I would love to have a new LCD projector, easier whiteboards, devices so that students could respond electronically and iPads.

• LCD projector mounted, eBeam and computers in the classroom.

• I would like to have a mounted LCD projector and a laptop for the projector.

• I would love to have a set of computers for the classroom.

• I would love to have a Smartboard, LCD mounted projector, eBeam and built-in speakers.

• Interactive board, mimios, computers and projector
Are you able to integrate technology into the teaching of EOCT course and if so how?

- I take the students to the lab and use USA Test Prep. I usually do these three months before the test. I also have the students work on it after school and at home.

- Yes, American Literature website and history websites on the internet.

- I use USA Test Prep and quizzes to go along with the lessons.

- Yes, through assignments in class and USA Test Prep.

- Yes, I use technology for everything. Always use the calculators and PowerPoint.

- It's totally integrated. I have converted the textbook into PowerPoint.

- Yes, for mock test and visualization of shapes.

- The students use USA Test Prep three times a week. I give extra credit for those who come to tutorial on Thursdays.

- Yes, USA Test Prep and practice test questions.

- Yes, teaching subject matter. I also use USA Test Prep.

- Yes, I use PowerPoint and the document camera for test prep.

- I have integrated it holistically. I use EOCT release test from New York. I use web based software on the EOCT for review and practice.

- Yes, with the use of USA Test Prep and Study Island.
Qualitative Results

The research questions guided the qualitative analysis and findings. The majority of the teachers’ goals were to see their students succeed academically and be prepared for the EOCT. The teachers felt that the school expected the students’ needs to be met, the school’s mission to be carried out and the students to pass the EOCT.

Technology was used by all the teachers but many of them felt limited by what they had to use. They encouraged their students to use technology, but they were also limited in what they had. Those two sentences say pretty much the same thing. The only computers in the classroom were the teacher’s laptops. There were media carts and computer labs, but because of the high demand many teachers did not get a chance to use them. All of the teachers had instructional resources in their classrooms. There were only a few teachers that felt they did not have technology support.

An overwhelming number of teachers loved technology, but with the lack of training and resources they found it hard to grow. The teachers’ wish list consisted of smartboards, IPads, eBeams, and cell phone software. Many of the teachers used USA Test Prep to prepare for the EOCT.

Quantitative Analysis

Sixteen teachers completed the survey. The following are those answers.

1. Gender: 8 men and 8 women completed the survey.

2. How long have you been teaching?
Five teachers had less than 5 years of teaching experience. Two teachers had 5 to 10 years; four teachers had 10 to 15 years; three teachers had 15 to 20 years and two teachers had 20 to 25 years.

3. How many years have you taught at this school?

Eight teachers have been at the school less than 5 years. Four of the teachers had been there 5 to 10 years and four teachers had been there 10 to 15 years.

4. What grade(s) do you teach?

Three teachers taught 9th grade, four teachers taught 10th grade, three teachers taught 11th grade, one teacher taught 12th grade, and five teachers taught multi-grades.

5. What End-of-Course Class do you teach?

Three teachers taught more than one EOCT class. There were five social studies teachers, four math teachers and four science teachers.

6. What is your teaching certification in?

Five teachers had math certifications; there were four social studies teachers, five science teachers, one English teacher, and one teacher that is certified in another subject along with science.

7. How would you rate yourself with using technology? When asked to rate themselves, the teachers used a scale from 1 (Not at all strong) to 7 (Extremely strong).

Eight teachers rated themselves as a 5, five teachers as a 6, only two rated themselves a 7 and one teacher selected a 4.
8. How would you rate your students using technology? When asked to rate themselves, the teachers used a scale from 1 (Not at all strong) to 7 (Extremely Strong).

One teacher selected 2, 3 and 7. Two teachers rated a 4. Eight teachers rated a 5 and three teachers selected 6.

9. How would you rate your classroom instructional technology resources? When asked to rate themselves, the teachers used a scale from 1 (Not at all strong) to 7 (Extremely Strong).

Two teachers rated a 1 and a 2; four teachers rated 3 and 5. Three teachers rated a 4 and one teacher rated a six.

10. How would you rate the school's instructional technology resources? When asked to rate themselves, the teachers used a scale from 1 (Not at all strong) to 7 (Extremely Strong).

One teacher selected 1 and 6. Three teachers rated 2, two teachers rated 3; five teachers rated 4 and four teachers rated 5.

11. How frequently do you use instructional technology resources in your lessons? 1 (Never Used) to 7 (Very Frequently Used)

One teacher rated a 7. Two teachers rated 2 and three teachers rated 4. Five teachers selected 5 and five teachers rated 6.

12. Do you have in-service/professional development on instructional technology? 1 (Never Used) to 7 (Very Frequently Used).
Ratings 1 and 6 were selected by one teacher each. Two teachers rated 2, three teachers selected 3, four teachers rated 4 and five teachers chose 5.

13. Do you have the opportunity to exchange best practices about instructional technology? 1 (Never Used) to 7 (Very Frequently Used).

One teacher each selected 1, 2, 6, and 7. Three teachers chose 3 and 5 and six teachers rated 4.

**Quantitative Results**

Table 1 indicates cross tabulations of Teaching Experience and Self-Efficacy. It shows that less experienced teachers have higher self-efficiency in the use of technology.

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<tr>
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<th>Self-Efficacy</th>
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Count: 1 = 0-5 years of teaching experience  
2 = 5-10 years of teaching experience  
3 = 10-15 years of teaching experience  
4 = 15-20 years of teaching experience  
5 = 20-25 years of teaching experience

Self-Efficacy: 1 (Never Used) to 7 (Very Frequently Used)
Table 2 shows that teachers with less experience had their students use technology more.

Table 2

*Teacher Experience and Student Technology*

<table>
<thead>
<tr>
<th>Teacher Experience</th>
<th>Count</th>
<th>2</th>
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Count: 1 = 0-5 years of teaching experience  
2 = 5-10 years of teaching experience  
3 = 10-15 years of teaching experience  
4 = 15-20 years of teaching experience  
5 = 20-25 years of teaching experience

Student Technology: 1 (Never Used) to 7 (Very Frequently Used)

Table 3 indicates that when it comes to using technology for student use on the EOCT, science teachers used it the less.
Table 3

*End-of-Course Test (EOCT) and Student Technology*

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<td>8</td>
<td>3</td>
<td>1</td>
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</table>

Count: 1 = Math, 2 = Social Studies, 3 = Literature, 4 = Science

Student Technology: 1 (Never Used) to 7 (Very Frequently Used)

Table 4 shows that the more school technology resources are available, the more students used them.

Table 4

*School Technology Resources and Students' Use of Technology*

<table>
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<th>Students' Use of Technology</th>
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Table 4 (continued)

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Count: 1 = 0-5 years of teaching experience  
2 = 5-10 years of teaching experience  
3 = 10-15 years of teaching experience  
4 = 15-20 years of teaching experience  
5 = 20-25 years of teaching experience  
6 = 25+ years of teaching experience  

Students' Use of Technology: 1 (Never Used) to 7 (Very Frequently Used)

Table 5 displays that the more school technology resources were available the more teachers used them in their lessons.

