Diversity in the use of technology in instruction and assessment strategies in one predominantly African-American Metro Atlanta public high school

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ABSTRACT

EDUCATIONAL LEADERSHIP

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DIVERSITY IN THE USE OF TECHNOLOGY IN INSTRUCTION AND
ASSESSMENT STRATEGIES IN ONE PREDOMINANTLY
AFRICAN-AMERICAN METRO ATLANTA
PUBLIC HIGH SCHOOL

Committee Chair:  Dr. Sheila Gregory
Dissertation dated July 2012

The purpose of this sequential mixed method research study is to examine the
effects of the technology in the classroom, and to understand why highly qualified
teachers in metro Atlanta who teach minority, low income students and diversity in the
use of technology in their lesson plans, assessments, instruction, expectations from
students, and in-class student time. These teachers did attend mandatory in-service
training where they were not only trained to use technology; they were cautioned they
would be evaluated on their regular use of technology in their lessons.

The participants are representative of teachers from Metro Atlanta who have been
teaching about five years, about 5½ years with high-risk students, but only about two
years at their current school. Most participants have Master’s degrees and are certified to

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Of the 20 teachers invited to participate, 19—95%, accepted the invitation and completed the survey. Of that number, for unknown reasons, up to five participants skipped various questions repeated times. The first part of the survey was demographic and was tabulated by frequencies and percentages.

In analyzing all the data from the surveys, one item showed significant for teachers: “Technology is important,” and that item is required by the school district as a condition of employment—the computerized grade book. No other item showed significant for importance. Liquid crystal display (LCD) projectors and Smart boards showed significant for nonuse.
DIVERSITY IN THE USE OF TECHNOLOGY IN INSTRUCTION AND ASSESSMENT STRATEGIES IN ONE PREDOMINANTLY AFRICAN-AMERICAN METRO ATLANTA PUBLIC HIGH SCHOOL

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

BY

JASON THOMAS JAMES

DEPARTMENT OF EDUCATIONAL LEADERSHIP

ATLANTA, GEORGIA

JULY 2012
ACKNOWLEDGEMENTS

Thank you God and my Lord and Savior, Jesus Christ for making all things possible. For raising me to be the man I am today, encouraging me, pushing me beyond my limits, always believing in me, and always instilling in me the importance of getting a good education, and in knowing what the value of getting an education really means—I dedicate this degree to my parents, my mother, the Late Madora Thomas James and my father, the Late Jake Madison James, Jr. I am absolutely blessed and the luckiest child in the world to have had you as parents. Thank you. To my daughter, Zora Sanna James, “Queen,” this is for you! I thank Dr. Sheila Gregory for always believing in me, and to my committee, Dr. Moses Norman and Dr. Trevor Turner, thank you for your wisdom and guidance. You are truly geniuses. Thank you to Mrs. Betty Cooke and to Dr. Barbara Hill. Thank you to my colleagues, the participants of this study, and to Dr. Lyn Walden, Allison Peters, Lisa Anderson, and Victor Burrell. Alishia R. G. Hardy, I thank God every day for bringing you into my life, making you my partner, and making my life complete. Thank you to Lisa Gipson, Katina Howell, Jacqui Valentine, Brenda Rich, and Michael Johnson for supporting and encouraging me to reach this goal.
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CHAPTER I
INTRODUCTION

According to Irons (2002), since first brought to the Americas in 1619, blacks had to fight for what little education they received. The dominant group believed the only group worthy of educating was land-owning, white males (Irons, 2002; Rothberg, 2006). According to Gentry and Peelle (1995), after the American Civil War, things did not greatly improve and academic tracking became the norm (p. 24). By the 1930s, schools in the United States had developed an intricate system of student record keeping involving scores from Intelligence Quotient (IQ) tests, psychological tests, discipline records, anecdotal records, and grades. These records helped educational personnel track students onto vocational or academic paths from middle school or even grammar school through vocational school or college (Gentry & Peelle, 1995; Tyack, 1974).

In 2010, many middle-class high schools in the United States were based on this antiquated system of tracking whereas they allocated approximately 60% of their student body for farm or factory level work and trained them accordingly (Tyson, 2011; Weber, 2010). Tyson (2011) wrote that there were few factory or farm jobs in the United States, and the few that remain, close at a steady rate. Therefore, the United States’ educational system was not preparing students for any career in many cases (Casey & Upton, 2008, 189). Certainly, as recently as 2009, the United States was not training a majority of students for competition in today’s job market.
“By the year 2020, 123 million American jobs will be high skill/high pay occupations from computer programming to bio-engineering, but only 50 million Americans will be qualified to fill them” (Weber, 2010, p. 6). Laura (2011) stated:

Black boys who have been sorted, contained, and then pushed out of schools become black men—men whose patterns of hardship are pronounced and deeply entrenched—men who comprise nearly 50% of the adult males in prison—men who have been well primed neither for college, career, nor full participation in our democracy, but instead for punitive institutionalization. (p. 94)

When school officials force black males into lower academic tracks, the harm is irrevocable (Smith, 2009). Not only does tracking hold these students back from an appropriate curriculum, Smith stated, but it triggers a cycle of disruptive behavior, but it can trigger disciplinary expulsion, which can result in academic decline, which results in frustration, and disruptive behavior, as the cycle may continue (see Figure 1).

![Figure 1: Destructive Cycle of Tracking](image-url)
According to Hanushek, Machin, and Woessmann (2011), tracking students has been much easier to accomplish in the past few years. Norris and Conceição (2004) stated, “The digital divide is leaving millions disenfranchised from the opportunity to use technology to change their lives and to participate fully in democracy, in their own communities, and in today’s job market” (p. 69). In 2008, according to Pew Research, 30 million American households were without computers or the Internet; most of these households were low-income or rural (as cited in Long, 2008, p. 24). For example, 45% of black children could only access a computer at school (Long, 2008, p. 24). If the school’s technology was inadequate, in disrepair, in insufficient number for the class size, or if the teacher, for whatever reason, did not use the available technology, it deprived these students of any access to technology (Long, 2008).

The Problem in Context

While technology education and educational technology are entirely different, the two concepts are equally important in our educational system. According to Brown and Brown (2010), the field of technology education is a diverse area with a particular value for middle schools and high schools, as well as postsecondary institutions. Brown and Brown continued that the goal of technology education is to “produce students with a more conceptual understanding of technology and its place in society, who can thus grasp and evaluate new bits of technology that they might never have seen before” (p. 50). Technology education is also called technological literacy and is seen as both an aim and a potential outcome to technology education (Brown & Brown, 2010).
According to President Clinton's Call to Action for American Education in the 21st Century, technological literacy is defined as "computer skills and the ability to use computers and other technology to improve learning, productivity, and performance" (Johnson, 2004, p. 3).

Much debate occurred over the years on how to define technological literacy. Brown and Brown (2010) found that there was little agreement on the meaning of the terms technology or literacy, and did not develop a concrete definition of technological literacy. Gagel (1997) said that technological literacy was a fluid idea, and the effectiveness of technological literacy would be judged on its ability to change or mirror developing cultural traditions. Gagel concluded that 'if an ‘identity kit’ were created to detect technological literacy, it would include both technological and praxiological knowledge, which is a holistic understanding or technology’s ambience, and a technical adaptability engendered by inventive and resourceful thinking” (p. 21).

National organizations such as The National Academy of Engineering (NAE) and the National Research Council (NRC) have researched their explanation of technological literacy. Knowledge, critical thinking/decision making, and capabilities are dimensions of technological literacy. For example, the knowledge dimension includes the basic nature and fundamental concepts of technology. The critical thinking and decision-making dimension constitutes the understanding of technological benefits, risks, and trade-offs, and participation in discussions and debates. The capabilities dimension consists of being able to use the design process, troubleshoot a mechanical or technological problem, and effectively use technology (Brown & Brown, 2010). Staff at
the International Technology Education Association (ITEA) defined technological literacy as the ability to use, manage, evaluate, and understand technology, and stated, "Technological literacy is what every person needs in order to be an informed and contributing citizen for the world of today and tomorrow" (Brown & Brown, 2010, p. 50).

Roberts (cited in Pellegrino & Quellmalz, 2010) stated, "Preparing our students to be contributing citizens in our society with the help of technological literacy goes hand-in-hand with the effectiveness of educational technology" (para 1). Educational Technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological process and resources (Pellegrino & Quellmalz, 2010). The attributes of technological literacy cannot be identified without the pedagogical concepts of educational technology. Devereux (cited in Mishra, Koehler, & Kereluik, 2009) found the changes in education resulting from technological advances revolutionary and stated, "Today the world of the learner is almost unbounded, and the curriculum and methods of teaching must undergo a continuous appraisal. New subject matter and new devices for instruction are being scrutinized for their potential contributions to the learning process" (p. 48). Nagel (2008) said, "Technology is woefully inadequate in most classrooms despite the progress schools have made in bringing computers and the Internet to students and staff, and these groups need still greater access if technology is to become a reliable tool for teaching and learning" (para 13).
Teachers use little technology to carry instructional activities in the classroom, as well as assessment strategies using technology due to inadequate training/staff development activities provided to teachers. Educators reported inadequate resources in the area of education technology support, including inadequate professional development/training and IT support (Nagel, 2008). Educators also reported in the National Center for Education Statistics (NCES) that after teachers attended professional development activities and training provided by school staff responsible for technology support and/or integration, only 61% of teachers felt prepared to make effective use of educational technology for instruction (U.S. Department of Education, 2009).

Despite the disparities of schools who heavily use technology and those that do not, teachers are still challenged with the efforts of using various technologies in instruction, and using various assessment strategies using technology in the classroom (International Technology Education Association, 2006). While aspects of traditional assessments with students using of pencil and paper are guided toward a certain level of formative and summative evaluations, computer technologies are capable of capturing students’ responses that are evidence of a more precise level of assessment. To show this type of assessment data can be used for various purposes, such as assessment strategies and educational practices, and for student, teacher, and system-level accountability, Pellegrino (2010) stated:

The computer’s ability to capture a student inputs permits collecting evidence of processes such as problem-solving sequences and strategy use as reflected by information selected, numbers of attempts, approximation to solutions, and time
allocation. Such data can be combined with statistical and measurement algorithms to extract patterns associated with varying levels of expertise. (p. 123)

For whatever reasons, teachers use far less technology than is expected resulting in minimal technology exposure for students in public schools, which causes a halt and a downfall in students' academic success (Reiser, 2001). For the 45% of black students without access to the Internet or a computer except at school, this is a major concern that requires immediate investigation. Teachers are doing a grave disservice to these students. The communication among and between students and teachers are devalued without the use of technology intertwined with the curriculum (Goldin & Katz, 2007). Therefore, school communities are suffocating in our society due to the lack of technological support that is needed to assist with students’ academic success. This pilot study could discover the reason[s] for this grave oversight.

Problem Statement

W. E. B. Du Bois (2003) predicted the color line would continue to be a major problem in the 21st century; his prediction held true (Darling-Hammond, 1998). However, he could not have known that one of the major divisions would be so advanced that even the toys and fiction of his time had not foreseen its arrival. “One can predict the future by fiction and children’s toys” (Warren, 1980). Although in a very different way, the technological divide is one of the greatest we have seen and has the potential to keep those without technology skills back from any kind of profitable career or academic advancement. When writing of this issue, termed the digital divide, Mouza (2008) stated, “This disparity in home access to technology further limits the opportunities of
low-income minority students to practice essential learning skills and experience academic success” (p. 449).

The general problem is technology is not used on a regular basis by teachers in their lesson plans, in their teaching, in their expectations, and in their formative and summative assessments. The teachers have been sent to in-services, there are staff members in-house with the expertise to assist if training is the issue, the schools have technology budgets, the schools have computer labs with the appropriate number of computers, and all the teachers are highly qualified according to the mandates of the No Child Left behind Act of 2001. The specific problem is the reasons remain unknown why the teachers are not using the technology on a regular, consistent, daily basis in their lesson plans, in their teaching, in their expectations, and in their formative and summative assessments. To discover the reasons why this phenomenon is occurring, a group of highly qualified teachers from a metro Atlanta county has been interviewed in a focus group, or in a one-on-one interview for the qualitative part of the study (Creswell, 2007). For the quantitative part, a group of highly qualified teachers from a metro Atlanta county has completed a Likert survey from Survey Monkey and answered interview questions. An analysis of the results of each part of the study has been triangulated for reliability.

**Purpose of the Study**

The purpose of this mixed method research design is to understand why highly qualified teachers in metro Atlanta who teach minority, low income students and diversity in the use of technology in their lesson plans, assessments, instruction,
expectations from students, and in-class student time. The teachers' use of technology would include techniques for integrating higher-order thinking skills with the available classroom computers using tool-based applications (e.g., word processing, spreadsheets, graphs, and multimedia, databases, concept-mapping, and internet tools), graphic organizers, books on tape, liquid crystal display (LCD) projectors, I-Respond systems, Smart Boards, scanners, duplicating machines, podcasts, computerized grade book, and utilizing online resources for curriculum instruction, blogs, wikis, research, and implementing new technology skills acquired through staff development/in-service sessions into instruction. These teachers did attend mandatory in-service training where they were not only trained to use technology; they were cautioned they would be evaluated on their regular use of technology in their lessons. However, they are personally assessed on their lesson plans and assessment, but diversity in the types of technology used by teachers during instruction, and the various uses of assessment strategies applying to what extent the following variables can help explain the various forms of assessment strategies, including the use of different types of technology. The independent variables for this study include teacher qualification, individualized instructional strategies, group instructional strategies, in-services/staff development, class size, teacher experience, gender, age, and race.

For the purposes of this study, the researcher selected this public charter high school because it has a nurturing environment that embraces students' ability to learn. The participants for this study live in Atlanta, limiting the extrapolation of findings geographically and culturally to one area of the United States. The students at this school
believe in being successful in future endeavors beyond high school, have family
oriented values, and believe in giving back to the community. There are about 200 to 230
predominately African-American students and approximately 20 staff members. In the
metro Atlanta area, this is quite unusual. Even though this school was a high-risk school
as defined by the definitions adopted by this study, the size of the school and the staff
reduces the probability of generalization.

The teachers at this high school have been teaching on an average of 5 years,
about 5½ years with high-risk students, but only about two years at this particular high
school. Most teachers have Master’s degrees and are certified to teach in their field of
study. About 20 students are assigned to each of their classes.

This high school was created and designed as an innovative charter school,
established by the State Board of Education in August 2003. The public charter high
school has committed to upgrading Microsoft office programs that will allow teachers to
utilize video clips for instruction as well as participate in professional development
opportunities. The public charter high school has also committed to upgrading Microsoft
office programs for students as well. Teachers have collaboratively met with the media
specialist for assistance in enhancing and utilizing instructional and technological
programs.

**Research Questions**

Teddlie (2009) stated that in a sequential mixed method design, the research
questions are related to one another and may evolve as the study unfolds. The purpose of
this mixed method research study is to examine the effects of the technology in the
classroom. The research questions must align with the problem and purpose statement and with the research method and design. Creswell (2007a) stated that the “success of the research questions depend upon the extent to which the research questions “touch the lived experiences distinct from theoretical explanations” (p. 269). Creswell (2009) further stated that in a qualitative study, researchers should state research questions in the form of a central question that asks for an exploration of the central phenomenon or concept in the study. He continued that one or two central questions should be followed by no more than five to seven subquestions or investigative questions during the interview process. The following are the central research questions for the study:

RQ1: What are some of the factors that might influence the use of technology in the daily teaching and learning activities?

RQ2: How are teachers taking advantage of the technologies that are available to them?

RQ3: How, if at all, are technologies in its various forms, important to teacher’s pedagogy?

RQ4: How are individualized instructional technological activities an important part of a teachers strategy.

Significance of the Study

As the world continues to embrace the ever-changing technological aspects of our society, the methods used to teach students must also change. The impact of technology on the high school curriculum should have a positive effect on students’ attitudes and academic performance in the classroom (Gray, Thomas, & Lewis, 2010). Using
technology to assist in teaching students gives them, not only a clearer understanding of the subject matter, but also gives them the skill set to perform well in the classroom, which in turn, results in confidence and positive self-esteem (Gray, 2010). Therefore, when teachers use different strategies to present lessons, students use different methods to process the data whereby embracing a technologically-aged culture to ensure students a quality education.

The question is: How can we make sure students are acquiring the skills necessary to move up to the next level of their educational careers? In order to make sure technology is integrated with teaching and learning, we must hold ourselves and others accountable in a way that ensures, not only students, but also all stakeholders, that the technology is available, is in good working order, is in sufficient number for class size, and all lesson plans incorporate technology. Furthermore, we need a way to ensure teachers are using a diversity of technology elements in instruction, as well as testing students using technology to demonstrate mastery of technological skills. We, as teachers, must do this to ascertain if our students are learning the subject matter and are able to move on to the next level.

**Nature of the Study**

The research method used in this study is sequential explanatory mixed methods (Creswell, 2009). This means that the researcher used was a Survey Monkey survey as the first and quantitative phase of the study followed by semistructured interviews with teachers who agreed to participate in the study and met the criteria: They currently teach in a Metro Atlanta high school classified as high risk to a majority of students who are
high-risk black students. These teachers attended in-services for technology, they have computers for their classes, they have software and other equipment; yet they do not use the technology on a regular basis. The researcher collected the quantitative data first, and then he collected the qualitative data to help explain or elaborate upon the results of the quantitative data. This is called an explanatory sequential research design. In the current study, the quantitative data was collected first by means of the surveys. The researcher then selected six participants for one-on-one and focus group interviews. These interviews gave further details on the use or lack of use of technology in the classroom by these educators. Because the researcher only had access to approximately 20 participants, sequential explanatory mixed methods was applicable, as this should provide further validation study findings through the combination of quantitative and qualitative methods. The combination of these approaches should act as a checks and balances on the study findings.

For this study, the researcher used descriptive statistics to analyze and interpret the data collected from the surveys. Descriptive statistics are numerical and graphical methods used to summarize and bring forth data to the underlying information. This may include the mean, standard deviation, frequency, range, central tendency, and measure of variability. To assist in the calculations of descriptive statistics, the researcher used the Statistical Package for the Social Sciences (SPSS) 19.

Audiotaped and transcribed interviews were used to collect data. The audiotapes and interview transcriptions were studied collectively, so the interviews could be experienced again, allowing for rechecking and extending analysis of the communication.
Data collection and analysis proceeded simultaneously. Bazeley (2007) noted the coding process requires segmenting or labelling the data to form descriptions and themes connecting and interrelating themes to presenting data in a meaningful manner to make certain the discoveries bring value to readers and add knowledge to the community. A review of the collected data was conducted and each response read and reread to determine similar themes of the study. Data analysis involved sorting and organizing data into categories to identify any similarities. The process involved categorizing or coding the data in a coherent manner to allow greater discrimination and differentiation between data. The software programs considered for the data analysis included CDC EZ-Text, NVivo9, and Atlas.ti. After careful consideration on the appropriate data analysis program, NVivo9 was chosen as the appropriate tool to allow the researcher to “uncover subtle trends, and automated analysis features [that] let you sit up above your data and drill down into it. For example, search for an exact word or words that are similar in meaning to quickly test theories” (NVivo9, 2011). NVivo9 focuses on the description of the data, not on the production of descriptive statistics. Responses from the participants were clustered, coded, and common themes formulated. The data were interpreted to determine meaning and significance to the analysis. The analyst conducted a thorough review and confirmed that the use of the NVivo9 method was appropriate for the analysis of the participants’ open-ended interviews.