Table 5

School Technology Resources and Use of Technology in Lessons

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Use of Technology in Lessons: 1 (Never Used) to 7 (Very Frequently Used)

Table 6 shows teachers with more Professional development in technology used technology more in their lessons.

Table 6

*Professional Development in Technology and Use of Technology in Lessons*

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<td>Use of Technology in Lessons: 1 (Never Used) to 7 (Very Frequently Used)</td>
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Table 7 shows the more professional development in technology, the higher the self-efficacy in teachers.

Table 7

*Professional Development in Technology and Self-Efficacy*

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<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
</tr>
</tbody>
</table>

Count: 1 = 0-5 years of teaching experience  
3 = 10-15 years of teaching experience  
5 = 20-25 years of teaching experience  
6 = 25+ years of teaching experience

Self-Efficacy: 1 (Never Used) to 7 (Very Frequently Used)

Table 8 shows that receiving professional development in technology increased the use of technology by students.

Table 8

*Professional Development in Technology and Students' Use of Technology*

<table>
<thead>
<tr>
<th>Students' Use of Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Professional Development in Technology</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

(continued)
Table 8 (continued)

<table>
<thead>
<tr>
<th>Professional Development in Technology</th>
<th>Count</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students’ Use of Technology</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Count:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 = 0-5 years of teaching experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 = 5-10 years of teaching experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 = 10-15 years of teaching experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 = 15-20 years of teaching experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 = 20-25 years of teaching experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 = 25+ years of teaching experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

Table 9 shows the EOCT results by total population of the school. American Literature had the highest passing percentage with 79.90%. Geometry had the highest failing rate of 100%. The total population that took the EOCT in 2011–2012 was 1,065. There were 338 ninth graders, 337 tenth graders, 331 eleventh graders, and 14 twelfth graders.

Table 9

EOCT Results by Total Population

<table>
<thead>
<tr>
<th>Subject</th>
<th>Pass %</th>
<th>Fail %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology-GPS</td>
<td>48.87%</td>
<td>51.13%</td>
</tr>
<tr>
<td>Ninth Grade Literature-GPS</td>
<td>76.09%</td>
<td>23.91%</td>
</tr>
<tr>
<td>Physical Science-GPS</td>
<td>40.00%</td>
<td>30.15%</td>
</tr>
<tr>
<td>Geometry-QCC</td>
<td>0.00%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>
Table 9 (continued)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Pass %</th>
<th>Fail %</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Literature-GPS</td>
<td>79.96%</td>
<td>20.26%</td>
</tr>
<tr>
<td>Economics-GPS</td>
<td>70.98%</td>
<td>29.02%</td>
</tr>
<tr>
<td>U.S. History-GPS</td>
<td>54.72%</td>
<td>45.28%</td>
</tr>
<tr>
<td>Math I-GPS</td>
<td>46.67%</td>
<td>53.33%</td>
</tr>
<tr>
<td>Math II-GPS</td>
<td>28.00%</td>
<td>76.00%</td>
</tr>
<tr>
<td>Algebra-GPS</td>
<td>30.10%</td>
<td>70.10%</td>
</tr>
<tr>
<td>Geometry-GPS</td>
<td>29.84%</td>
<td>70.16%</td>
</tr>
</tbody>
</table>

Table 10 shows the EOCT results by Gender. The females scored higher on the EOCT in Ninth Grade Literature, Physical Science, American Literature, Math 1, Algebra, and Geometry. The males scored higher in Biology, Economics, U.S. History and Math II.

Table 10

EOCT Results by Gender and Subject

<table>
<thead>
<tr>
<th>Subject</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pass %</td>
<td>N</td>
</tr>
<tr>
<td>Biology-GPS</td>
<td>49.61%</td>
<td>126</td>
</tr>
<tr>
<td>Ninth Grade Literature-GPS</td>
<td>83.27%</td>
<td>219</td>
</tr>
<tr>
<td>Physical Science-GPS</td>
<td>41.67%</td>
<td>55</td>
</tr>
<tr>
<td>American Literature-GPS</td>
<td>86.47%</td>
<td>179</td>
</tr>
</tbody>
</table>

(continued)
Table 10 (continued)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pass %</td>
<td>N</td>
</tr>
<tr>
<td>Economics-GPS</td>
<td>14.29%</td>
<td>1</td>
</tr>
<tr>
<td>U.S. History-GPS</td>
<td>56.72%</td>
<td>114</td>
</tr>
<tr>
<td>Math I-GPS</td>
<td>33.33%</td>
<td>1</td>
</tr>
<tr>
<td>Math II-GPS</td>
<td>16.67%</td>
<td>1</td>
</tr>
<tr>
<td>Algebra-GPS</td>
<td>32.94%</td>
<td>84</td>
</tr>
<tr>
<td>Geometry-GPS</td>
<td>32.67%</td>
<td>66</td>
</tr>
</tbody>
</table>

N = Number of students who passed the test

Table 11 shows the EOCT results by Ethnicity. There were six Ethnic groups at the urban school. All groups didn’t test on every EOCT. Caucasians scored the highest in Biology with 100% passing. Hispanics had the highest failing rate of 65.75%. Asians scored the highest in Ninth Grade Literature with a passing rate of 77.78%. Caucasians had the highest failing rate of 40.00%. Asians scored the highest in Physical Science with 100%. American Indians scored the highest failing rate of 100%. In American Literature, Asians scored the highest with 100% passing. Caucasians had the highest failing rate of 25%. In economics Hispanics had the highest passing rate of 58.33%. The highest failing rate was held by African Americans at 69.23%. In U.S. History Multiracial students had the highest passing rate at 60.00%.
Table 11

EOCT Results by Ethnicity and Subject

<table>
<thead>
<tr>
<th>Subject</th>
<th>African American</th>
<th>Caucasian</th>
<th>Multiracial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pass %</td>
<td>N</td>
<td>Pass %</td>
</tr>
<tr>
<td>Biology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>48.31%</td>
<td>145</td>
<td>100.00%</td>
</tr>
<tr>
<td>Ninth Grade Literature-GPS</td>
<td>76.02%</td>
<td>279</td>
<td>60.00%</td>
</tr>
<tr>
<td>Physical Science-GPS</td>
<td>38.66%</td>
<td>92</td>
<td>50.00%</td>
</tr>
<tr>
<td>American Literature-GPS</td>
<td>82.97%</td>
<td>268</td>
<td>75.00%</td>
</tr>
<tr>
<td>Economics-GPS</td>
<td>30.77%</td>
<td>4</td>
<td>0.00%</td>
</tr>
<tr>
<td>U.S. History-GPS</td>
<td>56.92%</td>
<td>181</td>
<td>50.00%</td>
</tr>
<tr>
<td>Math I-GPS</td>
<td>20.00%</td>
<td>1</td>
<td>0.00%</td>
</tr>
<tr>
<td>Math II-GPS</td>
<td>40.00%</td>
<td>4</td>
<td>0.00%</td>
</tr>
<tr>
<td>Algebra-GPS</td>
<td>28.57%</td>
<td>102</td>
<td>50.00%</td>
</tr>
<tr>
<td>Geometry-GPS</td>
<td>28.21%</td>
<td>90</td>
<td>33.33%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hispanic</th>
<th>American Indian</th>
<th>Asian</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pass %</td>
<td>N</td>
<td>Pass %</td>
</tr>
<tr>
<td>Biology</td>
<td>34.25%</td>
<td>25</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ninth Grade Literature-GPS</td>
<td>66.22%</td>
<td>49</td>
<td>0.00%</td>
</tr>
<tr>
<td>Physical Science-GPS</td>
<td>48.00%</td>
<td>24</td>
<td>0.00%</td>
</tr>
<tr>
<td>American Literature-GPS</td>
<td>84.13%</td>
<td>53</td>
<td>0.00%</td>
</tr>
<tr>
<td>Economics-GPS</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>U.S. History-GPS</td>
<td>58.33%</td>
<td>35</td>
<td>0.00%</td>
</tr>
<tr>
<td>Math I-GPS</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Math II-GPS</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Algebra-GPS</td>
<td>17.57%</td>
<td>13</td>
<td>0.00%</td>
</tr>
<tr>
<td>Geometry-GPS</td>
<td>41.03%</td>
<td>32</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

N = Number of students who passed the test
Hispanics had a failing rate of 100%. African Americans were the only group tested in Math 1. They had a passing percentage of 20.00% and a failing percentage of 80.00%. African Americans had the highest percentage passing Math II at 40.00%. Hispanics had the highest failing percentage at 82.43%. Caucasians had the highest passing percentage in Algebra with 50.00%. Multiracial had the highest failing percentage of 100%. In Geometry, Asians had the highest passing percentage of 75.00%. Multiracial had the highest failing rate of 75.00%.

RQ1: Does a teacher's sense of efficacy in the use of technology improve students' test scores on EOCT?

No, a teachers’ sense of efficacy in the use of technology doesn’t improve test scores. The teachers showed in Table 7 that the more professional development in technology the higher the self-efficacy in teachers. Many of the teachers said from their interviews that they had only one or two professional development in technology a year. The school passed only four out of ten EOCT.

RQ2: Is there a relationship between EOCT scores and teachers' use of instructional technology?

Yes, the teachers used the technology that was available to them in the school. From there interviews many of them desired to have more technology in their classrooms and expressed concerns over the lack of it. The teachers that used technology the less had the highest test scores in the school.

RQ3: Is there a statistically significant difference between student achievement scores on the EOCT based on gender?
Yes, there is a statistically difference between achievement scores on the EOCT based on gender. The females scored higher on the EOCT in Ninth Grade Literature, Physical Science, American Literature, Math 1, Algebra, and Geometry. The males scored higher in biology, economics, U.S. history and math II. See Table 10 for EOCT results by gender.

RQ4: Is there a statistically significant difference between student achievement scores on the EOCT based on Ethnicity?

No, there is no statistically significant difference between student achievement scores on the EOCT based on Ethnicity. There were six ethnic groups at the urban school. All groups did not test on every EOCT. Both Asian and African-American students had the highest scores on three of the test. The data also showed that the number of students belonging to an ethnic group varied from African Americans having 1,065 to Native Americans having only one student. See Table 11 for EOCT results by ethnicity.

RQ5: Is there a statistically significant difference between student achievement scores on the EOCT based on teacher experience?

No, there is no statistically significant difference between student achievement scores on the EOCT based on teacher experience. The data showed that younger teachers would use technology more with their students and it shows that less experienced teachers have higher self-efficiency in the use of technology. Only 3.1% of the teachers had 5 years or less teaching experience. The school failed 6 out of 10 EOCT.

RQ6: Is there a statistically significant difference between student achievement scores on the EOCT based on teacher qualifications?
No, all the teachers had teaching certification in their subjects. The data were unable to match teacher qualification with student achievement scores on the EOCT.

RQ7: Is there a statistically significant relationship between student achievement scores on the EOCT based on instructional practices?

Yes, because all the teachers used some form of technology in their instructional practices. The technology was limited and restricted the teachers from fully integrating into lesson plans. Teachers said if they had more technology and professional development on technology they would use it more in their classrooms. The literature teachers had the highest test scores used technology the less in their classrooms.

Summary

The purpose of this mixed method research design was to determine if teachers use of instructional technology and other factors would influence EOCT scores. The EOCT scores were analyzed in terms of gender, ethnicity, teacher experience, teacher qualifications and instructional practices. Chapter V introduced the qualitative and quantitative results of the overall EOCT scores, interviews, and surveys. Chapter VI discusses the findings. The research questions uncovered findings which are discussed in depth in Chapter VI.
CHAPTER VI

FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

Schoeller (2004) stated technology usage has been shown to not only have a positive impact on the instructional process and student achievement, but is in fact, changing the way we deliver instruction to our students. The way teachers use and view technology can have a major impact on how it is integrated into the course they are teaching. Chen and McGrath (2001) reported that students who use technology understand the subject matter at a deeper level than do their counterparts. They are more deeply engaged in their work. Georgia high schools were being asked to ensure that all students meet rising academic standards. They were also being asked to have more students prepared to pass the EOCT.

The question is: How do schools raise EOCT scores by using technology? The technology has to be not only in the schools, but in the classrooms. The teachers must have professional development and training on the latest in instructional technology. The support and maintenance of the technology has to be in place for there to be continuous success of teachers and students.

Research Questions

RQ1: Does a teacher's sense of efficacy in the use of technology improve students' test scores on EOCT?
RQ2: Is there a relationship between EOCT scores and teachers' use of instructional technology?

RQ3: Is there a statistically significant difference between student achievement scores on the EOCT based on gender?

RQ4: Is there a statistically significant difference between student achievement scores on the EOCT based on Ethnicity?

RQ5: Is there a statistically significant difference between student achievement scores on the EOCT based on teacher experience?

RQ6: Is there a statistically significant difference between student achievement scores on the EOCT based on teacher qualifications?

RQ7: Is there a statistically significant relationship between student achievement scores on the EOCT based on instructional practices?

**Findings**

The research found that teachers were very limited in the technology they had in their classrooms. This did have an effect on how they could integrate technology into the curriculum. This also limited what the students were able to use. Many of the students did not have computers at home; so many teachers minimized the number of assignments that involved technology. Many of the teachers had to check out LCD projectors from the media center. No one had a mounted LCD projector in their classroom. There were a few eBeams around. They also had to be checked out and shared by teachers. The media carts and computer labs were available. The teachers
had to sign up for them weeks in advance. They also may not have been fully functional when the teacher got to use them.

There was technical support in the school. The school had one person to maintain and assist teachers with any technology issues. The majority of that person’s time was taken up with maintenance and removal of downloads by students.

The majority of the teachers had one or more in-services on technology during the year. The lack of professional development did have an impact on teachers using technology. It was never determined if professional development was not offered or if the teachers did not sign up for it.

The teachers overall loved technology and would welcome using it in their classroom. They were limited to using LCD projectors, their own laptops, PowerPoint’s and eBeams. Their wish list included Smartboards, LCD projectors mounted in the classrooms, computers in the classrooms, and eBeams. The teachers were expected to have the students prepared for EOCT. They used USA Test Prep to prepare the students for the test. They felt pressure to have the students perform well on the EOCT.