Summary

Chapter 1 presented the problem statement, the purpose statement, the research question, methodology, and the background of the study, Chapter 2 consists of a review
of the literature on technology, and the independent variables for this study: teacher qualification; individualized instructional strategies; group instructional strategies, inservices/staff development, class size, teacher experience, gender, age, and race. The topics addressed include history of education, history of special education, laws on technology, factors related to technology use in the classroom, and an elaboration of issues discussed in Chapter 1. In addition, the literature review contains an in depth history of *No Child Left Behind Act*. The literature review is structured to focus on issues discussed in Chapter 1.
CHAPTER II

REVIEW OF THE LITERATURE

Introduction

The purpose of this mixed method research design is to understand why highly qualified teachers in metro Atlanta who teach minority, low income students and diversity in the use of technology in their lesson plans, assessments, instruction, expectations from students, and in-class student time. The teachers’ use of technology would include techniques for integrating higher-order thinking skills with the available classroom computers using tool-based applications (e.g., word processing, spreadsheets, graphs, and multimedia, databases, concept-mapping, and internet tools), graphic organizers, books on tape, LCD projectors, I-Respond systems, Smart Boards, scanners, duplicating machines, podcasts, computerized grade book, and utilizing online resources for curriculum instruction, blogs, wikis, research, and implementing new technology skills acquired through staff development/in-service sessions into instruction. Chapter 2 consists of a review of the literature on the independent variables—teacher qualification, individualized instructional strategies, group instructional strategies, in-services/staff development, class size, teacher experience, gender, age, and race. The topics addressed include history of segregation, discrimination, tracking, digital divide, No Child Left Behind Act, Highly Qualified Teachers, technology, and the reasons, or lack thereof, why teachers use technology in the public schools.
Documentation

The search conducted utilized traditional electronic data sources. Search sources included online and university libraries and Google Scholar. The Clark Atlanta Library online sources consisted of ProQuest, EBSCOhost, ProQuest Digital Dissertations, and Sage Publications. Parameters consisted of words the independent variables, technology, discrimination, NCLB, digital divide, and other key terms. The literature review included peer-review articles, books, studies, and dissertation. Subtopics reviewed were a direct result of references to specific authors and studies.

History of Discrimination, Tracking, and the Digital Divide

According to Alvarez, Brown, Stonaker, and Shepard (2011), throughout the history of the United States, discrimination has managed to sully the efforts at a free and equal educational system. Whether it has manifested itself in the form of white hoods and crosses or in a more subtle manner, somehow the children of the poor, the children of color, the children with a handicap, and the children of the foreign-born are not rewarded with the same education as the upper-middle class white children (Irons, 2002; Rothberg, 2006). Possibly because of the range in economic levels in the United States, discrepancies in education are higher in this country than any other industrialized country (Rothberg, 2006). The United States has both a larger income gap between the rich and the poor, and has fewer support systems than most other industrialized countries (Blackburn 1997, as cited by Rothberg, 2006, para 13). In most countries, including the United States, the better schools are reserved for the wealthier citizens. Darling-Hammond (198) cautioned the readers not to forget the following:
Americans often forget that as late as the 1960s most African-American, Latino, and Native American students were educated in wholly segregated schools funded at rates many times lower than those serving whites and were excluded from many higher education institutions entirely. The end of legal segregation followed by efforts to equalize spending since 1970 has made a substantial difference for student achievement. On every major national test, including the National Assessment of Educational Progress, the gap in minority and white students' test scores narrowed substantially between 1970 and 1990, especially for elementary school students. On the Scholastic Aptitude Test, the scores of African-American students climbed 54 points between 1976 and 1994, while those of white students remained stable. (para 2)

When segregation was no longer legally viable, tracking was the option that replaced it. Archbald, Glutting, and Xiaoyu (2009) found that tracking occurs in about 80 to 85% of United States high schools. Many students are wrongly placed in lower tracks due to numerous moves to different schools, custodial residencies, or institutions. Many students are wrongly placed due to language barriers, childhood illnesses, years of poorly conducted home schooling, and numerous other factors.

The decision to place a student on a particular academic track is a daunting responsibility, which must be done with the assistance of professionals and on a child-by-child basis. Test scores, or parental demands as the only criteria should not determine a child's future. Archbald et al. (2009) found that decisions made in middle school or before typically determined a student’s high school and therefore college track
placements. They also found that black students were disproportionately represented in lower-level tracks of high school curriculum and therefore had less post-secondary options. Their findings indicated that track placement decisions were strongly determined by prior grades and test scores.

Darling-Hammond is the director of the Stanford University Center for Opportunity Policy in Education and founding director of the National Commission on Teaching and America’s Future (Stanford University, 2011). A former president of the American Educational Research Association, Dr. Darling-Hammond is a Stanford University Education Professor. Dr. Linda Darling-Hammond helped Barack Obama draft his educational plan when he was a presidential candidate, and advised him on education issues during the transition between Obama’s 2008 election and 2009 inauguration. Since then, she has opposed the standardized test-based school reform policies of the Obama administration. The following is an excerpt from one of her speeches, Save Our Schools, March 2011:

In fact, the U.S. educational system is one of the most unequal in the industrialized world, and students routinely receive dramatically different learning opportunities based on their social status. In contrast to European and Asian nations that fund schools centrally and equally, the wealthiest 10% of U.S. school districts spend nearly 10 times more than the poorest 10%, and spending ratios of 3 to 1 are common within states. Despite stark differences in funding, teacher quality, curriculum, and class sizes, the prevailing view is that if' students do not
achieve, it is their own fault. If we are ever to get beyond the problem of the color line, we must confront and address these inequalities. (Strauss, 2011, para 1).

**Falling Behind Academically**

While all minorities may start lower than their white peers in the early grades, Asian students may improve, and even surpass their white peers eventually; for black students . . . the progression is in the opposite direction. The gap widens between them and their white peers in subsequent years. (Ogbu, 1994, as cited by Irons, 2002, p. 306)

Weber (2010) stated that barely half of black and Latino students graduate from high school—blacks at 51% and Latinos at 55%, while their white peers graduate at 75%. It should be noted, this is what is known. Statistics are not kept for those students who drop out of school prior to entering the ninth grade. Hickman (n.d.) explained, “Middle school children are not able to drop out. If they are not attending school, they are considered truants and their parents subject to prosecution by the district attorney” (as cited in Off, para 6). (This statement, however, is erroneous; parents can and do simply tell authorities that their children are home schooled, for example.)

**Overrepresentation of Minorities in Special Education**

In Chicago in 1894 when Superintendent Howland did not know how to handle 3,500 wayward students, his recommendation was segregation in special classrooms or schools (Tyack, 1974). One way the United States attempts to manipulate test scores today is by an over-representation of minorities in special education. Phillips (2008),
Guiberson (2009), and Samuels (2004) discussed various reasons for this over-representation of minority students in special education. They stated test bias and language differences are a major cause of over-representation. Ethnic customs and attitudes are another reason for over-representation. The Education Equality Project (EEP, 2009) listed certain data: “By fourth grade, black and Latino students are on average nearly 3 years behind their white and Asian counterparts, and black and Latino students are two to three times more likely to have below basic skills in reading and math” (EEP, 2009). These researchers discussed the misuse of educators to place minority students in special education as a way to skew test score reports. If black and Hispanic students’ test scores are not included with the entire school population, Adequate Yearly Progress (AYP) may not be affected as much as if they were included. Phillips stated documentation exists that students with cultural or linguistic differences or minority children are over-represented in special education (Taylor, 1986, as cited by Phillips, 2008).

Phillips continued that over 20% of minority students live in poverty and “children who grow up in poverty are negatively impacted, in terms of learning, due to mental, health, and behavioral development” (para 20). The results of a study by Haifeng and Cowen (2009) found poverty, teacher turnover rates, and socioeconomic statuses were the biggest predictors of poor academic achievement.

The 2008 U.S. Census Bureau reported that 14 million children were living in poverty. Children living in poverty are typically two or three grades behind their peers by the time they reach the fourth grade (U.S. Department of Education, Reading

Babb (2009) used the U.S. Census Bureau predictions that by the year 2042, today’s minority population will be the majority population. Babb stated that in many U.S. communities today, “minorities make up the majority of the under-20 population” (para 10). In 2007, 12.4% of the population of the United States was immigrant or approximately 35.7 million people (Bornstein, Deater-Deckard, & Lansford, 2007). By the year 2030, that rate is expected to quadruple reaching up to 51% (U. S. Census Bureau, 2004). Lollock (2001) stated that nearly 14 million children or 1 in 5 children under 18 are immigrants or children of immigrant parents and are at a grave risk of poverty.

One societal factor greatly influencing the field of education is immigration. Education is evolving and educators are altering educative practices to ensure inclusion non-native students. The attempt to promote inclusion of non-native students within education was actualized with the federal Bilingual Education Act of 1968 (Lunenberg & Ornstein, 2004). The Act was established to promote the successful progression of a child’s academic pursuits by providing instruction in the language most suitable for the child (either English or the child’s native language) (Lunenberg & Ornstein, 2004). This Act was particularly important as the Hispanic population continued to grow (Garcia &
Bartlett, 2007). The Act was amended in 1988 and was a frontrunner to the English as a Second Language or ESOL taught in schools today. It was the first piece of federal legislation regarding minority language speakers.

Educators have also had to change their practices. Many teachers are required to take additional classes to gain skills that will ease the integration of non-native students in the classroom as well as develop or implement multicultural curriculums and programs within their pedagogy (Darling-Hammond & Berry, 2006). Immigration will definitely be a societal factor demanding the continual evolution of education (Riell, 2008).

The System

Every few years, legislation aimed at improving education for all comes before the people, the President, and Congress. Segregation, or Jim Crow schooling, started in Massachusetts in 1820 by black parents unhappy with the unfair schooling their children were receiving. This movement spread to several other northern and western states until the actual passage of the law (Irons, 2002). In 1896, *Plessey vs Ferguson* became a law and *separate but equal* paved the way for segregation (Tyack, 1974), but this did not affect the voting mandates established by the dominant group. One litmus test used to control voting was the ability to read (Alvarez, Brown, Stonaker, & Shepard, 2011). It was not until the Civil Rights Act of 1964 and the Voting Rights Act of 1965 that the citizenry abolished the Jim Crow Laws, and it was no longer legal to use reading as a means to keep all people in the United States from voting (Alvarez et al., 2011).

In 1954, *Brown v the Board of Education of Topeka* overturned separate but equal, and started the way for equal education for all citizens. In 1964, the Civil Rights

According to Jorgensen and Hoffman (2003), in 1981, the National Commission on Excellence in Education was chartered under the authority of 20 U.S.C. 1233a, to review the data on the quality of learning and teaching in the nation's schools, colleges, and universities. In April 1983, the completed report, *A Nation at Risk*, among other issues, stated of the nation's 17 year-old students, approximately 13% were functionally illiterate. The rate for minority youth could run as high as 40% who were functionally illiterate (Jorgensen & Hoffman, 2003). *A Nation at Risk* further found a decline in scores in mathematics, physics, and English as measured by the College Board’s Scholastic Aptitude Tests (SAT).

In addition, the data from reading assessments of 17 year-olds indicated almost one-half could not draw inferences from written materials, one-fifth could not write a persuasive essay, and two-thirds of 17-year-old students could not solve a multistep mathematical problem (Jorgensen & Hoffman, 2003; U.S. Department of Education, 1983).

After the release and subsequent media discussions of *A Nation at Risk*, passage of the Improving America's Schools Act (LASA) of 1994 reauthorized the Elementary and Secondary Education Act (ESEA) of 1965. ESEA and Title I, enacted by President
Lyndon Johnson, focused on low income areas and economically disadvantaged, low achieving students in those areas. IASA and the subsequent Goals 2000: Educate America Act, however, focused on all students, not just economically disadvantaged students. IASA and Goals 2000 required all states to provide and use content and performance standards, have assessments aligned to those standards, and develop an accountability system to identify non-performing schools (Jorgensen & Hoffman, 2003; U.S. Department of Education, 1996a).

Attempts since that publication and subsequent public outrage at reconciliation of the gaps in achievement between upper middle class American children, and children of minority, disability, or children from disadvantaged socioeconomic status have flourished. One such measure to reconcile this disparity was the Elementary and Secondary Education Act of 1965. This act later became renamed as the No Child Left Behind Act (NCLB) of 2001, signed by President George W. Bush (Sass, 2009; Wright & Wright, 2009). NCLB became one in a series of attempts to ensure all children have a free, equal, and significant opportunity to achieve their maximum potential.

No Child Left Behind Act

On January 8, 2002, President George W. Bush signed into law the No Child Left Behind Act of 2001 (NCLB), which reauthorized ESEA. As stated by Jorgensen and Hoffman, Rod Paige, President Bush’s U.S. Secretary of Education, stated the focus of NCLB “is to see every child in America—regardless of ethnicity, income, or background—achieve high standards” (Jorgensen & Hoffman, 2003, p. 6).
Definition of a Highly Qualified Teacher

Darling-Hammond and Berry (2006) defined a highly qualified teacher as having at least a bachelor’s degree, full state certification, passing state competency tests in the area of content they teach, and having a proven record of competency. Darling-Hammond and Berry explained, “NCLB requires all districts to notify the parents of any students in Title I schools who are assigned for four or more consecutive weeks to a teacher who is not highly qualified” (p. 16).

The problem with NCLB’s measure for all teachers to be highly qualified, according to Darling-Hammond and Berry, is each state has its own set of tests and requirements. These authors call for a national certification standard for teachers. Without national standards for teacher quality, these authors continued, the federal government has a “medieval system of teacher testing that has resulted in 50 separate fiefdoms across the country” (p. 19).

President Obama said in his speech to the Hispanic Chamber of Commerce, “From the moment students enter a school, the most important factor in their success is not the color of their skin or the income of their parents, it’s the person standing at the front of the classroom” (March 9, 2009 speech to the Hispanic Chamber of Commerce). According to the Alliance for Excellent Education (2010), across the United States each school day, nearly one thousand teachers leave teaching; 14% of new teachers leave by the end of their first year of teaching, one-third leave within three years, and nearly one-half of all new teachers leave teaching before their fifth year. The cost to replace the teachers who drop out is approximately $2.6 billion annually (Alliance for Excellent
According to a 2007 pilot study by the National Commission on Teaching and America’s Future, the teacher turnover rate was 16.8%, and in some areas, the teacher dropout rate was higher than the student dropout rate. The news was worse for the nation’s schools classified as high risk—those with a high minority population and high poverty rates (National Center for Education Statistics, 2008; Richardson, Alexander, & Castleberry, 2008). The U.S. Department of Education, 2008 National Commission on Teaching and America’s Future reported that almost one-third of new teachers left teaching within three years with an estimated annual cost of teacher turnover at $7 billion. The Alliance for Excellent Education (2010) reported that approximately 157,000 teachers leave teaching each year to pursue better working conditions whereby another 232,000 teachers transferred to schools with higher test scores in wealthier neighborhoods (2008).

Within five years of teaching, almost one-half of new teachers leave whereas it takes from three to six years for a new-hire to mature as a teacher and cultivate the expertise to assist students toward success (Haycock, 2006; Ingersoll, 2005; Murnane & Steele, 2007). When a qualified teacher leaves a high-risk teaching position, according to Smith and Smith (2006), an unqualified, overwhelmed, and under-prepared teacher typically takes the job. This new teacher soon leaves the district, and the teacher shortage in the area becomes cyclical. Vanderslice (2010) noted, “Low-performing, high minority schools rarely close the student achievement gap because they never close the teaching quality gap—they are constantly rebuilding their staff” (p. 251).
Hanushek, Kain, and Rivkin (2004) explained that much of the cause of teacher attrition is due to teachers migrating to other schools for better resources, student populations with higher scores, more professional opportunities, and schools with lower ratios of minority and poor students. Research indicates that schools that serve larger numbers of low-income, low achieving and/or minority students have a higher turnover rate of teachers than do wealthier, low-minority schools (Darling-Hammond, 2003; Hanushek et al., 2004, Ingersoll, 2003). Darling-Hammond and Luczak (2005) found that schools with a large percentage of minority students and high number of low-income students have high teacher attrition rates with difficulty attracting highly qualified teachers. Students at these schools face a revolving door of inexperienced teachers, which result in students not adequately prepared for the next step in their academic career. These students, in fact, often regress academically.

One of the mandates of NCLB is that all teachers are highly qualified; with the high teacher turn-over in schools with a large minority population, this is not always possible. Darling-Hammond (2007) noted that over 1 million students have teachers that are under-qualified and inexperienced. As a result, poor students and minority students are the students most likely to have inexperienced, under-qualified teachers (Darling-Hammond & Berry, 2006). Wealthier schools typically hire highly qualified teachers with more experience and teachers deemed top in their fields. According to Darling-Hammond (2007), new teachers and teachers on probations are forced to accept positions in inner-city, low-income schools with large minority student enrollment.
Smith and Gorard (2007) mentioned, *A Nation at Risk*, is a document the United States Government published over 20 years ago condemning the 'rising tide of mediocrity' that was eroding the American public school system. The authors of the report were particularly concerned that teachers were drawn disproportionately from the lowest quartile of graduating high school and college students, and that in certain shortage subjects, such as mathematics, science and English, teachers were simply not qualified to teach at all. The report mentions, according to the National Commission on Excellence in Education (1983), "if an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exist today, we might well have viewed it as an act of war" (Smith & Gorard, 2007, p. 192).

While this gave much attention to the United States government and educational advocates, the *No Child Left Behind (NCLB)* Act was implemented in 2002 to help rectify this problem. According to Smith and Gorard (2007), this piece of legislation linked government funding to strict improvement and accountability measures aimed at addressing concerns over teacher quality and increasing the number of highly qualified teachers in America's schools. Smith and Gorard also mentioned, the NCLB Act legislates for reform in the way teachers are trained and recruited, as this applies to teacher quality. The NCLB Act has two main objectives: The first is to ensure that every teacher is highly qualified in the subjects he or she teaches; the second is to reduce the barriers to becoming a teacher by retooling traditional teacher education programs and opening up alternative routes into the profession (U.S. Department of Education, 2004).

Smith and Gorard said:
The term ‘highly qualified’ the legislation stipulates that the teacher must have obtained ‘full state certification as a teacher (including certification obtained through alternative routes to certification) or passed the state teacher licensing examination, and hold a license to teach in such a state. (p. 193)

For new teachers employed after the start of the 2002–2003 academic year, this means that they must possess at least a relevant bachelor’s degree and, for elementary school teachers, must pass a state test in subject knowledge and teaching skills in all areas of the basic elementary school curriculum. New secondary school teachers must either pass a state academic test or must successfully complete, for each of their teaching areas, an academic major, graduate degree or coursework equivalent to an academic major (Darling-Hammond, 2007). Veteran teachers (those hired before the start of the 2002–2003 school year) must meet the same criteria as newly qualified teachers or must demonstrate competence in all of the subjects that they teach according to a High Objective Uniform State Standard Evaluation, or HOUSSE (U.S. Department of Education, 2002). Each state is free to develop their own HOUSSE criteria but must address teachers’ skills in both subject matter knowledge and teaching practice as well as provide coherent information about the teacher’s attainment of content knowledge in the subjects they teach (Centre on Education Policy, 2005).

Technology

The No Child Left Behind (NCLB) Act requires all students to become technologically literate by the end of the eighth grade (U. S. Department of Education, 2004). On January 7, 2005, as a way to help implement this directive, the U.S.
Department of Education officially released the National Education Technology Plan. The National Education Technology Plan is part of a long-range national strategy and guide for using technology effectively to improve student academic achievement (Wahl, n.d.).

The founders of NCLB understood the importance of technology in a modern world. It is predicted that technology will change the way people work, live, and even communicate. Technology is shrinking the work into a globalized workplace, whereas most employees live and work at home, but use technology to customize products and services for clients worldwide, communicate with suppliers, and collaborate on projects with overseas offices (Friedman, 2008). The varying perceptions about technology are important and understanding the multiple effects of technology on society is the key to determining how technology will continue to influence the world (Lee & Templeton, 2008).

**The Digital Divide**

Darling-Hammond (2006) posited that United States schools were found the most unequal by international assessments in the industrialized world in terms of technology spending, curriculum offering, teaching quality, and outcomes. As a result, low-income, minority students in the United States, quite often have limited access to intellectually challenging instruction and materials (Darling-Hammond, 2004). The Education Digest (2007) reported that schools bridge the digital divide when students are in school. Ninety-one percent of students in grades K through 12 use computers and approximately 60% use the Internet at school. Less than 40% of children living in poverty have access
to computers away from school compared to 88% of children from homes with an annual income above $75,000. Long (2008) cited Pew Research, “There are still 30 million American households that do not have a computer, mostly in low-income or rural communities” (p. 24). Long continued, “Of Hispanic children, 39% rely on schools to use computers. Of black children, the number swells to 45%, compared to just 11% of Asian and Pacific Islanders and 15% of white children” (p. 24). Rasiej (as cited in Long, 2008), an advisor for Congress on the Internet politics and policies, stated, "If we don't have universal [Internet] access, we're going to leave behind a generation that is not able to participate in the 21st century global economy" (p. 27). Mouza (2008) conducted a study involving the use of student laptops among low-income minority students. Qualitative data indicated that student laptop use produced academic gains in writing and mathematics, influenced positive student-to-teacher and appropriate student-to-student interactions, enhanced student motivation, and positively affected homework production.

The Positive Factors

Darling-Hammond (1998) stated that four factors consistently positively influenced student achievement. Students perform better, move up the academic ladder faster, and retain information longer under the situations:

- They are educated in a small school (300 to 500 students).
- where they are well know
- there are smaller class sizes (especially in elementary school)
- They receive a challenging curriculum.
- Their teachers are more highly qualified.
Addressing the first and third issues, The U.S. Department of Education (2009), Department of Vocational and Adult Education listed average class size of public high schools: “Approximately 70% of American high school students attend schools enrolling 1000 or more students, nearly 50% of high school students attend schools enrolling more than 1500 students. Some students attend high schools enrolling as many as 4,000—5,000 students” (para 1).

As per Georgia House Bill 1187, July 1, 2000, the following are mandated Georgia class size regulations (Georgia’s A Plus Education Reform Act of 2000, House Bill 1187):

- Kindergarten - 1:15
- Kindergarten Early Intervention Program - 1:11
- Grades 1-3 - 1:17
- Grades 1-3 Early Intervention Program - 1:11
- Grades 4-5 - 1:23
- Middle Grades Program - 1:23
- Middle School Program - 1:20
- High School - 1:23
- Vocational Labs - 1:20

However, on May 24, 2010, an emergency session of the Georgia legislature was held and the following pronouncement was delivered by State Board of Education Chair, Wanda Barrs:
School districts have been financially devastated by the economy so the State Board took action to help districts balance their budgets. Increasing class size is never ideal, but a slight increase will allow systems to significantly conserve resources while managing through these difficult times. (p. 6)

In 2012, class size is up to the discretion of the school principal and is limited by the physical size of the classroom. A high school class with 30 students is common; the number of functioning computers limits computer technology classes. The previous data concur with the findings of Darling-Hammond (1998):

Minority students are much less likely than white children to have any of these resources. In predominantly minority schools, which most students of color attend, schools are large (on average, more than twice as large as predominantly white schools and reaching 3,000 students or more in most cities); on average, class sizes are 15% larger overall (80% larger for non-special education classes); curriculum offerings and materials are lower in quality; and teachers are much less qualified in terms of levels of education, certification, and training in the fields they teach. And in integrated schools, as UCLA professor Jeannie Oakes described in the 1980s and Harvard professor Gary Orfield's research has recently confirmed, most minority students are segregated in lower-track classes with larger class sizes, less qualified teachers, and lower-quality curriculum. (para. 8)

Ladd (as cited in Darling-Hammond, 1998) found that the difference between high and low scoring school districts could be explained by the qualifications of the teachers. Elementary school students who had incompetent teachers for three year in
arrow scored almost 50 percentile points lower than their peers who were assigned to highly qualified for the same three years (Darling-Hammond, 1998). However, the new teachers who did not for whatever reason pass the required tests are typically assigned to high-minority, low-income schools. Highly qualified teachers and new teachers with prestigious qualifications are typically assigned to schools in wealthier, white neighborhoods (Darling-Hammond, 2007; The National Commission on Teaching and America's Future as cited in Darling-Hammond, 1998).

Teacher expertise and curriculum quality are interrelated, because a challenging curriculum requires an expert teacher. Research has found that both students and teachers are tracked: that is, the most expert teachers teach the most demanding courses to the most advantaged students, while lower-track students assigned to less able teachers receive lower-quality teaching and less demanding material. Assignment to tracks is also related to race: even when grades and test scores are comparable, black students are more likely to be assigned to lower-track, nonacademic classes. (para. 9)

Teacher Training in Classroom Technology

Research conducted by Ferdig (2006) claimed that technologies for teaching and learning must be pedagogically sound and part of a complex process that involves the people in the implementation of the innovation. Ferdig also provided evidence that technology innovations are successful in the implementation process, as well as implications of the importance of technological pedagogical content knowledge. In addition, Ferdig mentioned pedagogy as an innovation building block. According to
Ferdig (2001) Littlejohn and Stefani (1999), Salomon (1993, as cited in Ferdig, 2006), innovations must be steeped in academic content and practice. That is, tying the innovation to learning theories to create authentic and engaging activities for students. Moreover, innovation must contain authentic, interesting, and challenging academic content for students, as well as real world problems because they are interesting and meaningful to the students and thus engaging. Furthermore, children must be seduced into the world of learning and guided toward the intrinsic rewards that follow from self-initiated disciplined inquiry because if instruction is too easy for the student, they will lose interest; if it is too hard, they will become frustrated (Ferdig, 2006; Long, 2008).

In addition, the innovation must provide children with a sense of ownership. Sandford and Richardson (1997, as cited in Ferdig, 2006) stated that students must take a self-regulating role in the learning process where they understand that they are in control of their learning. What is more, an innovation steeped with good pedagogy should be filled with opportunities for active participation, collaboration, and social interaction. Also, active learning can be supported and enhanced with the use of technology (Ferdig, 2006; Mouza, 2008).

Ferdig (2006) stated that a good innovation process is the process of creation, implementation, and use by the innovator, educator, and student. Ferdig (2001) defined a good innovation in relationship to what it is, as well as, how it is implemented. Good innovations require opportunities for legitimate participation. Legitimate peripheral participation, a term coined by Lave and Wenger (1991), means offering chances to co-participate in the practices of the ambient community with the end goal being full
participation in that community. “Moving toward full participation in practice
involves not just a greater commitment of time, intensified effort, more and broader
responsibilities within the community, and more difficult and risky tasks, but, more
significantly, an increasing sense of identity as a master practitioner” (Lave & Wenger,
1991, p. 753). The goal of legitimate peripheral participation is to allow students to act
as practitioners in the practice that they are being acculturated into (Ferdig, 2006).

According to Li (2007), Pedretti et al. (1998) argued that as with any new
educational innovation, the impact of the changes that accompany the introduction of
technology on all the stakeholders needs to be considered. In a technology-enhanced
classroom, where teaching and learning may be dramatically changing, the voice of those
affected most must be heard (Lee & Templeton, 2008). Ferdig (2006) mentioned with
performance of sound innovations and pedagogy and people, technology innovations
were examined for what they were as well as how they were implemented. In other
words, if a teacher or educator wanted to assess a technology before its use, pedagogy
and personnel would be prerequisites for answering the question, “Is this a good
innovation?” At some level, an innovation can be judged as successful by meeting the
required pedagogical goals laid out in the design of the innovation (Nagel, 2008). Thus,
if a technology is created to increase math scores, we can use certain tools to measure
that goal. Ferdig (2006) discussed the three criteria for determining the success or the
performance of the innovation, which are appropriate uses of technologies, using
cognitive tools to assess learning outcomes, and using diverse methods for more
complete analysis.
Ferdig made the claim that appropriate uses of technologies are not inherently
good or bad. However, it is the pedagogy and personnel that determine the quality and
impact of the creation, implementation, and subsequent use. Nonetheless, there are times
when technologies may possess features that make them more or less conducive to
learning. At some level, this refers to the way we mediate with technology (Agostino,
1999) and the social relationships that we create with technology such as computers
(Ferdig, 2006).

According to Ferdig, if teachers or researchers tell you that they developed a
successful innovation, they are probably referring to the fact that it met some
aforementioned pedagogical goal as evidenced by a cognitive measure such as a
standardized test. This is a significant and important task if researchers are to provide
evidence that technology impacts learning. Unfortunately, surveys of major technology
and education journals suggest that few technology research studies include student-
learning outcomes (Jones & Paolucci, 1998).

There are two important points to consider regarding the assessment of the
cognitive outcomes of technology uses. The first relates to having a good innovation.
Pedagogical goals in a good innovation are more deeply defined by both the pedagogy
and dialogic relationships among the innovator, teacher, and students and can be assessed
more easily because it is more lucid. In other words, a well-planned project that has
pedagogy at its center and people to implement that pedagogy will have more obvious
and easily drawn goals because of that initial concern for pedagogy and opportunities for
legitimate participation (Organization for Economic Co-Operation and Development
However, technology is so new and exciting to many teachers that it is often put into the classroom devoid of any content-learning goals. It may be possible to measure other outcomes in such a situation, but it is not as simple to measure cognitive ones. Conversely, implementing an innovation with good pedagogy and people helps ensure goals that can be measured cognitively (Ferdig, 2006; OECD, 2010).

A second related point to consider is that measuring student-learning gains made with technology is a very difficult endeavor (Jones & Paolucci, 1998). Learning, and thus teaching, is flexible. Teachers often implement technology without much preparation or lead time to match this flexibility in teaching. Even in cases of research studies and experiments, many teachers do not want control groups. They do not want to split their students in half and only give the innovation to certain students. There are ways around this problem, but many have tried to solve it by comparing one classroom with another, making the assumption that they are sufficiently similar because they are in the same grade or school to merit a direct comparison. A more comprehensive approach would be to revisit the integration of the technology into the curriculum and plan studies to assess the cognitive and affective impact of those integrations (Ferdig, 2006; OECD, 2010).

Measuring cognitive gains is an important task, one that will help us understand more about the ways in which technology impacts learning. Ferdig mentioned the case of preplanned implementations and how researchers can ensure opportunities to measure cognitive growth by verifying the existence of good pedagogy and affordability for good personnel in their design. In the case of just-in-time innovations, researchers need to
revisit the integration to learn more about the content, context, and individuals that comprised that innovation (OECD, 2010). Providing a thick description of the pedagogy, academic content, and roles of the people involved offers the opportunity to undertake this revisit.

According to Ferdig (2006), measuring gains in the cognitive domain is a necessary and imperative task for our young field. However, we also need to ensure that the expansion of technology research encompasses questions related to other aspects of the students’ experiences (i.e., social and emotional). This is an essential component of technology research as affective gains, such as emotional and social growth often precede, and drive cognitive gains.

Studying changes such as social and emotive ones are important, because research is beginning to provide evidence that humans enter into social relationships with technology. Reeves and Nass (1996, as cited by Ferdig, 2006) have argued that ‘individuals’ interactions with computers, television, and new media are fundamentally social and natural, just like interactions in real life.

Matzen and Edmunds (2007) mentioned that proponents of computer-based technologies in the classroom have long argued that the use of technology can have a transformative power on teaching and learning. The use of technology in the classroom was supposed to promote more student-centered instruction and result in a shift from traditional instruction (often called "transmission") to more constructivist-compatible instruction. Recent research has thrown this entire proposal into doubt, arguing that teachers in fact use technology in ways that are consistent with their existing instructional
practices. Cuban, Kirkpatrick, and Beck (2001) found little support for the idea that technology encourages teachers to transform their instructional practices.

Matzen and Edmunds (2007) determined that the further a type of technology use was from existing practices, the less likely teachers were to implement it. It is possible that both sets of researchers are correct, that technology can be used both in ways that are consistent with teachers' existing practices and in ways that shift their practices.

According to Pierson (2001), teachers must understand how technology connects with both pedagogy and the content of the curriculum; a change in the instructional use of computers is dependent upon understanding the instructional practices needed to use technology while teaching the curriculum. When teachers are provided with technology professional development focusing primarily on technical skills, they may fall back on technology uses consistent with their existing instructional practices simply because they have not been provided with an alternative vision for the use of technology. It is possible, however, that when professional development presents technology within the context of student-centered instructional practices, teachers will be more likely to change their instructional practices with their use of technology. This shift to more student-centered instruction may occur initially only whenever technology is used, creating incongruence between instructional practices used with technology and those used without technology. Therefore, this study examines the relationship between a professional development program, teachers' instructional use of technology, and their broader instructional practices.
Matzen and Edmunds (2007) also stated that constructivism is a theory of knowing. It "challenges the assumption that meanings reside in words, actions, and objects, independently of an interpreter. Teachers and students are viewed as active meaning-makers who continually give contextually based meanings to each other’s' words and actions as they interact" (Cobb, 1988, p. 417). In much of the literature on technology use, constructivism has been operationalized in similar ways.

Matzen and Edmunds (2007) also mentioned a 10-year study of the Apple Classrooms of Tomorrow project found that technology changed teacher and student roles in the classroom as the students learned more and more rapidly about the technology. Out of necessity, teachers ended up in a more facilitative role. Sandholtz et al. (cited in Matzen and Edmunds, 2007), based on their Apple Classrooms of Tomorrow (ACOT) research, presented a model of instructional change containing the following five stages of technology implementation: entry, adoption, adaptation, appropriation, and invention.

Moreover, Matzen and Edmunds (2007) stated that the way in which teachers use technology is correlated with their instructional beliefs. Teachers who had more constructivist beliefs were more likely to use technology in more constructivist ways. Yet, the findings present a more complex picture than that, also suggesting that teachers can use technology in ways that may not be consistent with their other instructional practices.

Matzen and Edmunds (2007) mentioned the relationship between technology and constructivist practices are complex. In some situations, technology can actually promote
more constructivist compatible instruction. In other cases, it simply supports the existing instruction. Research suggests that the interaction may depend at least partly on the type of professional development received.

**Technology in High Schools**

Kress (2011) discussed the barriers to using technology at low income, public high schools in New York. Some of the reasons found were as follows:

- Insufficient facilities and financial resources continue to be common impediments to technology integration.
- Computers are more likely to be housed in computer labs as opposed to the classroom. Hardware and software are often in disrepair and/or outdated.
- Technology integration initiatives are often trumped by other pressing issues such as overcrowding, teacher and administrator turnover, insufficient Adequate Yearly Progress (AYP), contending with high drop-out rates, complying with mandated curriculum reforms, and school safety. (p. 16)

These “at-risk” markers, typically present in underfunded urban schools that serve predominantly lower income and minority students, are not found in schools in whiter and wealthier (often suburban) districts. They can and do have direct effects on whether and how technology is incorporated into teaching and learning, which continues to perpetuate a disparity between the educational experiences of urban students and their suburban peers.

Ruling and Overbaugh (2009) listed barriers teachers gave for not using technology in the classroom as time constraints (not enough time to learn how to use the
computers or the software), insufficient or broke, equipment, lack of leadership, and lack of technical support. Intrinsic barriers included teachers related a lack of faith in the worth of technology in the classroom, teachers’ lack of motivation toward change, teacher lack of confidence in their technological abilities.

Technology will transform the educational process and will allow for greater success in teaching and in student academic achievement. The innovators of our educational system, including teachers, must incorporate technology into the curricula. While conventional teaching methods are still vital to the educational system, technology has come into the educational rim causing a blend of traditional teaching and learning with addressing the educational needs and problems, such as, learning the tools and concepts of computer applications and other related technologies. Textbooks are becoming more of a supplemental resource for students because students are engaging in more active and hands-on activities associated with technology in the classroom. Students’ experiences in learning are more flexible and students are more acceptable to learn through simulation of real life practices. Therefore, in order for the educational system to improve, educators need to incorporate technology into the curriculum.

The Use of State-of-the-Art Technology

According to Blasik et al. (2004), stressed that technology serves as an accelerator of momentum. But, it is not implementation of any technology that moves an organization forward, but it is the application of carefully selected technology that is associated with the transformation from good to great. Furthermore, he states that it is the combination of various technological applications that has a significant impact, much larger than if one approach is applied alone.

McFatter is a school of choice and is part of a technical center serving both secondary and adult students. The school offers a four-year course of study that delivers both high rigor academic and technical instruction to high school students and infuses technology into various aspects of program operation. Instructional delivery emphasizes the use of technology that affords students access to virtual coursework, electronic textbooks, digital portfolios, and video-conferencing. McFatter's graduates are eligible to earn not only a high school diploma and acquire certification in one of over 20 technical fields, but also may acquire college credit leading to an Associate’s degree (Blasik et al., 2004).

Based on longitudinal data, McFatter high school students exhibit some of the highest levels of academic performance in the district and across Florida. This most recent year evidences McFatter as an "A" school per the Florida Accountability System and is only one of 12% of Florida schools reaching Adequate Yearly Progress as outlined in Florida's plan for No Child Left Behind federal legislation (Blasik et al., 2004).

According to Blasik et al., keeping with its commitment to the innovative use of technology in education, students access coursework through both teacher-directed
classroom instruction and the virtual classroom. Distance learning, where students enroll in the Broward Virtual High School for selected classes, and Computer Aided Instruction (CAI) courses are approaches common in the program. All McFatter students must enroll in at least one online learning course accessible in the high school learning lab prior to graduation. This requirement gives students exposure to an educational format that is increasingly common in postsecondary environments, and helps to develop further their skills as self-directed and responsible learners.

Blasik et al. (2004) stated that each academic program includes the use of state-of-the-art technology throughout all classes and curricular areas, alternative assessment and exhibitions, digital portfolios, and business and industry involvement. Beyond its unique mission, requirements, and structure, a number of additional features help to create McFatter's supportive environment and record of student achievement. Strategies and resources unique in the district for helping students to reach college-readiness and technical certification include:

- Focus on technology and computer access, including Internet, word processing, and presentation and database software in every class;
- Minimum of one computer for every four students in every class and in all subjects, with many classes having a computer for each student;
- Maximum class size of 25 students;
- A later start to the school day with classes beginning at 9:15 a.m. and ending at 4:19 p.m.;
• A full-service Media Center and a full-service media production lab, with computers, scanners, printers, CD-burners, laminators, video editing equipment, and duplicating machines, available to students before and after school, and throughout the school day;

• A computerized grade book system which allows each student and his/her parents to access, via a password-protected Internet site, the student's grades and attendance in all classes;

• A weekly newsletter generated by the Program Coordinator and emailed to all parents and students, highlighting events of the past week and important items for the coming week;

• A separate website for each teacher, with course expectations, assignments, and due dates listed and updated regularly for parents and students.

McFatter Technical High School represents the success of rigorous high school reform, a unique mission and focus, and the benefits of a small and personalized environment. Combining traditional high school coursework with technical certification programs allows students to move beyond the single goal of high school completion to one of secondary study, technical certification and college preparation. Instructional delivery affords students access to the best that technology offers through virtual coursework, electronic textbooks, digital portfolios, and video-conferencing. Standardized assessment measures and completion rates demonstrate that.

McFatter high school have students some of the highest levels of academic performance when compared to students from the district as well as from across Florida.
Further, McFatter's program strength has been recognized through designations including International Technology Education High School Program of the Year, Oracle, and CISCO academies, New Millennium High School, and an A grade from the Florida Department of Education (Blasik et al., 2004).

Fry and Gosky (2007) mentioned that because of the potential for technology-based interventions to offer effective ways to improve students' literacy skills and the "need for more and better research on education technology" (p. 127), an investigation determined how an electronic pop-up dictionary with middle school level definitions for every word in the text impacted student reading comprehension of social studies texts.

Fry and Gosky investigated how middle school students' comprehension was impacted by reading social studies texts online with a pop-up dictionary function for every word in the text. A quantitative counterbalance design was used to determine how 129 middle school students' reading comprehension test scores for the pop-up dictionary reading differed from test scores for reading hard-copy texts or an online text without the dictionary. The pop-up dictionary reading was shown to be a statistically effective method for improving student test scores.

The results of this study suggest that pop-up dictionaries provide a helpful intervention for increasing middle-level learners' reading comprehension in social studies. While it is unrealistic to expect a pop-up dictionary (or any one reading intervention) to provide all the remediation necessary to help struggling readers reach grade-level proficiency, the results of this study are promising enough to suggest that
pop-up dictionaries offer one path to improving reading comprehension (Fry & Gosky, 2007).

Future studies over a longer period that use standardized high-stakes state reading assessments to measure effectiveness are needed to demonstrate the long-term feasibility of pop-up dictionaries as an intervention for struggling readers. It may also be worthwhile to determine if pop-up dictionaries support improved reading comprehension at the elementary and high school levels as well as in additional content areas. Regular access to computer labs for reading will be an obstacle for some school districts because of financial, space, and logistical limitations. Therefore, future studies should investigate the use of pop-up dictionaries on hand-held computers because they are less expensive and require less maintenance and space compared to desk or lap top models. Swan, van t’Hooft, Kratcoski, and Unger (2005) found hand-held computer use helped increase student motivation and engagement in learning tasks for students in grades 3, 4, 6, and 7. Thus, future studies can also investigate whether merging pop-up dictionaries and hand-held computer technology increases student motivation and engagement in reading.

Because of the pressures of high-stakes standardized tests, the benefits of using reading interventions in social studies and other content areas where standardized assessment is not mandated are twofold. First, the importance of helping struggling readers improve their reading comprehension cannot be understated. Second, using non-tested content areas to help increase student reading comprehension increases the viability of these subjects that are worthwhile in their own right yet are in danger of being pushed out of the public school curriculum because of testing pressures (Tapscott, 2008).
The Need for More Technology Resources

Lovitt (2004) mentioned the greatest change in schools in the last two decades, without a doubt, has been the onset of technology within districts and campuses. While few would argue that institutions have not benefited from increased technology access, school systems have had to scramble to come up with the funds necessary to support and sustain the ever-changing aspects of technology implementation in public education. While locating funding for technology can be a challenge, financial support can often be found if a school district searches in both conventional and unconventional places (Lee & Templeton, 2008).