The study also showed that younger teachers used technology more and had their students to use it more often. The more technology resources a teacher had the more likely they were to use it in their lessons plans. More professional development would increase technology integration into lesson plans, make teachers have a higher self-efficacy and increase student usage. One surprising finding was that the teachers whose students used less technology had the highest test scores. The ninth grade literature had a 76.09% passing percentage and American literature had 79.96% passing percentage. The
schools overall EOCT test scores were not that good. The school only passed four EOCT with a 54.72% or higher. The females outperformed the males by passing 6 of the EOCT. The males only outscored the females on 4 parts of the test. The scores by ethnicity are shown in Table 12. Both Asian and African-American students had the highest scores on three of the test.

Table 12

*EOCT Percentage of Highest Scores by Ethnicity*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Ethnicity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>Caucasian</td>
<td>100.00%</td>
</tr>
<tr>
<td>Ninth Grade Literature</td>
<td>Asian</td>
<td>77.78%</td>
</tr>
<tr>
<td>Physical Science</td>
<td>Asian</td>
<td>77.78%</td>
</tr>
<tr>
<td>American Literature</td>
<td>Asian</td>
<td>100.00%</td>
</tr>
<tr>
<td>Economics</td>
<td>African American</td>
<td>30.77%</td>
</tr>
<tr>
<td>U.S. History</td>
<td>Multiracial</td>
<td>60.00%</td>
</tr>
<tr>
<td>Math I</td>
<td>African American</td>
<td>20.00%</td>
</tr>
<tr>
<td>Math II</td>
<td>African American</td>
<td>40.00%</td>
</tr>
<tr>
<td>Algebra</td>
<td>Caucasian</td>
<td>50.00%</td>
</tr>
<tr>
<td>Geometry</td>
<td>American Indian</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

**Implications**

The implications for this research study is that in order for teachers to increase EOCT scores by using technology, the issues in the school must be addressed. The school must increase technology in the classrooms. The lack of technology inside the
classrooms prevented teachers from increasing their self-efficacy, student usage and possibly increasing EOCT scores. Teachers need the ability to plan lessons that integrate technology and have it available to use. Teachers need enough equipment that is working and ready to use for their classrooms. The teachers must have in-service and training on how to use technology in the classroom. They must have numerous opportunities throughout the year to stay current on the use of technology.

A new system of signing up for media carts, LCD projectors, eBeams and the computer labs must be implemented. One of the problems were teachers had to struggle to use these things. A more balanced system must be put into place to make sure all teachers have access to them. The results from the interviews, surveys and overall EOCT scores have shown why that technology has not had an impact on the EOCT at this urban high school.

**Limitations of the Study**

This research study had several limitations. One limitation of this study was the small sample pool of teachers to participate in the survey and interview. Sixteen teachers participated in the survey and 13 teachers participated in the interview. The results could have been better validated by using more participants. Only using one school limited the pool of participants. Many of the EOCT teachers from the 2011-2012 school year had left the school. This limited the number of teachers that could be interviewed. The lack of technology in the school and classrooms limited the study. The amount of technology available impacted both the teacher’s and student’s
performance. Having more technology could have had more of an impact on EOCT scores.

Recommendations

Leadership

There are several recommendations for administrators. Today’s administrators are faced with the integration of technology into education like never before. Schools are expected to have technology in use throughout the buildings. One of the major problems administrators have is funding for new technology and the maintenances of the existing inventory. All schools have some form of technology, but many are struggling to get new equipment and maintain what they have. District level leaders and school principals have to seek new funding for technology. Educational leaders need to be aware of their working and non-working inventory. The urban school in the study didn’t have enough technology and there is only one technical support person in the building. Having a technical support person in the building is a must. Also being able to get assistance from the school district is something that has to be done.

School leaders have to make sure that technology is used in the schools, but most importantly inside the classrooms. Teachers not only need computer labs, but computers, LCD projectors, laptops, Smartboards and what other technology devices that will improve instructional practices and learning. Leaders have to be aware of the technology inventory that is in the building. What can be used by staff and students? Are there restrictions on moving certain equipment around that may have been purchased by grants
or other funds? What equipment may be available at the district warehouse that is not being used or is in transition from another school?

Administrators need to be aware of teachers' needs and wants. Teachers know what will work well for them in the classrooms. They attend in-services on the latest technology and are able to see what can and cannot work in the classrooms. Teachers have to be allowed to have input on what they will be using. This will allow teachers to buy in to what you are trying to get them to do. Quality professional development in the use of technology seems to be a necessity. This will enhance the teacher's ability to integrate technology with teaching and learning. This will help teacher use current best practices in their teaching of the EOCT course.

Finally, principals can match teachers EOCT with their use of instructional technology. They can use the test data to see what teachers did well on the test and how they use technology during instructional time. This will give principals the opportunity to see what the best instructional practices for preparing for EOCT are.

Further Research

Based on the findings of this study, I propose the following further research:

1. Public school districts could do further research to determine the technological needs in low socioeconomic urban schools.

2. Further research should have a similar school in terms of socioeconomic status and technology to compare the two.

3. Public school districts could do further research on the impact of using technology in EOCT courses and student achievement on the EOCT.
4. Further studies of instructional technology should also compare a school of higher socioeconomic status and that has current instructional technology.

5. Principals in urban areas could do further research and investigate the implications on the use of technology in classroom instruction and give the advantages of technology in this digital age.

6. Public school districts could do further research on urban school communities and test teachers’ use of blended technology that may influence students’ EOCT scores.

7. Further research should have a larger sample group should to increase the validity of the study.

**Conclusion**

The impact of technology on the high school curriculum should have a positive effect on student’s attitudes and academic performance in the classroom (Gray, Thomas, & Lewis, 2010). A technology enriched environment can produce higher test scores on standardized test. Not having this type of environment makes it difficult for teachers and students. Teachers are in need of professional development that fosters the use of technology in the classroom. They must be able to take the latest pedagogy instructional technology and apply it.

Administrators must continue to find ways to ensure academic success and the passing of the EOCT. The mission and vision of the school, is supported by teachers who must use technology in their classroom. Educational leaders will have to find ways
to increase funding for technology so that it continues to be integrated into the curriculum. This will better prepare students for EOCT as well as life.
APPENDIX A

Interview Protocol with Teachers

Teaching background
- How long have you been teaching?
- What is your teaching certification in?
- Have you always taught high school?
- How many years have you taught at this school?
- What subject do you prefer to teach?
- What are your goals as a teacher?
- What are the school’s expectations of you as a __________ teacher?