In addition, one of the most beneficial strategies that a school system can employ when trying to secure technology funding is to involve the community in its mission and goals. The Beaufort County School District in South Carolina was faced with a dilemma concerning school technology funding as the community had evolved into one with a large retirement population. This population defeated all attempts to secure technology funding through tax increases at each election. Beaufort's school enrollment was continuing to rise because of younger adults moving in for job availability in the growing services industry, so the district had to convince the older population of the need for additional technology funds (Lovitt, 2004).

Moreover, district officials decided that the best way to engage the retirement population was to show them firsthand what was taking place in the schools and how technology was a key factor in learning. Officials approached residents of one of the largest retirement communities in the area and asked them to volunteer in the schools.
This capitalized on their different areas of expertise while exposing them to the needs of the schools in which they were serving. It also brought about a dramatic change in attitude, which has led to Beaufort County approving two referendums for $120 million each during the last eight years (Brooks-Young, 2003). Clearly, if a district wants to secure funds from the surrounding community, its needs must be made known personally to different demographics of the community (Lovitt, 2004).

Another way to save available funds, if not secure them, is to involve the students in some of the technology support areas where a district might otherwise hire outside maintenance. Students can be valuable in helping to run network wiring and maintain school Web sites, among other facets of technology support and maintenance. Relying on students for technology support frees up funds, which might have been used for these services, to go toward more challenging goals such as computer hardware and software purchases and upgrades. This trend is catching on in many districts and should continue in order to maximize available free resources. It is also excellent peer assistance learning for students. Two goals are being met at once: students are helping keep technology costs down while learning valuable skills for the future (Lovitt, 2004).

The No Child Left Behind Act has implications in relation to technology funding, and school systems need to be aware of the new policy standards and guidelines to maximize eligibility for funding (U.S. Department of Education, 2004, 2011). Opportunities exist for both using and funding technology through different programs and requirements mandated by NCLB. An example of one such opportunity would be school-parent communication, which has more than 40 provisions in the act. In addition,
two training areas that are addressed in NCLB—paraprofessional training and state
teacher certification—can be positively affected by technology through the use of online
classes and staff development. These are only two of several ways that creative district
officials can use NCLB to show a need for increased technology funding (Lovitt, 2004).

Finally, school district technology officials need to use the resources they
proclaim. The Internet has a wealth of information on wise budgeting in relation to
school districts and technology (Mastropieri & Scruggs, 2010; Neito, 2005). One such
Web site, maintained by the Consortium for School Networking, is called "Taking TCO
to the Classroom" which has just about everything a technology coordinator needs to
make the most of the budgeting process, including a concise checklist for technology
budgeting. This is only one of many valuable resources that tech coordinators can access
to give their school districts the edge in obtaining and sustaining the funds necessary to
keep up with the ever-changing face of tomorrow's technology trends (Lovitt, 2004).

Cowan (2008) stated that educators attempting to integrate technology into their
teaching face a variety of challenges in today's classrooms. Education reforms that
emphasize high standards have yielded curricula that, in many instances, have become
standardized. In some situations, teachers use pacing guides that outline strict content-
delivery schedules and procedures for the given periods in the school day (Mastropieri &
Scruggs, 2010; Neito, 2005). Teachers in these situations do not have the freedom to
deviate from their curriculum guide for that day. Accountability measures and the
pressure to raise test scores have resulted in content being severely limited or eliminated
in areas such as art, music, science, and social studies to focus on improvement in math and reading (Geisert & Futrell, 2000).

In the midst of the current struggle to reform public education, technology is also at risk of not being used to its potential or of falling by the wayside (Lee & Templeton, 2008). Despite the fact that technology has been identified as critical to success in life in the 21st century, the same limitations that create challenges for art, music, social studies, and science teachers also create challenges for teachers who want to integrate technology effectively into their teaching (Cowan, 2008).

To understand what possibilities for innovation exist for curriculum development, it is necessary to determine what is possible within existing definitions of what constitutes teaching and curriculum (Tapscott, 2008). Public schools operate in the boundaries of federal education policy. These education policies involve school reform and have a history of cycling between emphasizing excellence, efficiency, and unity and emphasizing equity, empathy, and pluralism (Geisert & Futrell, 2000). There is a historical tendency to focus on certain of these ideals to the detriment of the others. Whatever federal reform efforts might focus on, that focus manifests itself in schools by shaping what constitutes teaching and curriculum (Cowan, 2008).

The current reform shaping teaching and curriculum is the No Child Left Behind Act (U.S. Department of Education, 2001). It is focused on excellence in schools. Strong accountability measures, initially focused heavily in the areas of math and reading, support this emphasis on excellence. The accountability measures of the No Child Left Behind Act are enforced through annual standardized tests in reading and math in grades
three through eight and grades ten through twelve. Schools face external pressures to make adequate yearly progress (AYP), with the ultimate responsibility to have 100% of students reach proficiency in reading or language arts and math by the 2013–14 academic year (U.S. Department of Education, 2005; Cowan, 2008).

Although excellence in teaching and learning is something that should be in the hearts and minds of anyone associated with education, it is necessary to have the financial resources to accomplish the mission to provide excellence in students’ education. The No Child Left Behind Act is widely believed to have been severely under-funded (Darling-Hammond, 2007). A reform so focused on excellence, in which schools are penalized for not making AYP and full funding is not provided, creates tension between making AYP and delivering a well-rounded curriculum. Without the financial support needed to succeed, many schools are so focused on accountability that the teacher’s role and the scope and nature of the curriculum have been reduced (Tapscott, 2008). In these cases, the curriculum is constituted not by a complete view of the standards for a given grade or subject area, but by the material for which students will be tested (Cowan, 2008).

The impact is not felt equally by all public schools. Issues of inequity in public education have long been identified (Darling-Hammond, 2007; Irons, 2002). In 1980, Anyon (cited in Cowan, 2008) found that the nature of what constituted knowledge varied greatly based on the socioeconomic level of the school, provided a seminal example of inequity in instruction. The poorer a school community, the more likely that learning was delivered through teacher examples, followed by independent skill and drill
practice (Cowan, 2008). Miller (2008) explained the financial inequity between the classes, "The dirty little secret of local control is the enormous tax advantage it confers on better-off Americans: communities with high property wealth can tax themselves at low rates and still generate far more dollars per pupil than poor communities" (p. 96). He continued that the "economically segregated communities" in today’s society produce financial inequities, even within the same district, as much as "thousands of dollars per pupil" (p. 96). Regarding Title I schools, he stated Title I had widened the financial gap even more than it was before Title I’s enactment. Monies are distributed according to how much the state is already spending. When the poorer schools start out with nothing, there is not much chance of securing the funds necessary to effect the needed changes to truly turn these schools (Miller, 2008).

The more affluent a school community, the more likely that group work took place, enrichment activities occurred, and students had control over learning. In focusing heavily on testing and schools making AYP, current reform efforts diminish the curriculum scope and teacher opportunities to conduct innovative practices in many schools. If Anyon’s work is as applicable today as it was in the early 1980s, the majority of schools with reduced teacher roles and reduced notions of curriculum are in poorer communities. This happens despite the fact that innovation and alternative methods may well be the best way to achieve long-term improvement for students in struggling schools (Cowan, 2008).

Originally, the central issue of technology integration was the widespread lack of resources to provide the necessary technical support and staff development. Now, there
is a greater challenge to technology integration. In previous years, technology integration was a choice for teachers. Those teachers who were excited about computer technology or saw its benefits for students had the freedom to experiment with it in the classroom (Bryant, & Seay, 1998). This may no longer be the case in struggling schools. An example of the control exerted over teachers’ work is the aforementioned pacing guide, instituted in many struggling schools to assure that teachers cover content in a certain way and order and by a certain date and time (Cowan, 2008).

A reduced notion of curriculum also creates a dilemma for technology-integration proponents who ascribe to the school of thought that the curriculum should drive the technology. This mantra was intended to prompt teachers to think in terms of curriculum first and to use the full range of teaching-strategy choices available to them, which formerly represented a wide array of strategies (Geisert & Futrell, 2000). However, if a teacher’s power to choose strategies is limited and the curriculum is reduced to individual work on basic skills, it follows that technology, being driven by a reduced curriculum, will not be used to its potential. If the educational technology community continues to focus on allowing curriculum to drive technology in schools, then those schools become sites in which broader views of curriculum can be advanced (Cowan, 2008).

The nature of knowledge and curriculum in a given school site is a central consideration in planning for lessons that incorporate technology (Geisert & Futrell, 2000). Understanding what needs to be taught, is allowed to be taught, and will be tested for provides the opportunity to think about a broader approach to curriculum and technology. Thinking about the best uses of technology offers an opportunity to explore
new ideas for lesson planning and to offer potential alternatives to limited definitions of curriculum (Cowan, 2008).

**Breakdown in the System**

Technological advances are increasing daily (Lee & Templeton, 2008). Lewis and Doorlag (2006) discussed reasons students often use a computer when they will not do classwork otherwise: a computer allows for individualization of instruction, it motivates students, it allows new types of learning, it gives students new ways of accomplishing old tasks, and it helps students with special needs bypass or compensate for disabilities. Allowing students to type on a computer allows them the freedom to work on assignments that are set up for their individual needs. A computer provides individual students with extra support, and gives them tools to help them become successful (Bryant & Seay, 1998). Numerous of software programs are available that can help one student on a particular task while another student focuses on a different task (Felix, 2008). Students are often excited about learning on computers because they can make learning exciting through the novelty of using a new machine or program. Finally, computers hide weaknesses such as illegible handwriting, poor spelling, and other deficits (Lewis & Doorlag, 2006; MacArthur, 2009; Mastropieri & Scruggs, 2010).

Lee and Templeton (2008) stated the vagueness of federal laws and state guidelines are sources of confusion for school administrators. They continued that funding is another major barrier. Questions arise on who funds the technology—state funds or federal funds? They stated the grants exist for funds, but the paperwork is confusing, and professionals are confused about which source of funding is applicable.
Lee and Templeton cautioned IEP committee members to work together to get assistive technology written precisely into the IEP. Once the IEP team writes AT into the IEP and finalizes the document, AT must be provided. They stated, however, the cost has resulted in some school administrators trying to keep IEP teams from writing assistive technology into the actual IEP.

On November 9, 2010, Education Secretary Duncan announced the latest National Education Technology Plan (U.S. Department of Education, 2011). This plan is part of a long-range national strategy and guide for using technology effectively to improve student academic achievement (Lee & Templeton, 2008). Lee and Templeton (2008) studied the students classified as mildly disabled, which they categorized students with learning disabilities. These researchers stated the students with mild disabilities benefited greatly from technology. They stated students with learning disabilities benefited from technology that helped with spelling, handwriting, memory, reading, organization, and even something as simple as a pencil grip. They cautioned teachers not to overlook anything from the very complex and expensive to the very simple and inexpensive. They reminded professionals to work as a team with occupational therapists, physical therapists, assistive technologists assisting the teacher, and the teacher compiling data to help the therapists all for the betterment of the student (Lee & Templeton, 2008). They stated that this all too often does not occur.

For parents and teachers, the research on technologies and their usefulness is limiting. Smith and Okolo (2010) stated, "Experts suggest it is a combination of the innovation of the technology and its constant change, a lack of research, cost associated
to research, the 'newness' of educational technology, and limitations in research methodology and related components" (p. 258). Technology is evolving daily (Friedman, 2008), which makes it crucial for school systems to keep pace. Professionals must give students an equal opportunity within the classroom (Lee & Templeton, 2008).

**Chapter Conclusion**

The purpose of this chapter was to focus on the literature pertaining to technology in the schools, the use or lack thereof, the *No Child Left Behind Act* and Highly Qualified Teachers. The research started with a historical perspective, which examined the history of education, segregation, discrimination, tracking, and the digital divide. This information in this chapter presented an in-depth exploration of the relevant literature pertaining to his study, which includes teachers' reports of reasons for not using technology in the classroom. Such research provides a solid background of the need for this study.
CHAPTER III
THEORETICAL FRAMEWORK

Introduction

The objective of the current mixed method research study is to explore the lived experiences of veteran teachers at a public high school, and try to understand their theories on why teachers are or are not using technologies on a regular basis. The problem statement for the study is as follows: The reasons remain unknown why the teachers are not using the technology on a regular, consistent, daily basis in their lesson plans, in their teaching, in their expectations, and in their formative and summative assessments. The theories and models that guided the research study included Maslow’s (1954) hierarchy of needs, theory of motivation, theory of perception, and theory of self-efficacy. Such theories provided the foundation of the theoretical framework for this study and are of value to teacher education programs and teacher development models.

Maslow’s Hierarchy of Needs

The various stages of Abraham Maslow’s hierarchy of needs describe the theory of motivational behavior (Maslow, 1954). According to Maslow’s theory, the basic needs are necessary before individuals can concern themselves with the higher-level needs. When applying the Maslow model to this study, job satisfaction and student success are major concerns for teachers. According to Wieck (2007), the highest-level
needs are reached when an individual believes his or her actions and the actions of others assist him or her in achieving their ultimate potential. The highest level, self-actualization, provides structures in the workforce to stimulate shared decision-making, opportunities for growth, and encouraging creativity (Wieck, 2007).

Before a person can concern him or herself with climbing the hierarchy, she (for this argument) must satisfy the needs of all the prior levels. If at any time, the basic needs are lacking, the higher needs are of no consequence. The first level—food, water, shelter—must be met before safety becomes an issue, and then safety becomes the priority. Growth is stunted when an individual remains frustrated because of a need for technology especially when the necessary technology is available, but not available due to funding, lack of staff training, paperwork not completed, or grants not applied for (Lee & Templeton, 2008).

Theory of Motivation

Berl, Williamson, and Powell (1984) explained how the application of Maslow's Hierarchy of Need theory to describe arrangements for rewarding sales personnel equates to other people in other situations. Whereas sales personnel have been used to show how people need structure, which translates to motivation to sell; students need structure to foster motivation to succeed academically. Cohen and Dennick (2009) concurred in a later study. All employees and students need structure to summons motivation. Berl et al. (1984) explained Maslow's Hierarchy of Need as a general theory of motivation:

Maslow theorizes that people have five classifications of needs which act as motivators. These classifications are: physiological needs, safety and security
needs, social and belongingness needs, ego, status, and self-esteem needs, and self-actualization needs. Between 1966 and 1973, ten factor-analytic studies attempted to test Maslow's need classification scheme, and none of the studies showed all of Maslow's need categories as independent factors. Maslow has also hypothesized a gratification/activation proposition. Once a need has been at least relatively satisfied, the need submerges and permits the next level of need to become activated. (p. 33)

**Theory of Perception**

The theory of self-perception posits, “People sometimes infer their attributes from observing their own behaviors, much like similar inferences an outsider might make. These changes in perceived attributes are then likely to steer future behaviors that are consistent with these changes” (Goldstein & Cialdini, 2007, p. 402). In the self-perception theory, individuals attribute the cause of their attitudes and relate it to their own behaviors and attitudes. The theory of self-perception contends individuals are responsible for driving their own behaviors (Patrick, Ryan, & Kaplan, 2007). Perception theory is beneficial in explaining how children with poor self-image or poor self-worth blame themselves for their life station.

**Theory of Self-Efficacy**

An individual’s self-efficacy develops due to his or her emotional, developmental, or motivational processes, or due to the work and social environments (Bandura, 1977). Bandura posited individuals construct their self-efficacy beliefs based on the experiences of others in action. When a teacher is worried about students not having adequate
technology in his or her classes to complete their neither assignments, or when minority or low-income students do not have access to technology away from school to study or complete assignments; this teacher internalizes these feelings and blame him or herself for their students' failures. If the school does not make adequate yearly progress (AYP), the teacher then further internalizes this self-blame and feels he or she is responsible for students' lack of progress or even drop-out rate.

Teachers are well trained and well aware of the importance of technology and how crucial it is for students to have up-to-date technology at the disposal in order to succeed in the global society. When teachers have outdated, and a scarcity of technology, the teacher often blames them and becomes discouraged, become frustrated, and this often leads to depression. The current research study draws on the self-efficacy theory as its germinal framework. Figure 2 shows the stair steps of need based on Maslow's Hierarchy of Need

![Figure 2: Stair Steps of Need Based on Maslow's Hierarchy of Needs](image-url)
The researcher has proposed the following theory, as it relates to this study:

The teachers’ use technology in classroom instruction as was well as the teachers’ use of assessment strategies by means of technology is the self-development of teachers fulfilling the need to ensure students’ academic success. If teachers’ basic needs are met, in levels one through four of Maslow’s Need Hierarchy Theory, then teachers can obtain the fifth level in the hierarchy, which is self-actualization or self-fulfillment.

In addition, teachers must believe and have high expectations that students will be successful in the classroom. Teachers must be able to make decisions about their own behavior and attitude toward the use of technology in assessment and instructional strategies even if teachers expect to be recognized or rewarded because of thriving outcomes of students’ performances in the classroom. Instrumentality is high when teachers know they will be rewarded for their performance. Therefore, the attractiveness of a reward is appealing to teachers. Students who show great strides to academic achievement is another means of a reward to teachers, which allows teachers to reach the self-actualization level of Maslow’s Hierarchy of Needs.

Motivation to behave or act in a certain way is greatest when the individual believes that he or she has the ability to perform at the high expectancy level, or that their behavior will lead to anticipated outcomes and rewards (high instrumentality), or the outcomes have positive personal values (high valence). Teachers may approach the use of technology in their instruction strategies as an extrinsic motivator, until he or she start learning skills that are consumed by their curiosity to learn more, and to see the result of students’ academic accomplishments. Technology is the catalyst for teachers to go from
extrinsic motivational factors to intrinsic motivational factors, because once teachers have an interest in using technology, their motivation becomes a natural tendency. And, while the reward is gratifying, it is now just as important to learn and use technology in the classroom because the tasks are self-motivated and self-fulfilling. Teachers are willing to seek and accept challenges and exercise abilities in order to achieve the goal of seeing students thrive in the classroom.

**Definition of Variables**

For this study, The Teachers' use of Technology is defined as the extent to which teachers effectively integrate technology in the classroom during instruction. This would include techniques for integrating higher-order thinking skills with the available classroom computers using tool-based applications (e.g., word processing, spreadsheets, graphs, and multimedia, databases, concept-mapping, and internet tools), graphic organizers, books on tape, LCD projectors, I-Respond systems, Smart Boards, scanners, duplicating machines, podcasts, computerized grade book, and utilizing online resources for curriculum instruction, blogs, wikis, research, and implementing new technology skills acquired through staff development/in-service sessions into instruction.

**Research Questions**

Teddlie (2009) stated that in a sequential mixed method design, the research questions are related on one another and may evolve as the study unfolds. The following research questions drive the study:

**RQ1:** What are some of the factors that might influence the use of technology in the daily teaching and learning activities?
RQ2: How are teachers taking advantage of the technologies that are available to them?

RQ3: How, if at all, are technologies in its various forms, important to teacher's pedagogy?

RQ4: How are individualized instructional technological activities an important part of a teachers strategy.

**Dependent and Independent Variables**

A research study has two different types of variables; dependent and independent. The independent variable is the variable that is manipulated by the researcher. The independent variable is something that is hypothesized to influence the dependent variable. The researcher determines for the participant what level or condition of the independent variable that the participant in the experiment receives. The dependent variable is the variable that is simply measured by the researcher. It is the variable that reflects the influence of the independent variable. For the current mixed method study, the dependent variables are:

- The diversity in the types of technology used by teachers during instruction and;
- The various uses of assessment strategies applying technology.

For the current mixed method study, the independent variables are:

- Teacher Qualification
- Individualized Instructional Strategies
- Group Instructional Strategies
• In-Services/Staff Development
• Class Size
• Teacher Experience
• Gender
• Age
• Race

The Teachers’ use of Assessment Strategies using Technology is the extent to which teachers employ strategies using technology to assess students’ knowledge of the subject material. For example, teachers using the Internet, Smart Boards, Blogs, I-Respond System, Wikis, and/or Blackboard Online in order to assess students.

**Independent Variables**

For this study, **Teacher Qualification** means if the teacher holds a bachelor’s degree (T-4 certification), a master’s degree (T-5 certification), a specialist’s degree (T-6 certification), or a doctoral degree (T-7 certification).

**Individualized Instructional Strategies** can be defined by the extent to which there is one-on-one instruction with the student, such as a one minute individualize writing or typing exercise, an individualized computer and internet project, mini-quizzes, and single muddiest point exercises. In addition, follow-through of remediation and enrichment activities are also defined as individualized instructional strategies.

**Group Instructional Strategies** can be defined by the extent to which students are put into groups for various activities. For example, a pre-instructional activity, such as a ‘hook’, KWL strategy (Know, Want to know, and Learn), multimedia or lecture
presentation, and the Inquiry strategy. Other activities may include, class discussions, questioning strategies, one-minute-writing exercises, think/pair/share exercises, assessments, media and technology, and review game activities.

**In-Services/Staff Development** is defined by the extent to which the teachers engage in in-service/staff development activities in the school in the past three years, such as Differentiated Instruction, Blackboard Training, Data Analysis, I-Respond Training, Effective Strategies of Co-Teaching, GPS (Georgia Performance Standards) Training, Math I and II Training, Standards Based Grading, Curriculum and Development Training, Assessment and Grading, Interactive Classroom, Understanding the PAI (Performance Assessment Instrument), and Technology in the Classroom Training sessions.

**Class Size** is defined by the number of students in each class.

**Teacher Experience** is defined by how many years a teacher has been teaching in his or her subject area. Teaching certification?

For this study, **Gender** means an individual, either male or female who is a teacher.

For this study, **Race** means the race and ethnicity/background of a teacher (categories include Asian, American Indian, Hispanic, black, white, or other).

**Limitations of the Study**

Creswell (2009) described study limitations as the potential weakness or problems affecting the internal validity of a study. A limitation in this non-experimental research design was a weakness in the ability to determine causal relationships (Polit, & Beck,
This study presents several limitations. One limitation of this study was the ability of the researcher to bracket existing assumptions regarding teachers not using technology in their classrooms. Even though 20 was a good representative sample for the quantitative part and six for the qualitative part, results could have been better improved and validated by using more participants. The participants for this study live in Atlanta, limiting the extrapolation of findings geographically and culturally to one area of the United States. The school in this study was a small charter high school with only approximately 200 to 230 students and approximately 20 staff members. In the metro Atlanta area, this is quite unusual. Even though this school was a high-risk school as defined by the definitions adopted by this study, the size of the school and the staff reduces the probability of generalization. In order to respond to some question in the survey, the researcher asked participants to recall their previous experience in as much detail as possible, and this diminished the reliability of their responses if they were unable to recall all details. This could also be a threat to internal validity. Internal validity refers to the question whether, or not the study investigated what it claims to investigate. The teachers from the population sample might have felt that they revealed strategic information during the interview process, and might not have accurately supply data for this study. These measures would have placed the anonymity of the participants to a highest priority.
The purpose of this mixed method research design is to understand why highly qualified teachers in metro Atlanta who teach minority, low income students and diversity in the use of technology in their lesson plans, assessments, instruction, expectations from students, and in-class student time. The teachers’ use of technology would include techniques for integrating higher-order thinking skills with the available classroom computers using tool-based applications (e.g., word processing, spreadsheets, graphs, and multimedia, databases, concept-mapping, and internet tools), graphic organizers, books on tape, LCD projectors, I-Respond systems, Smart Boards, scanners, duplicating machines, podcasts, computerized grade book, and utilizing online resources for curriculum instruction, blogs, wikis, research, and implementing new technology skills acquired through staff development/in-service sessions into instruction.

**Dependent Variables**
- The teacher use of technology and
- The teacher use of assessment strategies using technology

**Independent Variables**
- Teacher Qualification
- Individualized Instructional Strategies
- Group Instructional Strategies
- In-Services/Staff Development
- Class Size
- Teacher Experience
- Gender
- Age
- Race

**Assumptions**
- Technology enhances students learning
- Technology motivates students to learn the subject matter
- Technology increases the interaction among students and the communication between students and teachers
- Technology increases students’ academic success
- Technology increases students’ self-Efficacy

*Figure 3. Relationship of the Variables*
CHAPTER IV

RESEARCH METHODOLOGY

Research Design

The purpose of this mixed method research design was to understand why highly qualified teachers in metro Atlanta who teach minority, low income students and diversity in the use of technology in their lesson plans, assessments, instruction, expectations from students, and in-class student time. This study used two methods in phases that were integrated during the discussion of the outcomes of the whole study for each strengths, but also had limitations (Douglas, 2009). Chapters 1 and 2 provided the overview of the research study and literature review and Chapter 3 presented the theoretical framework, and independent and dependent variables.

Included in this chapter is an outline of the research method and design appropriateness. Discussion on the study's population, sampling frame, geographic location, informed consent, confidentiality, and the procedures for data collection procedures and rationale are included in this chapter. The chapter also includes a description of the two instruments that will collect data and an explanation of the strategy of using the two instruments. A discussion of the validity and reliability of the instrument and the techniques used to avoid internal and external threats to validity. The conclusion of Chapter 3 summarizes these concepts and introduces Chapter 4.
Tashakkori and Teddlie (1998) highlighted the importance of choosing an approach, as well as variables and units of analysis, which are most appropriate for finding an answer to the research questions. Both numerical and text data, collected sequentially or concurrently, can help better understand the research problem. This study used a sequential design. There are three types of sequential designs: sequential explanatory, sequential exploratory, and sequential transformative. A sequential explanatory design was deemed applicable for this study. In these designs, quantitative data are collected and analyzed, followed by qualitative data (Tashakkori and Teddlie, 1998).

Participants were told to issue an identification number (ID) in lieu of a name. When the statistician was finished, all survey data were complied, and sent to the researcher. The report displayed descriptive statistics, which revealed the extent educators availed themselves of technology in their classrooms. Once the researcher documented all data from the report, he selected participants for the qualitative part of the study, and interviewed selected participants for the qualitative part of the study.

Research is purposeful when the selection and the systematic application of a method deliver discoveries that are important, accessible, and useful (Creswell 2009). The nature and type of the research question dictates the purpose, the inductive or deductive theoretical drive, and design, sampling, and data collection options and approaches to analysis and interpretation drive choosing a research design to conduct a study. A weakness in qualitative research is that small sample sizes cannot generalize the results to large groups of people.
The research method used in this study is sequential explanatory mixed methods (Creswell, 2009). The researcher used a survey from Survey Monkey as the first and quantitative phase of the study followed by semi-structured interviews with high school teachers as the second and qualitative phase of the study. Through use of sequential explanatory mixed methods, the researcher gathered data through the quantitative and qualitative approach. The qualitative approach uses general selection of a sample, which is not random and the small sample used cannot receive application toward the larger population (Galvan, 2006). Instruments, used in the qualitative approach, are semi-structured interviews, and open-ended questions without specific answers from which the participants can choose. The researcher's rationale for selecting this methodology was because of sample size was small. Once teachers completed the surveys, the researcher interviewed six teachers based on the manner in which they answered the survey questions.

The combination of the quantitative and the qualitative approaches acted as a checks and balances on study findings as well. The results of the research questions contributed to the area of research on technology in the classroom. Creswell (2009) stated that the sequential explanatory mixed methods approach is well known, straightforward, and has clear steps, as to what the researcher will execute in the study.

Ultimately, the sequential explanatory mixed methods approach provided further validation to study findings through the combination of quantitative and qualitative methods, despite the limitation of teacher participants. In essence, these approaches complemented one another and acted as a check and balance to the researcher's limitation.
related to study participants. Collins, Onwuegbuzie, and Jiao (2010) proposed eight
distinct steps to the mixed methods research process model: (a) Determine the research
question, (b) Determine the appropriateness of using a mixed research design, (c) Make
the selection between mixed-method and mixed-model design, (d) Collect data, (e)
Analyze data, (f) Interpret data, (g) Legitimize the data, and (h) Draw conclusions and
write the final report (p. 21). This study followed these eight steps as posited by Collins,
Onwuegbuzie, and Jiao.

**Research Methodology**

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approach, as well as variables and units of analysis, which are most appropriate for
finding an answer to the research questions. Both numerical and text data, collected
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Alignment of Problem, Purpose, and Research Questions

In the quantitative phase of the study, data collection and analysis proceed simultaneously. A report process from Survey Monkey once the survey timeframe was complete was collected that reflected participant’s personal perspectives in verbal or textual manner. Douglas (2008) noted the coding process requires segmenting or labeling the data to form descriptions and themes connecting and interrelating themes to presenting data in a meaningful manner to make certain the discoveries bring value to readers and add knowledge to the community. The advantage of a survey questionnaire, accessed through the Survey Monkey Website URL, is that participants’ responses were automatically stored in a database and could be easily transformed into numeric data in the Statistical Package for the Social Sciences (SPSS) formats.

To perform the purpose within the study, the research questions align with the problem and purpose statement and with the research method and design (see Figure 4).
The general problem is teachers do not use technology on a regular basis in their lesson plans, in their teaching, in their expectations, and in their formative and summative assessments.

The specific problem is the reasons remain unknown why the teachers are not using the technology on a regular, consistent, daily basis in their lesson plans, in their teaching, in their expectations, and in their formative and summative assessments.

The purpose of this mixed method research design is to understand why highly qualified teachers in metro Atlanta who teach minority, low income students and diversity in the use of technology in their lesson plans, assessments, instruction, expectations from students, and in-class student time.

**RQ1:** What are some of the factors that might influence the use of technology in the daily teaching and learning activities?

**RQ2:** How are teachers taking advantage of the technologies that are available to them?

**RQ3:** How, if at all, are technologies in its various forms, important to teacher’s pedagogy?

**RQ4:** How are individualized instructional technological activities an important part of a teachers strategy.

*Figure 4. Alignment of Problem, Purpose, and Research Questions*
Population

In March 2009, the U.S. Census Bureau released the 2008 population estimate for the Atlanta metropolitan area at 5,376,285 making Atlanta the eighth largest metro area in the nation. Since 2000, metro Atlanta grew by over 1.1 million people, a 27% increase. According to the Atlanta Chamber of Commerce, "The Atlanta-Sandy Springs-Marietta, Georgia metropolitan statistical area (MSA), is defined as a 28-county region by the Office of Management and Budget of the White House. The Atlanta MSA has 26 public school systems—20 that are county systems and six independent city systems. Only six school systems were considered for this study (see Figure 4). These systems were chosen for consideration because of their high percentage of minority students and the high percentage of students on free and reduced lunch (see Figure 4). Atlanta, the heart of metropolitan area, is located in the center of the area chosen and was deemed the "target area." The researcher was successful in finding a charter high school near the center of the map in Figure 5, which for reasons of confidentiality, will remain unknown.

Figure 5. Metropolitan Atlanta School Districts
Starting at the top and going clockwise on Figure 4, the six school districts are:

(a) Fulton County School District, (b) Gwinnett County School District, (c) DeKalb County School District, (d) Atlanta Public School District, (e) Cobb County School District, and (f) Marietta City School District. Table 1 shows the demographics of school districts in metropolitan Atlanta.

Table 1

**Demographics of School Districts in Metropolitan Atlanta**

<table>
<thead>
<tr>
<th>Districts</th>
<th>Median Household Income – Georgia ($44,644)</th>
<th>Number of Schools</th>
<th>Number of Free/Reduced Lunch Students</th>
<th>Percentage of White Students</th>
<th>Number of Students</th>
<th>Number of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fulton</td>
<td>$86,980</td>
<td>94</td>
<td>44.7%</td>
<td>36%</td>
<td>86,225</td>
<td>6,099</td>
</tr>
<tr>
<td>Gwinnett</td>
<td>$65,301</td>
<td>107</td>
<td>53.7%</td>
<td>37%</td>
<td>155,343</td>
<td>10,683</td>
</tr>
<tr>
<td>DeKalb</td>
<td>$50,165</td>
<td>144</td>
<td>71.1%</td>
<td>10%</td>
<td>99,695</td>
<td>6,809</td>
</tr>
<tr>
<td>Atlanta</td>
<td>$45,991</td>
<td>106</td>
<td>74.8%</td>
<td>9%</td>
<td>49,921</td>
<td>3,711</td>
</tr>
<tr>
<td>Cobb</td>
<td>$64,084</td>
<td>110</td>
<td>44.0%</td>
<td>47%</td>
<td>107,214</td>
<td>7,946</td>
</tr>
<tr>
<td>Marietta</td>
<td>$63,654</td>
<td>14</td>
<td>65.0%</td>
<td>20%</td>
<td>7,980</td>
<td>622</td>
</tr>
</tbody>
</table>

**Charter Schools in Georgia**

Charter schools in Georgia are public schools that receive public funding and as such, cannot charge tuition, must be secular, must use open enrollment, and must serve all student populations, including students with disabilities. A charter school is not a magnet or a theme school and therefore does not have any type of litmus or benchmark for admittance. As a public school, a charter school must follow all federal and state
mandates; however, a charter school’s administration follows the tenets of a charter or contract “with an authorizer, such as the state and local boards of education or the Georgia Charter Schools Commission. Charter schools receive flexibility from certain state and local rules in exchange for a higher degree of accountability for raising student achievement” (Georgia Charter Schools, 2012, para. 1).

In June 2008, Marietta City Schools became one of Georgia’s first Charter Systems and included ten schools: six K-5 elementary schools, one sixth grade academy, one middle school, one high school, and one grades 3-5 elementary magnet school. Marietta City Schools also had one conversion charter school (Marietta City Schools, 2012). Spring semester 2012, Georgia had 119 charter schools with 88 start-up charter schools and 31 conversion charter schools. Moreover, there were 14 charter systems in Georgia, which included 107 schools. In the area defined as the target area for this study, at the time of this study, 50 charter schools were active; one charter, high-risk high school from one of the six metro districts was chosen for this study (see Table 2).

Table 2

*Demographics of Metropolitan Atlanta Charter Schools*

<table>
<thead>
<tr>
<th>System</th>
<th>Number of Charter Schools</th>
<th>Number of Free/Reduced Lunch of Minorities</th>
<th>Percentage Student Enrollment/Teacher*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta</td>
<td>106</td>
<td>12</td>
<td>75%</td>
</tr>
<tr>
<td>Cobb</td>
<td>110</td>
<td>7</td>
<td>44%</td>
</tr>
</tbody>
</table>

(continued)
Table 2 (continued)

<table>
<thead>
<tr>
<th>System</th>
<th>Total Number of Schools</th>
<th>Number of Charter Schools</th>
<th>Percentage of Free/Reduced Lunch</th>
<th>Percentage of Minorities</th>
<th>Student Enrollment/Teacher*</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeKalb</td>
<td>144</td>
<td>5</td>
<td>71%</td>
<td>90%</td>
<td>100/69</td>
</tr>
<tr>
<td>Fulton</td>
<td>94</td>
<td>7</td>
<td>45%</td>
<td>64%</td>
<td>86/6</td>
</tr>
<tr>
<td>Gwinnett</td>
<td>107</td>
<td>5</td>
<td>54%</td>
<td>63%</td>
<td>155/11</td>
</tr>
<tr>
<td>Marietta</td>
<td>14</td>
<td>14</td>
<td>65%</td>
<td>80%</td>
<td>8/6</td>
</tr>
<tr>
<td>Total/Avg.</td>
<td>575</td>
<td>50</td>
<td>67%</td>
<td>74%</td>
<td>506/36.5</td>
</tr>
</tbody>
</table>

**Sampling Technique**

Sampling methods are classified as probability or non-probability (Creswell, 2007). A small, but carefully chosen sample will represent the population. All efforts were made for sample to reflect the characteristics of the population from which it is drawn. To achieve this, the non-probability, criterion-sampling method was chosen. Creswell defined criterion sampling as a sampling choice where the subjects meet some specific criteria (2007). The first few subjects were purposefully chosen by criterion method. The sample population for a phenomenological study typically ranges from five to 25 participants who have been purposefully chosen because they are assumed to have information that is relevant to the study and was gained through personal experience with the phenomenon being studied (Creswell, 1998; Leedy & Ormrod, 2001).
Sample Size

Creswell (2003) noted that phenomenological qualitative research identifies the essence or the crux of human experiences concerning a phenomenon as described by the subjects in a study. Creswell cited Moustakas (1994) that phenomenological research “involves studying a small number of subjects through extensive and prolonged engagement to develop patterns and relationships of meaning” (p. 15). The sample of 19 teachers were chosen from the larger population of 36,500 teachers who taught in one of the six metro Atlanta school districts defined as high risk in the spring semester 2012. This particular school has 17 classrooms and has a variety of technology equipment that includes: computers, internet, LCD projectors, radios, overhead projectors, e-readers, Nooks, Kindles, student response systems, and MP3 players. The age of the building is approximately 40 years old, and the wiring may impede technology support, and affect speed and precision of the many facets of integrating technology into the school. The current study, therefore, satisfied Creswell and Moustakas’ requirement for a small number of subjects whereas six subjects, who were self-selected, completed open-ended interviews with the researcher and 19 teachers completed the quantitative surveys on Survey Monkey.

Informed Consent

In compliance with the regulations of the Institutional Review Board (IRB), an informed consent form was developed. The initial participants were asked to complete a consent form to participate in the study. This was the first page following of an “Introduction and Invitation to Study” letter. After reading the informed consent
document, they had to indicate their willingness to participate by clicking the box “I Agree.” If they choose not to participate, they checked the box “I Do Not Agree” and they did not become part of the study.

The form stated that the participants were guaranteed certain rights, agreed to be involved in the study, and acknowledged their rights were protected. Prior to the beginning of any discussions or interviews, each participant was informed of the purpose of the research, the benefits in participating such as contributing to the knowledge base of teacher longevity. A letter of introduction (see Appendix A) ensured cooperation and that participants understood the purpose of the study.

Appendix B is the informed consent form and Appendix C is the portion the participants kept that advised that the participant’s identity was confidential and discussed the study. This procedure ensured participants’ anonymity and that no names or contact data would be disclosed, unless they themselves chose to do so. Participants were told summary data would be disseminated to the professional community, but in no way would it be possible to trace responses to individuals.

Survey Monkey

Survey Monkey (2007a), a professional instrument administrator company, managed the survey using their secure Internet web-based system. Using Secure Socket SSL protocols, data were transmitted encrypted to the servers. Advances in electronic devices helped participants respond when, where, and how they were most comfortable. To use Survey Monkey, the researcher became a member at www.surveymonkey.com. Once a member, the use of the survey development began by addressing the questions,
ranging from multiple choices to descriptive text with the display format. Questions and responses can appear in a horizontal row or as a vertical set and sort or randomize the choices. This may have discouraged some respondents from answering, but provided one or two open-ended questions to allow respondents to voice their opinion about the survey or the topic. In addition, the opportunity to edit the questions and responses while in the writing of the survey questions may have helped prevent mistakes in the final survey.

Participants were allowed to opt-out of the study mid-survey. The survey was based on a Likert Scale. Subjects were asked to express how frequently they implement a set of instructional and assessment strategies on a five-point scale. Each level of frequency was assigned as follows: A = Always, O = Often, S = Sometimes, R = Rarely, and N = Never, with a numeric value assigned to each answer.

In the qualitative portion of the design, a phenomenological study was deemed appropriate. This method provided an understanding of the phenomenon of interest from interviews (Creswell, 2007a). The process is inductive where compiling the raw data into one table identified by significant statements and extrapolating key words and phrases, clustering of these statements that developed into themes (Creswell, 2007a). The challenge in the multiple meanings that words can represent intensified the importance of setting up better questions to identify a pattern between the questions and answers. (See Appendix D for permission from the principal to use the school to interview the teachers and Appendix E for the interviewer questions.)

In using the Survey Monkey, an Internet website, survey participants accessed the Survey Monkey Website to complete the questions. Survey Monkey presented a strict
confidentiality statement and is a licensee of the TRUSTe Privacy Program. TRUSTe is an independent organization whose mission is to build users’ trust and confidence in the Internet by promoting the use of fair information practices (Survey Monkey, 2007b). The only identifier data in the online research instruments was the participant’s identification code was the link in the instrument data during data analysis. The data will be stored on a flash drive and kept in a lock box for five years.

Confidentiality

Participants were assured that the results will remain confidential and that complete anonymity would be maintained during the completion of the study. Participants were aware that the interviews contained no questions that could identify them by securing access to all collected personally identifiable information. All data collected will be on a password-protected computer. After that time, the electronic data will be erased and destroyed. The participants were informed the results of the research study may become a publication, but their names will not be disclosed in the study document (Copeland, 2007). The data will be kept in a safety-deposit box for five years.

Data Collection

The use of a website for the quantitative data was designed to simplify the data collection, giving the respondents one place where all tests were located. Once at the site the participants completed the informed consent form and then were guided through each step of the process. There was no paper to deal with or any need to return items by mail. The current study used a commercially available, validated research instrument that tested the central hypotheses in terms of the dependent variables. Survey Monkey
supported rating scales, ranking questions, multiple-choice questions, and a
demographic information. Survey Monkey tabulated the responses from the surveys.

With the qualitative data collection and analysis proceeded simultaneously.
Douglas (2008) noted the coding process requires segmenting or labeling the data to form
descriptions and themes connecting and interrelating themes to presenting data in a
meaningful manner to make certain the discoveries bring value to readers and add
knowledge to the community. A review of the collected data was conducted and each
response read and reread to determine similar themes of the study. Data analysis
involved sorting and organizing data into categories to identify any similarities. The
process involved categorizing or coding the data in a coherent manner to allow greater
discrimination and differentiation between data. The software programs considered for
the data analysis included CDC EZ-Text, NVivo, SPSS, and Atlas.ti. After careful
consideration on the appropriate data analysis program, SPSS was chosen as the
appropriate tool.

Storing the Data

Storing research data for preservation and future use is important to research
(Creswell, 2007). One of the best methods to store qualitative data including open-ended
interviews and interview notes is to keep the data in a hardcopy form. One of the reasons
for this type of storage method was to allow for easy access to future researchers who
wish to pursue research studies on similar topics. Future researchers will have the option
to use the original data to complete a different analysis or to verify the previous research.
Sensitive or confidential data will need to be stored in a secured file cabinet or in a room
that is not easily accessible to future researchers who wish to pursue research studies on similar topics (Creswell, 2007).

Upon completion of the data analysis, the information was stored in hard copy format in a bank safety-deposit box. Methods of storing data are the use of CDs or DVDs for future research. Other approved computerized software that could be used including software that will not distort the original nature of the data. Any controversial or unwanted data collected will be destroyed by shredding or other destructive method to protect the identity and confidentiality of the participants (Creswell, 2007).

Validit y and Reliability—Internal and External

One of the most common types of research design to provide validity and reliability is triangulation of measures (Neuman, 2003). Triangulation is a method used for capturing and enhancing social phenomena to gain a more accurate analysis and explanation (Cox & Hassard, 2005). The triangulation of data collection and data analysis are designed to address any bias and enhance the validity of the study. The use of participants’ open-ended interviews to strengthen the reliability of the questions was used in the process. Triangulation of data allows researchers to reveal various dimension of a given phenomenon.

In the mixed method, reliability is dependent upon a systematic protocol that allows other researchers to repeat the procedures in another setting with the same results (Yin, 2003). Consistency in the data collection process and the way in which the data are analyzed are crucial in the establishment of reliability. The objective of the mixed method approach is to support the validity of the data collected during the research
process (Creswell, 2008). The information obtained from the data analysis will provide school administrators with valuable information they could use when purchasing technology and when training teachers to use technology.

The advantage of using NVivo9 is to ensure that the qualitative data are reliable. Triangulation of data allows researchers to reveal various dimension of a given phenomenon. Creswell (2007) noted that the content, length, and complexity of the participants’ responses might vary. The data collected from the interviews will provide a complete picture of the varied experiences. The use of the qualitative phenomenological research method, design, and analysis in the research process will result in original data that will provide insight into the research questions. After the processes of data collection, data review, data analysis, and interpretation for relevance to the research questions, the data will be stored in a bank safety deposit box. Exacting measures were used to ensure the confidentiality and anonymity of the participants.

Summary

Chapter 4 addressed key points that include appropriate research method and design for the research study. Qualitative research method and design appropriate to solicit open-ended interviews from teachers from the sample school chosen were addressed. The chosen qualitative phenomenological method and design appropriate for exploring unknown variables and patterns were discussed. Chapter 5 includes a report of all test results with explanations and details about the analysis procedures. Creswell (2008) noted that a research design is a plan or proposal used to conduct research. Other key information discussed in Chapter 3 included the population, sampling, data collection
procedures, rationale for the study, reliability, and validity of the study, data analysis, and data storage. The confidentiality of each participant will be maintained throughout the study. Participants will be informed that they may refuse to participate or withdraw from the study at any time. The intention of the study is to provide school leaders with insight they could use that may be beneficial to finding ways to use the technologies assigned to their schools and put them in the hands of the students.

Clark Atlanta University's Institutional Review Board, ensuring that ethical considerations protected participants and met the required academic standards, approved the research design. The study findings will be presented in the following chapter. Chapter 5 includes the quantitative and qualitative phenomenological findings of the research study and a complete analysis of the data will be presented. The chapter also presents a summary of the statistical characteristics of the study participants and addresses the research questions as they relate to the research study's findings.
CHAPTER V
DATA ANALYSIS

Introduction

Four research questions guided this research study. The general problem is that teachers do not use technology on a regular basis in their lesson plans, in their teaching, in their expectations, or in their formative and summative assessments. The district sends these teachers to in-services; skilled, in-house staff members assist when training is the issue; the schools have technology budgets, the schools have computer labs with the appropriate number of computers, and all the teachers are highly qualified according to the mandates of the *No Child Left behind Act of 2001*. The specific problem is the reasons remain unknown why the teachers are not using the technology on a regular, consistent, daily basis in their lesson plans, in their teaching, in their expectations, and in their formative and summative assessments. The independent variables for this study include teacher qualification, individualized instructional strategies, group instructional strategies, in-services/staff development, class size, teacher experience, gender, age, and race. In addition, information gleaned from survey items as well as interviews provided insights into the purpose of the study.
Research Questions

Teddlie (2009) stated that in a sequential mixed method design, the research questions are related to one another and may evolve as the study unfolds. The purpose of this mixed method research study is to examine the effects of the technology in the classroom. The research questions must align with the problem and purpose statement and with the research method and design. Creswell (2007) stated that the “success of the research questions depend upon the extent to which the research questions “touch the lived experiences distinct from theoretical explanations” (p. 269). Creswell (2009) further stated that in a qualitative study, researchers should state research questions in the form of a central question that asks for an exploration of the central phenomenon or concept in the study. He continued that one or two central questions should be followed by no more than five to seven sub-questions or investigative questions during the interview process. The following are the central research questions for this study:

RQ1: What are some of the factors that might influence the use of technology in the daily teaching and learning activities?

RQ2: How are teachers taking advantage of the technologies that are available to them?

RQ3: How, if at all, are technologies in its various forms, important to teacher’s pedagogy?

RQ4: How are individualized instructional technological activities an important part of a teachers strategy.
Characteristics of Sample

The participants are representative of teachers from Metro Atlanta. The specifics of this sample follow this synopsis. Averaging the answers provides the following information about teachers from the sample: They have been teaching about five years, about 5½ years with high-risk students, but only about two years at their current school. Most participants have Master's degrees and are certified to teach in their field of study. About 20 students are assigned to each of their classes.

Overview

Of the 20 teachers invited to participate, 19—95%, accepted the invitation and completed the survey. Of that number, for unknown reasons, up to five participants skipped various questions repeated times. 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, an interview, and observations. The triangulation used in this study was relevant because it allowed the researcher to use multiple data sources to address the research questions and to validate the results. By cross checking the data, the validity of the data could be assessed. Wiersma (2000) described triangulation as a qualitative cross-validation process that combines two or more data sources or data collection procedures. Complexity enhances reliability.

Surveys. The first method of gathering data used for triangulation was a survey handled by Survey Monkey (2007a), a professional instrument administrator company,
managed the survey using their secure Internet web-based system using Secure Socket SSL protocols, data were transmitted encrypted to the servers. To use Survey Monkey, the researcher became a member at www.surveymonkey.com. The survey was based on a Likert Scale. Subjects were asked to express how frequently they implement a set of instructional and assessment strategies on a five-point scale. Each level of frequency was assigned as follows: A = Always, O = Often, S = Sometimes, R = Rarely, and N = Never, with a numeric value assigned to each answer related to teacher qualification, individualized instructional strategies, group instructional strategies, in-services/staff development, class size, teacher experience, gender, age, and race.

- How many years have you been teaching at your current grade level as a certified teacher?
- How many years have you taught outside of your current grade level as a certified teacher?
- How many years' experience do you have teaching at at-risk (high-risk) high schools?
- How many years have you been at your current school?
- Have you ever held a full-time administrative K-12 position?
- Which one best describes your situation [degree status]?
- How many students are assigned to your classroom?
- How many of these items [technologies] do you use in group activities?
- How many of these items [technologies] do you use in one-on-one teaching?
• How frequently are hardware or software items found in your [technologies] classroom?

• Have you participated in any of these in-services in the past five years?

• What is your gender?

• Which describes you [ethnicity]?

**Interviews.** The second method of gathering data used was the semi-structured, open-ended interviews, in which six participants were self-selected. The interviews were also used for triangulation. Interview questions used as a guide for all interviews are as follows:

• What technologies are available to you right now?

• What are some certifications, or types of technology training have you had in the last two years?

• After attending the technology training sessions, how have you used the technologies in your instruction? How? Why?

• Explain/Tell your experiences when attending in-services/training sessions when it comes to incorporating new technology into the curriculum?

• How do you feel about using the technology that is available to you in your instruction?

• What obstacles are preventing you from using technology more in your instruction?

• What current technology would you use to enhance the learning capabilities of an academically challenged student?
• How do you use technology when differentiating your instruction?

Class observations. In addition to the surveys and interviews, the third method of gathering data used was class observations. The researcher observed the interactions of the teachers, administrators, and media specialists at the high school where he conducted the study. As stated above, this added to the validity of the study. During the class observations, the researcher noted the following regarding the teachers' use of technology in the classrooms. An array of technologies the observer was looking for prior to coming into the classroom are: Computer, scanners, I-Respond System, Books on Tape, LCD Projectors, Duplicating Machines, Internet Research, Graphic Organizers, Smart Boards, Computerized Grade Book, and Video Streaming. Also, the observer was looking for Web site instructional tools, such as Wikis, Blogs, and Podcasts, and Tool-based applications, such as Word, PowerPoint, Excel, Access, and Publisher.

Table 3, classroom observation protocols, shows a list of classes the observer observed, if there were teacher/student engagement with technology, what technologies were available in each class, the number of working computers in each classroom, and how much time teachers/students utilized the technology equipment. In addition, the observer observed if learning was taking place while students were engaged with the technology available during instruction.
Table 3

*Classroom Observation Protocols*

<table>
<thead>
<tr>
<th>Class</th>
<th>Engagement</th>
<th>Teacher/Student Working</th>
<th>Number of Computers</th>
<th>Time Spent on Each Working</th>
<th>Use of Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Yes</td>
<td>8</td>
<td>20 minutes</td>
<td></td>
<td>Computer, Internet Research (EBSCOhost), Nook (e-reader), Smart Board</td>
</tr>
<tr>
<td>Spanish</td>
<td>Yes</td>
<td>6</td>
<td>40 minutes</td>
<td></td>
<td>Computer, LCD Projector, Power Point, Publisher</td>
</tr>
<tr>
<td>English</td>
<td>Yes</td>
<td>8</td>
<td>35 minutes</td>
<td></td>
<td>Computer, LCD Projector, Power Point, Internet to Stream Video, Movie Maker</td>
</tr>
<tr>
<td>Social Studies</td>
<td>No</td>
<td>2</td>
<td>0 minutes</td>
<td></td>
<td>Computer, LCD Projector</td>
</tr>
<tr>
<td>English</td>
<td>Yes</td>
<td>8</td>
<td>0 minutes</td>
<td></td>
<td>Computer, LCD Projector, Power Point, Internet to Stream Video</td>
</tr>
<tr>
<td>Math</td>
<td>No</td>
<td>1</td>
<td>0 minutes</td>
<td></td>
<td>Computer LCD Projector</td>
</tr>
<tr>
<td>Engineering</td>
<td>Yes</td>
<td>5</td>
<td>45 minutes</td>
<td></td>
<td>Computer, LCD Projector, Math Lab, Excel, CAD software, android App development, cell phones</td>
</tr>
</tbody>
</table>

**Part I: Qualitative Analysis**

The main emphasis of a qualitative researcher is to portray an accurate, honest, and equitable assessment of the "social experiences" of participants in a study (Cone & Foster, 2006; Creswel, 2007). The validity of a study can determine the accuracy of
interpretations in a study by establishing if the study measured what the study was supposed to measure (Creswell, 2007; Neuman, 2006; Popham, 2005). Reliability determines that the data collected is consistent and dependable. The qualitative data collected from this study were analyzed using NVivo 9 data-management software program. Data information was imported and sorted into same and similar responses through the software program. The researcher analyzed the data from transcripts and MS Word documents files using NVivo 9 software. The NVivo 9 software program identified themes and common perceptions of participants concerning why highly qualified teachers in metro Atlanta who teach minority, low income students and diversity in the use of technology in their lesson plans, assessments, instruction, expectations from students, and in-class student time. The researcher based the collected data upon the experiences and beliefs of the teachers from one charter high school in metro Atlanta. The researcher deemed the data obtained from these teachers as appropriate because these teachers were representative of teachers throughout metro Atlanta.

Qualitative data were collected over a two-week period. The researcher conducted observations in all classrooms and the media center. The researcher conducted the interviews in the different classroom, computer lab, and the teacher workroom from end of February to the middle of March 2012. During the informal walkthroughs, teachers gave the following reasons for not using technology. They were most forthcoming with their opinions. Although many reasons were given, some were rather
Saturation was reached quickly with the following indicators for research question 1:

- Input on attending specific technology training
- Input on selecting necessary technology or vetoing inadequate or insufficient technology
- Input on monies spent/wasted on technology
- More detailed training
- Time to acclimate (practice) new technology
- All equipment should be working properly
- Adequate amounts of equipment, such as one computer or one hand held I-respond remote control per child
- Tech support availability
- Hardware such as remote controls, power strips, and batteries

For teachers to use more technology, it is apparent the above issues must be addressed. Teachers must have input on the technologies they need in their specific classrooms. They must have working technology for the number of students in their classes. Obviously, they must have all accessories necessary, such as remote controls, batteries, power strips, and power cords—anything necessary for a flawless presentation of that day’s activities. Training or inservices must be at the teachers’ convenience, delivered by a trained staff member in a quiet, uninterrupted environment. The training should be specific to the teachers’ needs. Teachers should be given the opportunity to select the training they need, from a catalog or sources. Ideally, inventoried technology
should be kept in a place where teachers can check out the technology they need on regular basis. Equipment hoarding must stop. According to surveys, interviews, and subsequent conversations with teachers and other faculty completed for this study, this is how we will encourage teachers to use technology in their daily teaching and learning activities.

The following interview questions were used during the interview to provide a rich description of the teachers' opinions. The participants were allowed to elaborate about the use of technology in the classroom.

- What technologies are available to you right now?
- What are some certifications, or types of technology training have you had in the last two years?
- After attending the technology training sessions, how have you used the technologies in your instruction? How? Why?
- Explain/Tell your experiences when attending in-services/training sessions when it comes to incorporating new technology into the curriculum?
- How do you feel about using the technology that is available to you in your instruction?
- What obstacles are preventing you from using technology more in your instruction?
- What current technology would you use to enhance the learning capabilities of an academically challenged student?
- How do you use technology when differentiating your instruction?
A review of all interviews found the follow themes in answer to the following research questions:

RQ1: What are some of the factors that might influence the use of technology in the daily teaching and learning activities?

RQ2: How are teachers taking advantage of the technologies that are available to them?

Qualitative Results

The research questions guided the analysis and findings. In analyzing all the data from the surveys, one item showed significant for teachers: "Technology is important," and that item is required by the school district as a condition of employment—the computerized grade book. No other item showed significant for importance. LCD projectors showed significant for non-use.

Figure 6 shows the following synopses of each interview and dominant themes from each interview. In interview 1, teachers said that training was important. Teachers want to give suggestions and input on the types of training in-services they attend. In interview 2 and 3, teachers said that technology is important. An array of technologies used and the type of technologies needed to increase student achievement was dominant.
Figure 6. Dominant Themes

In Figure 7, all qualitative data (interviews) were tabulated through NVivo 9 searching for themes.

Figure 7. NVivo9 Raw Data
Figure 8 shows the misuse of money as the top reason teachers are not using technology in the classroom. The second reason teachers are not using technology during instruction time was teachers do not have enough time to learn the technology and utilize it during instruction.

![Bar chart showing top reasons for not using technology]

**TOP REASONS GIVEN FOR NOT USING TECHNOLOGY**

(*What is needed; **How to use)

![Bar chart showing top reasons for not using technology]

Figure 8. Response to Research Questions

The main reason given for not using technology by these participants was they felt the school system misused money when purchasing the technology or they purchased the wrong technology, bought technology that was too expensive, or did not take into consideration the needs of all stakeholders. The second most popular reason given was not enough time to learn the technology or not enough time to get the technology out and then to put it away after use. Next, these participants felt that much of the available technology was not beneficial for their needs. They also felt they did not understand what was needed nor did they understand how to use much of what they had. Finally, they felt they needed more money to buy better, newer, or different technology.
Part II: Quantitative Analysis

Nineteen teachers completed the Survey Monkey survey. The following are those answers:

1. **How many years have you been teaching at your current grade level as a certified teacher?**

   Four stated they had taught less than 1 year; five stated they taught from 1 to 3 years; five stated they taught from 4 to 6 years; three stated they had taught from 7 to 9 years; and two teachers stated they had taught from 16 to 18 years.

2. **How many years have you taught outside of your current grade level as a certified teacher?**

   Eight teachers stated less than 1 year, two teachers stated 1 to 3 years, and one teacher said 4 to 6 years; three teachers said 7 to 9 years, one teacher said 10 to 12 years, and two teachers said 16 to 18 years.

3. **How many years of experience do you have teaching at-risk (high-risk) students?**

   Four teachers had less than 1 year’s experience, seven teachers had 1 to 3 years’ experience, six teachers had 7 to 9 years’ experience, and one each said 13 to 15, and 16 to 18 years’ experience.

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

   Eight teachers had been at the target school for less than 1 year. Seven teachers had been at the school from 1 to 3 years. Three teachers had been at the school from 4 to 6 years, and one teacher had been there for 7 to 9 years.
5. None of the teacher-respondents had ever held a full-time, administrative K-12 position.

6. What is your highest degree with teacher's certification?
   Three teachers held a Bachelor's degree without teacher certification, and five held a Bachelor's degree with teacher certification. One held a Master's degree without teacher certification, and 10 held a Master's degree with teacher certification.

7. How many students are assigned to your class roster?
   One teacher had more than 40 students assigned to his or her classes; one teacher had 28-31 students, one had 25-27 students, three had 22-24 students, five had 19-21, five teachers had 16-18, and two teachers had 13-15 students each assigned to classes.

8. Gender: Nine men and 10 women completed the survey (Age was not asked.)

9. Race: Seven listed African American, Four listed Asian, eight listed white-non-Hispanic, and one listed other.

For the quantitative part of the mixed model study, the following research questions drove the study:

RQ3: How, if at all, are technologies in its various forms, important to teacher's pedagogy?

RQ4: How are individualized instructional technological activities an important part of a teacher's strategy.
Quantitative Results

Table 4 indicates how frequently teachers use various activities in group instruction. What was most significant was that most teachers use direct instruction, hand-on activities, and higher-level questioning, in group instruction. On the other hand, most teachers rarely used reciprocal teaching as an activity in group instruction.