The use of instructional technology
- How long have you used technology in your classroom?
- How often do you attend or get professional development in technology?
- Do you have support for using technology in the school?
- What are some of the ways you use technology in your classroom?
- How many computers do you have in your classroom?
- What instructional resources do you have in your classroom?
- Do you have access to Media Carts?
- Do you have access to a computer lab?
- How do you feel about using technology?
- Do you allow your students to use technology?
- What technology resource(s) would you like to have in your classroom?
- Are you able you integrate technology into the teaching of your EOCT course and if so how?
APPENDIX B

Survey Instrument

1. Gender: ______ Female ______ Male

2. How long have you been teaching?
   _____ 0 - 5 years
   _____ 5 - 10 years
   _____ 10 - 15 years
   _____ 15 - 20 years
   _____ 20 - 25 years
   _____ 25+ years

3. How many years have you taught at this school?
   _____ 0 - 5 years
   _____ 5 - 10 years
   _____ 10 - 15 years
   _____ 15 - 20 years
   _____ 20 - 25 years
   _____ 25+ years

4. What grade(s) do you teach?
   ______ 9th
   ______ 10th
   ______ 11th
   ______ 12th

5. What End of Course class do you teach?
   _____ Mathematics I
   _____ Mathematics II,
   _____ GPS Algebra
   _____ GPS Geometry.
   _____ United States History
   _____ Economics/Business/Free Enterprise
   _____ Ninth Grade Literature EOCT
   _____ American Literature & Composition EOCT
   _____ Physical Science
   _____ Biology
6. What is your teaching certification in?
   - Math
   - Social studies
   - Science
   - English
   - Other

7. How would you rate yourself with using technology? Scale your answers from 1 (Not at all strong) to 7 (Extremely strong).
   1 2 3 4 5 6 7

8. How would you rate your students using technology? Scale your answers from 1 (Not at all strong) to 7 (Extremely strong).
   1 2 3 4 5 6 7

9. How would you rate your classroom instructional technology resources? Scale your answers from 1 (Not at all strong) to 7 (Extremely strong).
   1 2 3 4 5 6 7

10. How would you rate the school's instructional technology resources? Scale your answers from 1 (Not at all strong) to 7 (Extremely strong).
    1 2 3 4 5 6 7

11. How frequently do you use instructional technology resources in your lessons? Scale your answer from 1 (Never Used) to (Very Frequently Used).
    1 2 3 4 5 6 7

12. Do you have in-services/professional development on instructional technology? Scale your answer from 1 (Never) to (Very Frequently).
    1 2 3 4 5 6 7

13. Do you have the opportunity to exchange best practices about instructional technology? Scale your answer from 1 (Never) to (Very Frequently).
    1 2 3 4 5 6 7
APPENDIX C

Consent Form

Title of Dissertation:

An Investigation of the Relationship of Selected End of the Course Test Scores and selected perceptions of teachers on the use of technology in an Urban High School Cluster

Introduction

You have been asked to participate in a research study conducted by Terance Shipman, a doctoral student in the school of Educational Leadership at Clark Atlanta University. This study is supervised by Terance Shipman, researcher; an On – Site research Monitor assigned by the school; and Dr. Trevor Turner, supervising faculty and dissertation chair.

What is the purpose of this research study?

The purpose of this study is to determine if teachers use of instructional technology and other factors will influence EOCT scores. The EOCT scores will be analyzed in terms of, gender, ethnicity, socioeconomic status, teacher experience, teacher qualifications, and instructional practices. Establishing a relationship between the independent variables and performance levels on the EOCT scores may allow schools leaders to develop possible intervention strategies for high school students. Performance levels on the EOCT are categorized as exceeds, meets, does not meet Georgia proficiency levels.

Why are you being asked to participate?

You are being invited to participate in this research study because you were a EOCT teacher at the school that the research will take place. The study seeks to extend knowledge on the EOCT and will attempt to give middle and high school administrators, assistance with planning, scheduling and staffing of EOCT courses. Middle school students can take EOCT courses. Middle school students completing an EOCT course must take the EOCT regardless of whether they are receiving high school credit. This research will explore how integrating instructional technology expands student learning and help teachers to prepare students to successfully pass the EOCT course.
Appendix C (continued)

What will happen during this study?

1. You will be asked to complete a survey about yourself and instructional technology. Please do not put your name on the survey. Please complete and submit the survey back to me no later than 2 days later. Any coding used is simply to track which surveys have been completed. No individual data will be reported.

2. Following completion of the survey and signed consent form, you will be asked to participate in one-on-one interview with me. I will give you the date and time of the interview.

An audio recording will be made during the interview so that the researcher can be certain that your responses are recorded accurately only if you check the box below:

How long will I be in this study?

☐ I give my permission for an audio recording to be made of me during my participation in the one-on-one interview.

The study involves the completion of the survey and the one-on-one interview, to be arranged at your convenience. The survey will take approximately fifteen minutes to complete. It will take approximately thirty minutes for the one-on-one interview. The total time involved in participation will be approximately forty-five minutes.

Are there any risks to me?

The information you provide will be kept strictly confidential. The informed consent form and other identifying information will be kept separate from the data. The consent form, survey, an audio recording will be kept in the researcher’s home in a secure location. The confidential nature of the discussions in the interview will be emphasized with the participant but cannot be guaranteed. The recording from the interview will be listened to only by the researcher and Dr. Trevor Turner, supervising faculty and dissertation chair. Any records that would identify you as a participant in this study, such as the informed consent form, will be destroyed by shredding three years after the completion of the study. The survey and recording will be destroyed immediately after the completion of the study. You will be asked to provide your randomly assigned alphabet for any quotes that might be included in the final research report. If any direct quotes will be used, permission will be included in the final research report. If any direct quotes will be used, permission will be sought from you first. The risks to you during or after your participation are considered minimal. There may be times during the interview process that you may experience a myriad of emotions that may cause feelings of frustration, happiness or sadness. You may withdraw from this study at any time, either during or after your participation without negative consequences. Should you withdraw, your data will be eliminated from the study and will be destroyed. Should you withdraw
and you participated in the interview, your recording will not be used in the study and will be destroyed immediately after the completion of the study.

**What are the benefits of the research?**

The results of this research will be published in my dissertation and possibly published in subsequent journals or books or presentation. Data from this study may serve as a foundation for further research on EOCT. Test score data from this study may be used to identify teachers with high student achievement scores in order to create follow-up studies which might identify effective instructional methods and practices corresponding to increased student achievement. It can also seek to see if technology improves high school students prepare for post-secondary studies. This can lead to a great sense of empowerment; otherwise, there will be no benefit from taking part in this study. You may request a copy of the summary of the final results by indicating your interest at the end of this form.

**Who can I contact for additional information?**

If you have any questions about any aspect of this study or your involvement, please tell the researcher before signing this form. If at any time you have questions or concerns about your rights as a research participant, contact Dr. Trevor Turner at Clark Atlanta University by email at turner@cau.edu or by telephone at 404-880-8980. Dr. Turner is the Dissertation Chair, as well as the supervising faculty at Clark Atlanta University in the Department of Educational Leadership. The supervising faculty has provided contact information at the bottom of this form.

Two copies of this informed consent form have been provided. Please sign both, indicating you have read, understand, and agree to participate in this research. Return one to the researcher and keep the other for your files. The Educational Leadership at Clark Atlanta University retains the right to access the signed informed consent forms and other study document.

NAME OF PARTICIPANT (please print)  DATE

SIGNATURE OF PARTICIPANT
APPENDIX D

Teacher Interviews

Teaching Background

Teacher A

How long have you been teaching?
I have been teaching for 17 years.

What is your teaching certification in?
I am certified in Social Studies, grades 6-12.

Have you always taught high school?
Middle school for 11 years; high school for 6. Previously, I taught middle school for 11 years. I have been teaching high school for 6 years.

How many years have you taught at this school?
Six years. I have taught here for six years.

What subject do you prefer to teach?
Government. I prefer teaching Government.

What are your goals as a teacher?
To help students become productive citizens. To know how government runs and become an active participate. My goals are to teach my students how the government runs, help them become active participants of the government and help them develop into productive citizens.

What are the school’s expectations of you as a __________ teacher?
The school expects me to be a miracle worker.

The Use of Instructional Technology

How long have you used technology in your classroom?
I have used technology for the last ten years.

How often do you attend or get professional development in technology?
We have professional development in technology about once or twice a year.

Do you have support for using technology in the school?
No, there is no support for using technology.

What are some of the ways you use technology in your classroom?
In my classroom, I use PowerPoint and eBeams.

How many computers do you have in your classroom?
There are no computers in my classroom.
Appendix D (continued)

What instructional resources do you have in your classroom?
I have textbooks and no maps. Textbooks are the only instructional resources in
my classroom. Currently, we don’t even have maps.

Do you have access to Media Carts?
Yes, I have access to Media Carts.

Do you have access to a computer lab?
Yes, I have access to the computer lab.

How do you feel about using technology?
I have no problem with using technology. It enhances the lessons more.
Technology is a great resource. It enhances the lessons.

Do you allow your students to use technology?
We have no computers in the classroom and many of the students don’t have
computers at home. I try to infuse technology into the lesson and only have the
students use it on major projects. I don’t have any computers in my classroom and
most of my students don’t have computers at home. I try to infuse technology
into each lesson but the students only get to use it when they are working on
major projects.

What technology resource(s) would you like to have in your classroom?
I would love to have a smartboards, IPads and kindles.

Are you able you integrate technology into the teaching of your EOCT course and if so
how?
Yes, I am. I take the students to the lab and use USA Tes: Prep. I usually do these
three months before the EOCT test. I also have the students work on it after
school and at home.

Teacher B

Teaching Background

How long have you been teaching?
I have been teaching for 17 years.

What is your teaching certification in?
I am certified in English education.

Have you always taught high school?
Yes, I have always taught high school.

How many years have you taught at this school?
I have taught here for 12 years.

What subject do you prefer to teach?
My subject of choice is Social Studies.

What are your goals as a teacher?
As a teacher, I want to see success for all students.
Appendix D (continued)

What are the school’s expectations of you as a ____________ teacher?
   The school expects me to provide instruction to the students and support the
   school’s mission statement.

The Use of Instructional Technology

How long have you used technology in your classroom?
   I have been using technology for about 6 to 7 years in my classroom.

How often do you attend or get professional development in technology?
   I go maybe once a year. I attend professional development once a year.

Do you have support for using technology in the school?
   There is not enough support. Yes, but not as much as I would like.

What are some of the ways you use technology in your classroom?
   I use YouTube videos, and PowerPoint. I incorporate technology by using
   YouTube and PowerPoint.

How many computers do you have in your classroom?
   I have none. I don’t have any computers in my classroom.

What instructional resources do you have in your classroom?
   I use text messages and internet. I also use additional staff development materials.

Do you have access to Media Carts?
   No, I don’t have access to Media Carts.

Do you have access to a computer lab?
   Yes, I have access to the computer lab.

How do you feel about using technology?
   I feel fairly comfortable. It’s hard to keep up with the students they’re more
   advanced than I am.

Do you allow your students to use technology?
   Yes, I allow them to use technology.

What technology resource(s) would you like to have in your classroom?
   I would love to have an LCD projector, a Smartboards and more computers.

Are you able to integrate technology into the teaching of your EOCT course and if so
how?
   Yes, I use American Literature websites and history websites.

Teacher C

Teaching Background

How long have you been teaching?
   I have been teaching for 3 years.

What is your teaching certification in?
   I am certified in Mathematics.
Appendix D (continued)

Have you always taught high school?
Yes I have.

How many years have you taught at this school?
I have only been at this school for 3 years.

What subject do you prefer to teach?
I prefer teaching Algebra.

What are your goals as a teacher?
My short term goal is for 70% of the students to pass the EOCT. My long term goal is to become a master teacher and coach.

What are the school’s expectations of you as a __________ teacher?
The school expects me to make sure that I engage the students in the lessons have a positive relationship with the students and also collaborate with my teammates.

The Use of Instructional Technology

How long have you used technology in your classroom?
I have used technology for 3 years.

How often do you attend or get professional development in technology?
Only once; I’ve only attended professional development in technology once.

Do you have support for using technology in the school?
Yes, there are lots of demands for technology support.

What are some of the ways you use technology in your classroom?
I use the LCD projector, graphic calculators, PowerPoint, games and the internet.

How many computers do you have in your classroom?
None; At this moment, I don’t have any computers in my classroom.

What instructional resources do you have in your classroom?
I have manipulatives, workbooks, books with games in them and textbooks.

Do you have access to Media Carts?
Yes, I do.

Do you have access to a computer lab?
Yes, have access to the computer lab.

How do you feel about using technology?
I can improve is I knew what was more available in the school district.

Do you allow your students to use technology?
Yes, I allow my students to use technology.

What technology resource(s) would you like to have in your classroom?
I wish I had a smartboards and had an understanding of the software that can be used for a Smartphone.

Are you able you integrate technology into the teaching of your EOCT course and if so how?
I use USA Test Prep, quizzes and go along with the lessons
Appendix D (continued)

Teacher D

Teaching Background

How long have you been teaching?
I have been teaching for 13 years.

What is your teaching certification in?
I am certified in Social Studies.

Have you always taught high school?
Middle school for two years and high school for 11. No. I taught middle school for two years. I have been teaching high school for eleven years.

How many years have you taught at this school?
I have been teaching here for 11 years.

What subject do you prefer to teach?
I prefer Economics.

What are your goals as a teacher?
Turn out students that can move on and go to college. Do all I can for the students. My goal is to mold my students into individual that will someday be college graduates.

What are the school’s expectations of you as a _______ teacher?
The school requires me to have high expectations and standards. I am expected to stay up to date with recent research. Ultimately, I am expected to provide my students with the skills they need to reach the next level.

The Use of Instructional Technology

How long have you used technology in your classroom?
13 years. Don’t have nearly the technology that I need for this class.

How often do you attend or get professional development in technology?
Maybe once or twice a year. I only get professional development in technology once or twice a year.

Do you have support for using technology in the school?
The school is doing all they can, but there is still a lack of it-support at the school.

What are some of the ways you use technology in your classroom?
I use an LCD projector, videos and PowerPoints.

How many computers do you have in your classroom?
I don’t have any computers in my classroom.

What instructional resources do you have in your classroom?
Textbooks, teacher editions and learning packages are my classroom resources.

Do you have access to Media Carts?
Yes and no. Someone has it all the time. Others use it when they can get on the list.
Appendix D (continued)

Do you have access to a computer lab?
Yes, the lab is always accessible.

How do you feel about using technology?
I love it. I try to be on the cutting edge. Technology will be the one thing that may level the playing field.

Do you allow your students to use technology?
Yes, they may use their smartphones and laptops on certain assignments.

What technology resource(s) would you like to have in your classroom?
I would like to have TV channels that students can use to watch economics.

Are you able you integrate technology into the teaching of your EOCT course and if so how?
Yes, through assignments in class and USA Test Prep.

Teacher E

Teaching Background

How long have you been teaching?
I have been teaching for 8 years.