Table 4

Teachers’ Responses to Survey Question 10

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Some</th>
<th>Often</th>
<th>Always</th>
<th>Average</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability/Flexible Groups</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>1</td>
<td>3.17</td>
<td>18</td>
</tr>
<tr>
<td>Cooperative Groups</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>3.50</td>
<td>18</td>
</tr>
<tr>
<td>Peer Tutoring</td>
<td>3</td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>3.00</td>
<td>17</td>
</tr>
<tr>
<td>Hands on Activities</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>2</td>
<td>3.67</td>
<td>18</td>
</tr>
<tr>
<td>Interdisciplinary Units</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>3.35</td>
<td>17</td>
</tr>
<tr>
<td>Test-taking Strategies</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>2.94</td>
<td>18</td>
</tr>
<tr>
<td>High-level Questioning</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>1</td>
<td>3.65</td>
<td>17</td>
</tr>
<tr>
<td>Word Study</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>6</td>
<td>2</td>
<td>3.41</td>
<td>17</td>
</tr>
<tr>
<td>Test Highlighting</td>
<td>4</td>
<td>3</td>
<td>8</td>
<td>1</td>
<td>0</td>
<td>2.38</td>
<td>16</td>
</tr>
<tr>
<td>Reciprocal Teaching</td>
<td>2</td>
<td>9</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>2.38</td>
<td>16</td>
</tr>
<tr>
<td>Worksheet Activities</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>3.67</td>
<td>18</td>
</tr>
<tr>
<td>Textbook Activities</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>3.50</td>
<td>18</td>
</tr>
<tr>
<td>Discussions</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>3.88</td>
<td>17</td>
</tr>
<tr>
<td>Direct Instruction</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>11</td>
<td>3</td>
<td>3.94</td>
<td>18</td>
</tr>
</tbody>
</table>

Number answered out of 18/19
Table 5 indicates how frequently teachers use a diversity of technologies in classroom instruction. The most significant technologies that teachers used the most were computers, Microsoft PowerPoint application, and LCD Projectors and the computerized grade book. On the other hand, what were most significant that teachers rarely or never used was Blogs, I-Respond systems, and Smart Boards. While this particular school has the capabilities to utilized Blogs and I-Respond systems during instruction, there were no Smart Boards available. This is due to the fact that the school did not purchase Smart Boards for teachers.

Table 5

*Teachers' Responses to Survey Question 11*

11. Diversity in the Use of Technology

Indicate how frequently you use the following in INSTRUCTION

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Some</th>
<th>Often</th>
<th>Always</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphic Organizers</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>1</td>
<td>3.22</td>
</tr>
<tr>
<td>Books on Tape</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1.72</td>
</tr>
<tr>
<td>Computers</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>10</td>
<td>2</td>
<td>3.78</td>
</tr>
<tr>
<td>LCD Projectors</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>11</td>
<td>5</td>
<td>4.11</td>
</tr>
<tr>
<td>Smart Boards</td>
<td>15</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1.18</td>
</tr>
<tr>
<td>Scanners</td>
<td>11</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1.56</td>
</tr>
<tr>
<td>Internet</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>3.94</td>
</tr>
<tr>
<td>Word Processing (Word)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>3.67</td>
</tr>
<tr>
<td>Excel (ex)</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2.83</td>
</tr>
<tr>
<td>PowerPoint (ex)</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td>5</td>
<td>3.94</td>
</tr>
</tbody>
</table>

(continued)
Table 5 (continued)

11. Diversity in the Use of Technology

Indicate how frequently you use the following in INSTRUCTION

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Rarely</th>
<th>Some</th>
<th>Often</th>
<th>Always</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access (ex)</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>2.06</td>
</tr>
<tr>
<td>CD/DVD Burners</td>
<td>11</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1.78</td>
</tr>
<tr>
<td>Laminators</td>
<td>9</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1.53</td>
</tr>
<tr>
<td>Duplicating Machine</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>3.06</td>
</tr>
<tr>
<td>Computerized Grade Book</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>12</td>
<td>4.11</td>
</tr>
<tr>
<td>Website for Teachers</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>3.94</td>
</tr>
<tr>
<td>Blog</td>
<td>13</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1.56</td>
</tr>
<tr>
<td>Blackboard Online</td>
<td>15</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1.18</td>
</tr>
<tr>
<td>I-Respond</td>
<td>13</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1.50</td>
</tr>
<tr>
<td>Video Streaming</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>3.50</td>
</tr>
<tr>
<td>Wikis</td>
<td>11</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1.67</td>
</tr>
<tr>
<td>Podcasts</td>
<td>12</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1.56</td>
</tr>
<tr>
<td>Number answered out of 18/19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6 indicates how frequently teachers use various activities in a one-to-one teaching situation with students. What was most significant was that eight of nineteen teachers used hand-on activities, interdisciplinary units, test-taking strategies, and direct instruction activities in a one-to-one teaching situation, and nine out of nineteen teachers used text book activities in a one-to-one teaching situation with students. On the other hand, most teachers rarely used reciprocal teaching as an activity in group instruction.
Table 6

*Teachers’ Responses to Survey Question 12*

**12. Diversity in the Use of Technology**

Indicate how frequently these activities are used INDIVIDUALLY in a ONE-TO-ONE TEACHING SITUATION with students in your classroom.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Rarely</th>
<th>Some</th>
<th>Often</th>
<th>Always</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands-on Activity</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td>3.44</td>
</tr>
<tr>
<td>Interdisciplinary Units</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>0</td>
<td>2.79</td>
</tr>
<tr>
<td>Test-taking Strategies</td>
<td>0</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>3.19</td>
</tr>
<tr>
<td>Higher-Level Questioning</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>3</td>
<td>3.75</td>
</tr>
<tr>
<td>Word-Study Vocabulary</td>
<td>0</td>
<td>2</td>
<td>7</td>
<td>0</td>
<td>3</td>
<td>3.47</td>
</tr>
<tr>
<td>Test-Highlighting</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>2.00</td>
</tr>
<tr>
<td>Reciprocal Teaching</td>
<td>1</td>
<td>10</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>2.27</td>
</tr>
<tr>
<td>Worksheet Activities</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>3.36</td>
</tr>
<tr>
<td>Textbook Activities</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>2</td>
<td>3.63</td>
</tr>
<tr>
<td>Discussions</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>3.80</td>
</tr>
<tr>
<td>Direct Instruction</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>8</td>
<td>2</td>
<td>3.67</td>
</tr>
<tr>
<td>Number answered out of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16/18</td>
</tr>
</tbody>
</table>

Table 7 indicates how frequently teachers use a technology hardware and software items in testing and assessments of students. The most significant technology hardware and software items that teachers used in assessing students are computers. Blogs, I-Respond systems, and wikis are rarely or never used in testing and assessing students.
Table 7

*Teachers’ Responses to Survey Question 13*

13. Diversity in the Use of Technology

Please indicate how frequently you use the following technology hardware and software items in your TESTING AND ASSESSMENTS of your students.

<table>
<thead>
<tr>
<th>Item</th>
<th>Never</th>
<th>Rarely</th>
<th>Some</th>
<th>Often</th>
<th>Always</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphic Organizers</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>2.67</td>
</tr>
<tr>
<td>Books on Tape</td>
<td>12</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1.33</td>
</tr>
<tr>
<td>Computers</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>3.13</td>
</tr>
<tr>
<td>LCD Projectors</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>2.53</td>
</tr>
<tr>
<td>Smart Boards</td>
<td>13</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1.20</td>
</tr>
<tr>
<td>Scanners</td>
<td>11</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1.33</td>
</tr>
<tr>
<td>Internet</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>3.07</td>
</tr>
<tr>
<td>Word Processing (Word)</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>3.33</td>
</tr>
<tr>
<td>Excel (ex)</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>2.20</td>
</tr>
<tr>
<td>PowerPoint (ex)</td>
<td>6</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>2.27</td>
</tr>
<tr>
<td>Access (ex)</td>
<td>10</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>1.67</td>
</tr>
<tr>
<td>CD/DVD Burners</td>
<td>10</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1.40</td>
</tr>
<tr>
<td>Laminators</td>
<td>11</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1.40</td>
</tr>
<tr>
<td>Duplicating Machine</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>2.80</td>
</tr>
<tr>
<td>Computerized Grade Book</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>3.60</td>
</tr>
<tr>
<td>Website for Teachers</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2.67</td>
</tr>
<tr>
<td>Blog</td>
<td>11</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1.40</td>
</tr>
<tr>
<td>Blackboard Online</td>
<td>13</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1.20</td>
</tr>
</tbody>
</table>

(continued)
Table 7 (continued)

13. Diversity in the Use of Technology

Please indicate how frequently you use the following technology hardware and software items in your TESTING AND ASSESSMENTS of your students.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Rarely</th>
<th>Some</th>
<th>Often</th>
<th>Always</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Respond</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1.47</td>
</tr>
<tr>
<td>Video Streaming</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1.87</td>
</tr>
<tr>
<td>Wikis</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.40</td>
</tr>
<tr>
<td>Podcasts</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1.40</td>
</tr>
</tbody>
</table>

Number answered out of 15/19

Table 8 indicates if teachers have participated in these training activities in the last three years. The most significant technology training activities that teachers have participated in are differentiated instruction, Microsoft PowerPoint, e-mail, and internet and search engines. I-Respond training was the most significant training that teachers did not participate in the last three years.

Table 8

Teachers' Responses to Survey Question 14

14. Diversity in the Use of Technology

Indicate if you have participated in these activities in the last 3 years.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differentiated Instruction</td>
<td>15</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Blackboard Training</td>
<td>4</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

(continued)
Table 8 (continued)

<table>
<thead>
<tr>
<th>14. Diversity in the Use of Technology</th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicate if you have participated in these activities in the last 3 years.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Analysis</td>
<td>12</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>I-Respond Training</td>
<td>4</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Effective Strategies of Co-Teaching</td>
<td>8</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>GPS (Georgia Performance Standards) Training</td>
<td>12</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Math I and II Training</td>
<td>3</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Standards Based Grading</td>
<td>12</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Curriculum and Development Training</td>
<td>11</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Assessment and Grading</td>
<td>10</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Interactive Classroom</td>
<td>8</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>The Performance Assessment Instruction (PAI)</td>
<td>4</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Technology in the Classroom Training</td>
<td>12</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Basic Computing</td>
<td>11</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Work Processing (e.g., MS Word)</td>
<td>12</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Spreadsheets (e.g., MS Excel)</td>
<td>10</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Databases (e.g., MS Access)</td>
<td>6</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Presentations (e.g., MS PowerPoint)</td>
<td>13</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>E-mail</td>
<td>13</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Internet and Search Engines</td>
<td>13</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Creating a Faculty Website</td>
<td>11</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Number answered out of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16/19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter Summary

The purpose of this mixed method research design is to understand why highly qualified teachers in metro Atlanta who teach minority, low income students and diversity in the use of technology in their lesson plans, assessments, instruction, expectations from students, and in-class student time. Chapter 5 introduced the qualitative and quantitative results of the observations, interviews, and surveys. Chapter 6 discussed the findings. The two qualitative questions uncovered findings, which are discussed in depth in Chapter 6.
CHAPTER VI
FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Introduction

As the world continues to embrace the ever-changing technological aspects of our society, the methods used to teach students must also change. The impact of technology on the high school curriculum should have a positive effect on students’ attitudes and academic performance in the classroom (Gray, Thomas, & Lewis, 2010). Using technology to assist in teaching students gives them, not only a clearer understanding of the subject matter, but also gives them the skill set to perform well in the classroom, which in turn, results in confidence and positive self-esteem (Gray, 2010). Therefore, when teachers use different strategies to present lessons, students use different methods to process the data whereby embracing a technologically-aged culture to ensure students a quality education.

The question is: How can we assure students are acquiring the skills necessary to advance to the next level of their educational careers? To make sure technology is integrated with teaching and learning, we must hold ourselves and others accountable in a way that ensures, not only students, but all stakeholders, that the technology is available, is in good working order, is in sufficient number for class size, and all lesson plans incorporate technology. Furthermore, we need a way to ensure teachers are using a
diversity of technology elements in instruction, as well as testing students using technology to demonstrate mastery of technological skills. We, as teachers, must do this to ascertain if our students are learning the subject matter and are able to move on to the next level.

**Research Questions**

RQ1: What are some of the factors that might influence the use of technology in the daily teaching and learning activities?

RQ2: How are teachers taking advantage of the technologies that are available to them?

RQ3: How, if at all, are technologies in its various forms, important to teacher’s pedagogy?

RQ4: How are individualized instructional technological activities an important part of a teachers strategy.

**Findings**

The researcher found that Teachers want to have input and a choice on attending specific technology training staff development/in-services that is conducive to their subject area. Also, teachers want to select the necessary technologies that are comparable to what they teach and veto inadequate or insufficient technology that is not helpful in increasing student achievement. The data also showed that teachers want to give suggestions on monies spent on technologies and what technologies are wasting stakeholders’ dollars. In addition, teachers need more detailed training and time to
acclimate new technology into their lesson plans and instruction. Working equipment and adequate amounts of equipment need to be available for teachers in their classrooms. For example, computer labs should have one working computer for each child in a single class, as well as, one hand held I-respond remote control available per child. Hardware such as remote controls, power strips, and batteries should be available to each teacher during instruction. Teachers need tech support availability when having technical issues utilizing technology during instruction.

The findings of the open-ended interviews, observations, and surveys showed that LCD projectors are a great piece of equipment to show PowerPoint presentations, streaming video clips, and anything teachers would like to show from their computers. Teachers also use their media specialist as a resource to teach students a program called Movie Maker. Students use Movie Maker to create a presentation with music, pictures, and embedded video clips.

The findings of the open-ended interviews, observations, and surveys also showed technologies, such as audio books coupled with MP3 players are important to teachers’ pedagogy for students who do not read very well. The students are able to listen to the way the words are put together. In addition, a web site called Glogster is a great tool to use in instruction. Glogster allows students to create digital posters. Teachers can assign a project where students can record narration, put text on the poster, create an overview or summary, and pin You Tube videos.

The I-respond Student Response Systems and hand held remote controls are rarely used. In fact, at this high school, two or three teachers use them out of about
fifteen or sixteen teachers, all of which have the total I-respond system in their possession to utilize. Few teachers like to use them if the population of students is already engaged in the lesson. Student response systems can be great because it gives teachers an immediate assessment of what is going on in the class and if students understand the lesson. However, if a particular class or population of students has issues with either discipline or attention deficits, which a lot of our students do, then the I-respond become a distraction. Depending on the students, technology can become a distraction rather than a tool to help increase student achievement.

Smart Boards are rarely or never used in the classroom. The findings of the open-ended interviews and observations showed that only a couple of teachers have had experiences with using Smart Boards in their classes and those teachers use them merely as a projection screen to show movies, or present information from a PowerPoint presentation. This particular school has not purchased Smart Boards for their teachers because it is a waste of money. However, the few teachers who has had experiences with using Smart Boards would put something pertaining to the lesson on the Smart Board and will have the students go up to the Smart Board and circle or underline information for student interaction. In the open-ended interviews, data showed that this interaction with a multi-thousand dollar tool is a waste of money when teachers can use the white board to engage students the same way as with the Smart Boards. This is a result of there not being a target assessment of what technology teachers need to use in instruction and what students need to use in order to achieve academically.
The lack of money is an obstacle that prevents teachers from utilizing technology in their instruction, as well as, the lack of LCD projectors is a problem that presents teachers from using certain technologies that are needed in instruction. However, if new Mac computers or I-pads are available, or if Smart Boards are in every classroom, then administrative leaders are impressed because the school has technology. Subsequently, there is a false sense of reality that students are learning because of certain equipment in the classroom, and as a result, technology is being used as a ‘buzz’ word just to say the school is using technology. Instead, there should be teacher/student engagement and student learning with the technology so that results of student achievement is evident.

Implications

The implications for this research study are, in order for teachers to use more technology, it is apparent the above issues must be addressed. Teachers need self-sufficiency in choosing staff development and in-service technological training sessions that will help them become successful in using technology in their instruction. Teachers need options on choosing adequate technologies that will allow them to facilitate learning to their students, as well as, options to reject technologies that are not helpful in increasing student achievement. Also, teachers need a budget to spend money on technologies that will be conducive to facilitating learning to students and meeting state academic standards, as well as more time to learn new technologies to implement into their classroom instructional activities. Teachers need enough equipment for all students in the classroom, and must have working technologies for the number of students in their
classes. Obviously, teachers must have all accessories necessary, such as remote controls, batteries, power strips, and power cords—anything necessary for a flawless presentation of that day's activities. Training or in services must be at the teachers' convenience, delivered by a trained staff member in a quiet, uninterrupted environment. The training should be specific to the teachers' needs. Teachers should be given the opportunity to select the training they need, from a catalog or sources. Ideally, inventoried technology should be kept in a place where teachers can check out the technology they need on regular basis. Equipment hoarding must stop. According to surveys, interviews, and subsequent conversations with teachers and other faculty completed for this study, these are some of the reasons teachers are not taking advantage of the technologies that are available to them. These are the reasons we will encourage teachers to use technology in their daily teaching and learning activities.

Limitations of the Study

Creswell (2009) described study limitations as the potential weakness or problems affecting the internal validity of a study. A limitation in this non-experimental research design was a weakness in the ability to determine causal relationships (Polit, & Beck, 2007). This study presents several limitations. One limitation of this study was the ability of the researcher to bracket existing assumptions regarding teachers not using technology in their classrooms. Even though 20 was a good representative sample for the quantitative part and six for the qualitative part, results could have been better improved and validated by using more participants. The participants for this study live in Atlanta, limiting the extrapolation of findings geographically and culturally to one area of the
United States. The school in this study was a small charter high school with only approximately 200 to 230 students and approximately 20 staff members. In the metro Atlanta area, this is quite unusual. Even though this school was a high-risk school as defined by the definitions adopted by this study, the size of the school and the staff reduces the probability of generalization. In order to respond to some question in the survey, the researcher asked participants to recall their previous experience in as much detail as possible, and this diminished the reliability of their responses if they were unable to recall all details. This could also be a threat to internal validity. Internal validity refers to the question whether, or not the study investigated what it claims to investigate. The teachers from the population sample might have felt that they revealed strategic information during the interview process, and might not have accurately supplied data for this study. These measures would have placed the anonymity of the participants to a higher priority.

**Recommendations**

**Leadership**

As previously discussed, leadership would be well advised to heed the observations of this researcher as well as follow the prescripts of the successful William T. McFatter Technical High School in Broward County Public Schools, Florida (Blasik et al., 2004). The integration of rigorous academics and technical instruction with state-of-the-art technology has made that school an exemplary model to follow. According to Blasik (2004), technology serves as an accelerator of momentum. The teacher participants in this study gave well-seasoned advice for leadership. All too often leaders
make decisions without consideration of those who will implement the use of the product. An administrator is well advised to heed the following:

- Be mindful of emerging technologies
- Offer teacher input into the technology training in services for his or her teaching specialty
- Allow teachers input on selecting necessary technology or vetoing inadequate or insufficient technology
- Accept teacher input on monies spent or wasted on technology
- Offer more extensive or advanced technology training
- Allow time to acclimate (practice) new technology
- Ensure all equipment is working properly
- Ensure that each student in each class has working equipment
- Ensure tech support availability
- Provide all accessories, such as remote controls, power strips, and batteries

For teachers to use the appropriate technology to increase student achievement, it is apparent the above issues must be addressed. Furthermore, the recommendations for administrative leaders are to clearly articulate where education is headed as it relates to technology in instruction. In addition, recommendations for administrative leaders should be to introduce training and staff development on new technologies at least the semester before implementation. Also, administrative leaders should allow teacher input into the technology training and in-services for his or her teaching specialty.

Administrative leaders need to establish technology protocols based on discussions with
all stakeholders. Another recommendation for administrative leaders is to accept teacher input on monies spent and wasted on technology. Moreover, establish protocols based on teachers’ use of technology during classroom instruction. In addition, offer more extensive or advanced technology training, and allow time to acclimate new technology. Administrative leaders should be aware of any technological issues that affect teachers’ classroom instructional practices and students’ academic success. Administrative leaders need to ensure that each student in each class has working equipment, and tech support is available. Also, administrative leaders are recommended to provide all accessories, such as remote controls, power strips, and batteries to fully utilized technology.

Some teachers work at schools deemed high risk—with high poverty rates and high minority populations; their needs must be addressed. The results of these open-ended interviews, observations, and surveys will provide valuable information that education leaders can use when purchasing new software and hardware, or for planning in-service training for teachers.

Leadership could be missing a most financially opportune chance for budget directors and technicians. It could be most prudent of them to try to find out what the teachers want to use and thereby instead of continually trying to get the teachers to use technology; they could have the technology the teachers want to use. Quite possibly education leadership is looking at technology from the wrong vantage point. The results from these open-ended interviews, observations, and surveys could provide valuable
information that education leaders can use when purchasing new technology, or for planning future in-service training for teachers.