What is your teaching certification in?
My certification is in Mathematics.

Have you always taught high school?
Yes, I have always taught high school.

How many years have you taught at this school?
I have taught here for 5 years.

What subject do you prefer to teach?
I don't have a preference, I like teaching all of them. I especially love teaching math.

What are your goals as a teacher?
My goal is to help students become successful.

What are the school's expectations of you as a___________ teacher?
The school expects me to deliver a rigorous curriculum and to make sure that all of the student's needs are met.

The Use of Instructional Technology

How long have you used technology in your classroom?
I have always used some form of technology in my classroom.

How often do you attend or get professional development in technology?
I attend professional development 5 to 6 times a year.

Do you have support for using technology in the school?
I get some support.
Appendix D (continued)

What are some of the ways you use technology in your classroom?
   I use PowerPoint, calculators, laptops, software, scratch pads, and apps for smartphones.

How many computers do you have in your classroom?
   None, I just have my laptop.

What instructional resources do you have in your classroom?
   I have textbooks, workbooks, and calculators.

Do you have access to Media Carts?
   Yes, it is accessible to me.

Do you have access to a computer lab?
   No, I don’t have access to the computer lab.

How do you feel about using technology?
   I love it.

Do you allow your students to use technology?
   Yes, I always allow my students to use technology.

What technology resource(s) would you like to have in your classroom?
   I would like to have a smartboards or something similar. I would also like to have a view documents camera, and an LCD projector mounted.

Are you able to integrate technology into the teaching of your EOCT course and if so how?
   Yes, I use technology for everything. I always use the calculators, and PowerPoint.

Teacher F

Teaching Background

How long have you been teaching?
   I have been teaching for 14 years.

What is your teaching certification in?
   I am certified in social studies and Health/PE.

Have you always taught high school?
   Yes, I have.

How many years have you taught at this school?
   I have taught at this school for 5 years.

What subject do you prefer to teach?
   Economics is my preferred subject.

What are your goals as a teacher?
   My goals are to become a college professor and to have my students do their best.

What are the school’s expectations of you as a __________ teacher?
   My school requires me to teach the students the state standards and to give my students the skills they need to pass the EOCT.
Appendix D (continued)

The Use of Instructional Technology

How long have you used technology in your classroom?
I have used technology for 10 years.

How often do you attend or get professional development in technology?
I attend professional development 2 to 3 times a year.

Do you have support for using technology in the school?
Just a little bit. The school provides a little support.

What are some of the ways you use technology in your classroom?
I used PowerPoint, LCD projectors and videos.

How many computers do you have in your classroom?
I have no computers in my classroom. I don't have any computers in my classroom.

What instructional resources do you have in your classroom?
The only resource that I have in my classroom is textbooks.

Do you have access to Media Carts?
No, I don't have Media Carts.

Do you have access to a computer lab?
Yes, you have to sign up for an appointment to use the lab.

How do you feel about using technology?
I love it. I have to get caught up or use what the students are using so that I can meet the needs of the students.

Do you allow your students to use technology?
Yes, but it's limited.

What technology resource(s) would you like to have in your classroom?
I would love to have computers for my students to use.

Are you able you integrate technology into the teaching of your EOCT course and if so how?
It's totally integrated. I have converted the text book into PowerPoint.

Teacher G

Teaching Background

How long have you been teaching?
This is my 4th year teaching.

What is your teaching certification in?
6 – 12 mathematics. I am certified to teach mathematics in grades 6 – 12.

Have you always taught high school?
Yes, I have.

How many years have you taught at this school?
I have taught at this school for 4 years.
Appendix D (continued)

What subject do you prefer to teach?
   I prefer teaching Geometry.

What are your goals as a teacher?
   My goal as a teacher is to have good EOCT scores and help the students become responsible for their learning.

What are the school’s expectations of you as a __________ teacher?
   I am expected to have an effective classroom, keep the students engaged and achieve school wide goal of 100% passing rate on the EOCT.

The Use of Instructional Technology

How long have you used technology in your classroom?
   I have used technology for 4 years in some form or fashion.

How often do you attend or get professional development in technology?
   I attend professional development about twice a year.

Do you have support for using technology in the school?
   Yes, my school supports my use of technology.

What are some of the ways you use technology in your classroom?
   I use USA Test prep, instructional notes and testing.

How many computers do you have in your classroom?
   I don’t have any computers in my classroom.

What instructional resources do you have in your classroom?
   I have eBeam, a projector, textbooks, workbooks, and calculators.

Do you have access to Media Carts?
   Yes, I do.

Do you have access to a computer lab?
   Yes, I have access to the computer lab.

How do you feel about using technology?
   Technology is a great tool. It is great for a visual effect.

Do you allow your students to use technology?
   Yes, I always allow my students to use technology.

What technology resource(s) would you like to have in your classroom?
   I would like to have portable media devices, Smartboards, regular computers and sound equipment.

Are you able you integrate technology into the teaching of your EOCT course and if so how?
   Yes, I am able to integrate technology for mock test and visualization of shapes.
Appendix D (continued)

Teacher H

Teaching Background

How long have you been teaching?
   I have taught for 14 years.
What is your teaching certification in?
   My certification is in Social studies.
Have you always taught high school?
   Yes, I have always taught high school.
How many years have you taught at this school?
   I have taught here for 14 years.
What subject do you prefer to teach?
   I prefer teaching AP US History.
What are your goals as a teacher?
   My goal is to take students to the next level. There post-secondary options will prepare them for college.
What are the school's expectations of you as a __________ teacher?
   I am expected to be an effective classroom teacher, to act professionally at all times, improve myself professionally and to know the latest research and to publish.

The Use of Instructional Technology

How long have you used technology in your classroom?
   I have used technology for about 14 years.
How often do you attend or get professional development in technology?
   I attend about in-service a year.
Do you have support for using technology in the school?
   Yes, we have a technology specialist on staff.
What are some of the ways you use technology in your classroom?
   I use LCD projector, internet, PowerPoint, and document camera.
How many computers do you have in your classroom?
   I only have my one laptop.
What instructional resources do you have in your classroom?
   I have textbooks, DBQ projector and AP Us history resources.
Do you have access to Media Carts?
   Yes, but most of the time they are not functional.
Do you have access to a computer lab?
   Yes, have to search one out and sign up for it.
How do you feel about using technology?
   I wouldn’t be an effective teacher if I didn’t use technology. All the best libraries are at your figure tips.
Appendix D (continued)

Do you allow your students to use technology?
   Yes, they can use cellular phones and at home USA Test Prep for the EOCT.

What technology resource(s) would you like to have in your classroom?
   I would love to have a new LCD projector, easier whiteboards, devices so that students could respond electronically, and iPads.

Are you able you integrate technology into the teaching of your EOCT course and if so how?
   The students use USA Test Prep three times a week. I give extra credit for those who come to tutorial on Thursdays.

Teacher I

Teaching Background

How long have you been teaching?
   15 years

What is your teaching certification in?
   Mathematics

Have you always taught high school?
   Yes

How many years have you taught at this school?
   10 years

What subject do you prefer to teach?
   Algebra

What are your goals as a teacher?
   To improve the mathematical awareness of young students.