**Leadership Practices**

Administrative leaders should be mindful of emerging technologies, and ensure teachers stay abreast of Georgia Performance Standards (GPS) as it relates to technology through teacher in-service sessions. In addition, administrative leaders need to ensure training is continuous, with at least one technological training session per semester for teachers. Also, administrative leaders should allocate funds for teachers to purchase technologies that will help them to increase student achievement. Another practice for administrative leaders is to establish protocols to ensure teachers are using technology in their instruction, and are practicing techniques and strategies that fall under differentiating instruction. Ensure students are using computers to type, rather than submit handwritten assignments. Ensure teachers will create a PowerPoint with vocabulary words so students will not only see the word, but the students can also hear the teacher say the word. In addition, ensure teachers will have a picture to go with the word so that the students can easily identify the word. Also, ensure students are using the internet for research, presentation software for presentations, and various Microsoft programs such as Publisher for projects. Furthermore, ensure students are using programs, such as Movie Maker and utilizing web sites, such as Glogster to complete projects and create electronic posters that relate to students’ learning activities.

Administrative leaders should also ensure the Network Administrator completes all technology work orders and make certain all equipment is working properly.
Policy

Policy implications would include collaborative in-service training sessions must be implemented at least once a year to ensure teachers and administrative leaders are aware of GPS standards as well as the latest technologies that can be utilized in classroom instruction. Another policy implication would be to appoint a liaison at the local school, such as a Network Administrator or a Media Specialist who would collaborate with a committee of teachers at the local school and school district leaders. The liaison would be someone at the local school who is technology savvy, and able to train teachers on using new technologies. Paired with the principal of the school, the technology liaison will help prepare a concrete budget that would be conducive to teachers’ technological needs that will directly impact student achievement. The liaison would be able to articulate the technological needs of the teachers and students and help implement the technological process as it relates to supplying the equipment to the teachers. In addition, implement a policy on distributing technology equipment to teachers. This policy could have teachers sign an agreement to utilize the equipment and implement educational activities to facilitate learning. Teachers must also agree to adhere to professional standards and conduct policies in the school district. Furthermore, administrative leaders should implement a policy that will enforce an agreement with the Network Administrator to complete all work order requests. Additionally, align performance assessment instruments for teachers with using various technologies in their instruction. Assessing students using technology on pre-test and post-test can be one way as a means to measure student achievement. Also, a policy recommendation should
require teachers to attend a one or two week long training session on new technologies. Teachers will have to learn how to use the technology in their classes and will be required to create lesson plans during the training sessions and present to the group. The teachers will also have to show and tell how this particular technology will help increase student achievement.

Furthermore, students will properly use computers, multimedia and desktop publishing applications, social networking web sites, and use the internet for research as a graduation requirement. Pre-test and post-test can also be used as a means to measure the level of standard required by students, thus increasing student achievement.

**Future Research**

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

1. Public school districts could do extensive research and test how staff development/in-service activities are directly affecting teachers’ use of technology in the classroom and students academic achievement.

2. Public school districts could do extensive research and compare suburban and urban school communities and test teachers’ use of blended technology that may influence students’ end of course tests and/or graduation test scores.

3. Public school districts could do extensive research on the implications of the Georgia Performance Standards (GPS) as it relates to technology in public high schools.
4. Public school districts could investigate administrative leaders’ ability to allocate funds for technology programs and how it affects student achievement.

5. Public school districts in rural areas could do extensive research and investigate the implications on the use of technology in classroom instruction, given the advantages of technology in this digital age.

Conclusion

As the world continues to embrace the ever-changing technological aspects of our society, the methods used to teach students must also change. The impact of technology on the high school curriculum should have a positive effect on students’ attitudes and academic performance in the classroom (Gray, Thomas, & Lewis, 2010). Using technology to assist in teaching students gives them, not only a clearer understanding of the subject matter, but also gives them the skill set to perform well in the classroom, which in turn, results in confidence and positive self-esteem (Gray, 2010). Therefore, when teachers use different strategies to present lessons, students use different methods to process the data whereby embracing a technologically-aged culture to ensure students a quality education.

As administrative leaders, we have a responsibility to ascertain avenues for students to become academically successful. Through the leadership and vision of school officials, through teachers’ use of an array of technologies in classroom instruction, and through the support of all stakeholders, students are entitled to an education that will allow them to become productive citizens in our communities, compete in our global
society, and are entitled to acquire the necessary skill set that is conducive to the
digital age in which we live.
APPENDIX A

Letter of Introduction

Diversity in the Use of Technology in Instruction and Assessment Strategies in One Predominately African American Metro Atlanta Public High School

Dear potential Participants:

Thank you for allowing me the time to discuss with you a research study that I am conducting as part of my doctoral studies in Educational Leadership at Clark Atlanta University. Dr. [Name] has granted approval for me to conduct this research study. This study has also been reviewed and approved by the Clark Atlanta University. No personally identifiable student information will be used in this study. The study will provide you with the opportunity to identify and express your instructional practices and opinions that influence your instructional choices. The study uses a survey and a focus group interview (that will be held away from campus) to obtain information about teachers' perceptions and assessment strategies of students. This study is not intended to be an evaluation of your teaching practices but the types of instructional strategies you choose for your students.

The purpose of this mixed method research design is to help understand the concerns of highly qualified teachers in metropolitan Atlanta who teach to low-income minority students that even after attending technology training/in-service meetings, they do not use enough technology in their lesson plans, assessments, or instruction; nor do they satisfy the technology expectations of their students or provide enough in-class computer student time. The independent variables for this study include: teacher qualification; individualized instructional strategies; group instructional strategies; in-services/staff development; class size; teacher experience; gender; age; and race.

Your name or school will not be used or identified in this study. The information you provide will be kept strictly confidential. This study is voluntary and participants can withdraw at any time. The benefit that participants may reasonably expect is the sense of assisting a doctoral student with research that informs ways to improve practice in schools. The exchange of information may benefit you to implement instructional strategies that may help increase student achievement. This can lead to a great sense of empowerment. You should be aware that there are minimal risks associated with this study. There may be times during the focus group process that you may experience a myriad of emotions that may cause feelings of frustration, happiness or sadness. Also, confidentiality cannot be guaranteed for information shared in a focus group.

If you are interested in participating in the study, you will be asked to read and sign a consent form. The informed consent forms will be kept at the researcher's home in a secure location for three years upon the completion of the study, at which time they will be destroyed by shredding.
Appendix A (continued)

In completing the survey given to you by the researcher, you are requested to think how the answers apply to your selection and use of instructional and assessment choices. It will take approximately fifteen minutes to complete the survey. You will be asked to use Survey Monkey to complete the survey. One becomes a member at www.surveymonkey.com. Once a member, the use of the survey development begins by addressing the question, ranging from multiple choices to descriptive text with the display format. You will be asked to complete the Demographics Survey, Group Instructional Strategies Survey, Technology Instructional Survey Use, Individualized Instructional Strategies Survey, Technology Software and Hardware Survey, and In-service / Staff Development Survey and this consent form. There are no correct or incorrect answers, so you are asked to respond honestly. Please do not place your name on the survey.

Please complete and submit the survey by (day), (date) by 3:45 pm. Any coding used is simply to track which surveys have been completed. No individual data will be reported. The surveys will be stored at the researcher’s home in a secure location. They will be destroyed by shredding at the completion of this study. Following the completion of the survey, participants are requested to voluntarily participate in a focus group interview which will last approximately one hour. Please indicate on the consent form if you are willing to participate in a focus group interview. The researcher will contact you to give you the date, time, and location.

The following measures will ensure that others, outside this focus group, do not learn your identity or what you share in the focus group.

1. No names will be used in transcribing from the audiotape or in writing up notes. Each person will be randomly assigned an alphabet.

2. The audiotape will be stored and reviewed only in my home. 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 sought from you first.

3. The tape recording from the focus group will be listened to only by the researcher and Dr. Sheila T. Gregory, supervising faculty and dissertation chair.

4. After the study is complete, the audiotape will be destroyed by erasure.

5. What is discussed by individual participants during our focus group will be kept confidential by me. Information revealed in the focus group interview will not be shared with district administration by the researcher. In the process, trust and rapport are hopefully developed, and individuals within the group will agree to keep information confidential as well.

Thank you in advance for considering my invitation to participate in this study.

Sincerely,

Jason T. James
Doctoral Candidate
Clark Atlanta University
APPENDIX B

Informed Consent Form

Diversity in the Use of Technology in Instruction and Assessment
Strategies in One Predominately African American Metro Atlanta Public High School

Introduction
You have been asked to participate in a research study conducted by JASON T. JAMES, a doctoral student in the School of Educational Leadership at Clark Atlanta University. This study is supervised by JASON T. JAMES, researcher; an On-Site Research Monitor assigned by the school; and Dr. Sheila T. Gregory, supervising faculty and dissertation chair.

What is the purpose of this research study?
The purpose of this mixed method research design is to help understand the concerns of highly qualified teachers in metropolitan Atlanta who teach to low-income minority students that even after attending technology training/in-service meetings, they do not use enough technology in their lesson plans, assessments, or instruction; nor do they satisfy the technology expectations of their students or provide enough in-class computer student time. The independent variables for this study include: teacher qualification; individualized instructional strategies; group instructional strategies; in-services/staff development; class size; teacher experience; gender; age; and race.

Why are you being asked to participate?
You are being invited to participate in this research study because you are a highly qualified teacher in metropolitan Atlanta who teaches to low-income minority students. You have expressed concern that you feel you are not using enough technology in your lesson plans, assessments, or instruction; you would like to increase the computer expectations from your students and in-class student computer time.

What will happen during this study?
1. You will be asked to use Survey Monkey to complete the survey. One becomes a member at www.surveymonkey.com. Once a member, the use of the survey development begins by addressing the question, ranging from multiple choices to descriptive text with the display format. You will be asked to complete the Demographics Survey, Group Instructional Strategies Survey, Technology Instructional Survey Use, Individualized Instructional Strategies Survey, Technology Software and Hardware Survey, and In-service / Staff Development Survey and this consent form. Please do not put your name on the survey. Please complete and submit the survey by (day), (date) by 3:45 pm. 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 a focus group interview away from the school. There will be one focus group interview
Appendix B (continued)

with approximately seven to ten teachers in the group. If you would like to participate in a focus group interview, please indicate yes in the box below. If no, I thank you for considering this opportunity. I will contact you to give you the date, time, and location of the focus group interview.

☐ Yes, I would like to participate in the focus group interview

Phone number: __________________________

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

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

How long will I be in this study?
The study involves the completion of the survey and the focus group interview, to be arranged at your convenience. The survey will take approximately fifteen minutes to complete. It will take approximately forty-five minutes to an hour for the focus group interview. The total time involved in participation will be approximately one hour and fifteen 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. All student materials and information will be kept at the study site, which is the school, in a locked desk. 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 focus group will be emphasized with the participants but cannot be guaranteed. The tape recording from the focus group will be listened to only by the researcher and Dr. Sheila T. Gregory, 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 tape 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 sought from you first. The risks to you during or after your participation are considered minimal. There may be times during the focus group 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 focus group, your audio recording will not be used in the study and will be destroyed immediately after the completion of the study.

What are the benefits of this research?
The results of this research will be published in my dissertation and possibly published in subsequent journals or books or presentations. You may develop greater personal awareness and depth of knowledge about effective instructional reading practices for at risk students. The exchange of information may encourage you to employ instructional strategies that may help
increase student achievement in reading. 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. Sheila T. Gregory at Clark Atlanta University by email at sgregory@cau.edu or by telephone at 404-________. Dr. Gregory 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, understood, 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 documents.

---

**NAME OF PARTICIPANT (please print)**

______________________________

**SIGNATURE OF PARTICIPANT**

______________________________

**DATE**

______________________________

Sheila T. Gregory, Ph.D.
Department of Educational Leadership
223 James P. Brawley Dr. SW
Atlanta, GA 30315

Jason T. James

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Yes, please send a summary of the study results to:

______________________________ **NAME (please print)**

______________________________ Street Address, City, State, Zip
APPENDIX C

Teaching Practices

Diversity in the Use of Technology in Instruction and Assessment Strategies in One Predominately African American Metro Atlanta Public High School

By completing and turning in this survey and consent form, you are giving your consent for the researcher to include your responses in the data analyses. Your participation in this research is strictly voluntary, and you may choose not to participate without fear of penalty or any negative consequences. Individual responses will be treated confidentially. No individually identifiable information will be disclosed or published. If you wish, you may request a copy of the results of this research by writing to the researcher at:

Jason T. James

You may also contact my dissertation chair at:

Dr. Sheila T. Gregory
Sheila T. Gregory, Ph.D.
Department of Educational Leadership
223 James P. Brawley Dr. SW
Atlanta, GA 30315
404-880-6642

Thank you in advance for participating in this research study by completing the survey and signing the attached consent form, keeping one copy for yourself. Please return to me by (day), (date) by 3:45 pm.

Sincerely,

Jason T. James
Doctoral Candidate
Clark Atlanta University
APPENDIX D

Letter for Principal’s Permission to Conduct Study

Diversity in the Use of Technology in Instruction and Assessment
Strategies in One Predominately African American Metro Atlanta Public High School

Dear Dr.

I am seeking permission to conduct a research study at [Redacted] High School. This research will be used in writing my dissertation for the doctoral program at Clark Atlanta University. [Redacted] Institute has granted me permission to conduct this study.

The purpose of this mixed method research design is to help understand the concerns of highly qualified teachers in metropolitan Atlanta who teach to low-income minority students that even after attending technology training/in-service meetings, they do not use enough technology in their lesson plans, assessments, or instruction; nor do they satisfy the technology expectations of their students or provide enough in-class computer student time. The independent variables for this study include: teacher qualification; individualized instructional strategies; group instructional strategies; in-services/staff development; class size; teacher experience; gender; age; and race.

The research will answer the following questions:

RQ1: What are some of the factors that might influence the use of technology in the daily teaching and learning activities?

RQ2: How are teachers taking advantage of the technologies that are available to them?

RQ3: How, if at all, are technologies in its various forms, important to teacher’s pedagogy?

RQ4: How are individualized instructional technological activities an important part of a teachers strategy.
Appendix D (continued)

Participants will be asked to use Survey Monkey to complete the survey. One becomes a member at www.surveymonkey.com. Once a member, the use of the survey development begins by addressing the question, ranging from multiple choices to descriptive text with the display format. Participants will be asked to complete the Demographics Survey, Group Instructional Strategies Survey, Technology Instructional Survey Use, Individualized Instructional Strategies Survey, Technology Software and Hardware Survey, and In-service / Staff Development Survey and this consent form. Participants are asked not put their name on the survey. Participants are asked please complete and submit the survey by (day), (date) by 3:45 pm. Any coding used is simply to track which surveys have been completed. No individual data will be reported.

Following completion of the survey and signed consent form, participants will be asked to participate in a focus group interview. There will be one focus group interview with approximately seven to ten teachers in the group.

The qualitative and quantitative data will be collected and evaluated through a Demographics Survey, Group Instructional Strategies Survey, Technology Instructional Survey Use, Individualized Instructional Strategies Survey, Technology Software and Hardware Survey, and In-service / Staff Development Survey. Participants are asked to please complete and submit the survey by (day), (date) by 3:45 pm. Any coding used is simply to track which surveys have been completed. No individual data will be reported.

I assure you that rights and privacy acts of everyone concerned will not be compromised. I would like to thank you very much for your consideration in allowing me to conduct this research. I look forward to hearing from you soon. Please sign the form below and return it to me as soon as possible.

Sincerely,

Jason T. James  
Doctoral Student  
Clark Atlanta University

_____Yes, I give permission for Jason T. James to conduct a research study at [Redacted].

High School.

__________________________
Signature/Title
APPENDIX E

Focus Group Interview Questions

RQ1: What are some of the factors that might influence the use of technology in the daily teaching and learning activities?

- Interview question: What technologies are available to you right now?
- Interview question: What are some certifications, or types of technology training have you had in the last two years?
- Interview question: After attending the technology training sessions, how have you used the technologies in your instruction? How? Why?
- Interview question: Explain/Tell your experiences when attending inservices/training sessions when it comes to incorporating new technology into the curriculum?

RQ2: How are teachers taking advantage of the technologies that are available to them?

- Interview question: How do you feel about using the technology that is available to you in your instruction?
- Interview question: What obstacles are preventing you from using technology more in your instruction?
- Interview question: What current technology would you use to enhance the learning capabilities of an academically challenged student?
- Interview question: How do you use technology when differentiating your instruction?
APPENDIX F

Interviews

INTERVIEW 1

Interview I was a one-on-one interview with a Spanish teacher. The interesting thing about this interview was the teacher used PowerPoint to give vocabulary so that students could not only see the words, but also have a picture that goes along with the vocabulary lists. Students could research and write their own papers, or use Microsoft Publisher to create brochures things or create their own PowerPoint presentations. The teacher also used Moviemaker and Photo Story so that students could record skits, music, and videos. This all ties into differentiating instruction, which gives students different ways to learn. Therefore, this particular teacher did use technology with instruction.

Interviewer (After confidentiality talk) You teach Spanish?

Teacher B Yes

Interviewer What technologies are available to you right now?

Teacher B Computer, Internet, LCD projector, radio, websites, old school overhead projector, um, that's all I can think of right now.

Interviewer Okay, all right. And what are some certifications or types of technology training you have had in the last two years?

Teacher B I've taken two media technology courses at a university. So, that did media websites, Microsoft Office, um, I did another certification training for Microsoft 2007 when it came out, um, that's all I can think of, right now.

Interviewer Okay, great. I'm going to stop for one second (question about timing of the school bell). After tentative technology training sessions, that you mentioned, how have you used technologies in your instruction, how and why?

Teacher B Um, I used Power Point a good bit to give vocabulary lists, so that way they were able to see the picture and not just the words, so that kind of
helps the visual learners, um, I allow them to do research, to either write their own paper or to create their own Power Points. I've had some students that used Microsoft Publisher to create brochures for certain things we learn in class. I would like to use more of, like, the moviemaker or photo story, where they can find pictures and narrate and practice their speaking that way. Um, those are the main things, but then we do some videotaping where they record skits, things like that, music, videos, movies.

Interviewer Next, can you explain or tell your experiences when attending inservices or training sessions when it comes to incorporating new technology into the curriculum?

Teacher B I tend to do better when I attend the trainings and learn how to use it, do it step by step, learn how to incorporate it and especially if it relates to what I teach. Some trainings are more geared towards your other four core classes. Spanish and foreign language is kind of left out there but at the same time, I kind of teach all of the other classes. So, it just depends.

Interviewer How do you feel about using technology that is available to you in your instruction?

Teacher B As long as I've used it before, I'm fine with using it. New stuff, I would have to play around with it some and so I prefer to go through a class training whether it's one day or whatever so I can kind of learn and get the hang of it rather than kind of do process of elimination to figure out if I was going to teach it.

Interviewer Do you think you need more time to train on the technology (inaudible)?

Teacher B It depends on the technology, like if it's using an application like Microsoft Office, that's easy. Smart board, I know enough that I can play around with it and figure it out with clicker and things like that, I would kind of like someone to walk me through it and show me, this is the website to use, you set this up, this is how you do this (Inaudible interjection from A). I don't use those because I don't know enough about it, like, I know it's a clicker and that's about it.

Interviewer You don't feel like you have enough training on it?

Teacher B No
Appendix F (continued)

**Interviewer**  What obstacles are preventing you from using technology more in your instruction? You mentioned some of it but can you just tell me what obstacles are preventing you from using technology, more, in your instruction?

**Teacher B**  Depends on the class grouping but also depends on the lesson I'm using. Then some of the things that are available like, now, with Geography, I can use Google Earth. Google Earth would be a little more interactive if I had a smart board or something to make it a little more interactive.

**Interviewer**  What current technology would you use to enhance the learning in (inaudible) session? What current technology would you use to enhance the learning capabilities of an academically challenged student?

**Teacher B**  The computers, I would do Power Point in doing vocabulary so that way, they not only see the word and hear them say it but they have the picture to go with it. I'd do learning songs for those that learn better with music. I'd do work sheets, book work, use the internet so students kind of can do more hands on projects, do some research, videos and media so they can record skits or projects. Pretty much, I try to use whatever there is, as many different (inaudible) as possible. (Inaudible, short interjection) I'll print out pictures so they can put pictures on one side and the word on the other, things like that.

**Interviewer**  You touched on this too, but how do you use technology when differentiating your instruction?

**Teacher B**  Um, again, computers so students can type, rather than hand write, Internet so they can research, Power Point to make presentations. They can use different Microsoft programs such as Publisher for projects. Video and media to do projects rather than doing the traditional poster. Music, stereo to do songs, worksheets, bookwork for the traditional method. Bringing in actual reality of the actual objects so they can touch and feel and see the object, etc.

**INTERVIEW 2**

Media Specialist and the