What are the school’s expectations of you as a __________ teacher?
   Politically speaking to improve EOCT test scores.

The Use of Instructional Technology

How long have you used technology in your classroom?
   7 years

How often do you attend or get professional development in technology?
   Maybe once a year.

Do you have support for using technology in the school?
   Sometimes we can get support.

What are some of the ways you use technology in your classroom?
   I use Plato instruction, GeoAlgebra, Laptops, YouTube and I have a classroom website.

How many computers do you have in your classroom?
   Zero
Appendix D (continued)

What instructional resources do you have in your classroom?
   Textbooks and calculators
Do you have access to Media Carts?
   Yes
Do you have access to a computer lab?
   Somewhat, but no.
How do you feel about using technology?
   I feel great about it. I want to do everything through technology, but we are limited here.
Do you allow your students to use technology?
   Yes, but they are limited.
What technology resource(s) would you like to have in your classroom?
   LCD projector mounted eBeam and computers in the classroom.
Are you able to integrate technology into the teaching of your EOCT course and if so how?
   Yes, USA Test Prep and practice test questions.

Teacher J

Teaching Background

How long have you been teaching?
   9th
What is your teaching certification in?
   T-5 in English language Arts
Have you always taught high school?
   Yes
How many years have you taught at this school?
   7th
What subject do you prefer to teach?
   English language arts
What are your goals as a teacher?
   To have high student achievement.
What are the school’s expectations of you as a _______ teacher?
   The schools want to know that I care about the students. That I know my subject area. They expect me to be fair in terms of grading and give lots of feedback.

The Use of Instructional Technology

How long have you used technology in your classroom?
   I have used some form of technology since I began teaching.
How often do you attend or get professional development in technology?
   I have had about 10 trainings in technology.
Appendix D (continued)

Do you have support for using technology in the school?
   Yes, media center and the technology specialist at the school.
What are some of the ways you use technology in your classroom?
   I use LCD projector, eBeam, quizzes online, PowerPoint’s and Videos.
How many computers do you have in your classroom?
   Zero
What instructional resources do you have in your classroom?
   Textbooks, lesson plans and the achievement series.
Do you have access to Media Carts?
   No
Do you have access to a computer lab?
   Yes
How do you feel about using technology?
   I like it. Love it when it works. Hate it when it doesn’t work.
Do you allow your students to use technology?
   Yes, when they do presentations.
What technology resource(s) would you like to have in your classroom?
   I would like to have a mounted LCD Projector, a laptop for the projector and a laptop for me.
Are you able you integrate technology into the teaching of your EOCT course and if so how?
   Yes, teaching subject matter. I also use USA Test Prep.

Teacher K

Teaching Background

How long have you been teaching?
   21 years
What is your teaching certification in?
   Biology and board field which means she can teach multiply subjects of science.
Have you always taught high school?
   Yes
How many years have you taught at this school?
   8 years at this school.
What subject do you prefer to teach?
   Biology
What are your goals as a teacher?
   To empower students in knowledge and comprehension to both succeed on the EOCT and society
What are the school’s expectations of you as a ___________ teacher?
   High expectations that I will be able to impart knowledge and content. To communicate well with both students and parents.
Appendix D (continued)

The Use of Instructional Technology

How long have you used technology in your classroom?
I have always had technology in my classroom.

How often do you attend or get professional development in technology?
About four times a year.

Do you have support for using technology in the school?
Yes, we have a technology specialist.

What are some of the ways you use technology in your classroom?
I use PowerPoint, an overhead projector and I integrated the use of computers in my lessons.

How many computers do you have in your classroom?
I only have the teacher laptop in the classroom.

What instructional resources do you have in your classroom?
I have models, charts, hands-on models, specimen, chemicals, textbooks, teacher resource books and lab equipment.

Do you have access to Media Carts?
Yes, for the department. You have to sign up for it.

Do you have access to a computer lab?
Yes, the media center, business department if a teacher has a break.

How do you feel about using technology?
It a good thing. When I can’t do hands on things. It can be used a visualization for that lesson.

Do you allow your students to use technology?
Yes, when they have projects and when we go to one of the computer labs.

What technology resource(s) would you like to have in your classroom?
I would love to have a set of computers for the classroom.

Are you able you integrate technology into the teaching of your EOCT course and if so how?
Yes, I use PowerPoint and the document camera for test prep.

Teacher L

Teaching Background

How long have you been teaching?
11 years

What is your teaching certification in?
I have it in PE and biology.

Have you always taught high school?
Yes

How many years have you taught at this school?
7 years
Appendix D (continued)

What subject do you prefer to teach?
   Biology
What are your goals as a teacher?
   I want students to walk out the door much better than they walked in. I also want
   them to see the world scientifically.
What are the school’s expectations of you as a ___________ teacher?
   To deliver rigorous content of biology in a manner that is interesting.

The Use of Instructional Technology

How long have you used technology in your classroom?
   11 years
How often do you attend or get professional development in technology?
   Maybe, twice a year.
Do you have support for using technology in the school?
   Yes
What are some of the ways you use technology in your classroom?
   I use technology for everything. I put the homework on-line. I use the computer
cart and we watch videos on-line also.
How many computers do you have in your classroom?
   Zero
What instructional resources do you have in your classroom?
   I have a LCD projector and a television.
Do you have access to Media Carts?
   Yes
Do you have access to a computer lab?
   Yes
How do you feel about using technology?
   I would not want to teach without it. Students are more visual learners than ever
   before.
Do you allow your students to use technology?
   Yes, they use their cell phones and headphones.
What technology resource(s) would you like to have in your classroom?
   I would love to have a smartboards, LCD mounted projector, eBeam, and built in
   speakers.
Are you able you integrate technology into the teaching of your EOCT course and if so
how?
   I have integrated it holistic. I use EOCT release test from New York. I use web
   based software on the EOCT for review and practice.
Appendix D (continued)

Teacher M

Teaching Background

How long have you been teaching?
I have been teaching for 20 years.
What is your teaching certification in?
I'm certification in Social Sciences-History.
Have you always taught high school?
Yes
How many years have you taught at this school?
I have been at the school for 10 years.
What subject do you prefer to teach?
World History is my favorite subject to teach.
What are your goals as a teacher?
To help the next generation to be better than the one before it.
What are the school’s expectations of you as a teacher?
To be a teacher leader.

The Use of Instructional Technology

How long have you used technology in your classroom?
I have used technology for about 15 yrs.
How often do you attend or get professional development in technology?
At least 3 times a year
Do you have support for using technology in the school?
Not really, I usually get outside resources to assist me with any tech problems.
What are some of the ways you use technology in your classroom?
PowerPoint, Skype, and Edmodo.
How many computers do you have in your classroom?
None
What instructional resources do you have in your classroom?
Books, academic portfolio, cell phone and my personal computer.
Do you have access to Media Carts?
Yes
Do you have access to a computer lab?
Yes
How do you feel about using technology?
Very comfortable.
Do you allow your students to use technology?
Yes
What technology resource(s) would you like to have in your classroom?
Interactive board, mimios, computers and projector.
Appendix D (continued)

Are you able to integrate technology into the teaching of your EOCT course and if so how?

Yes, with the use of USA Test Prep and Study Island.
REFERENCES


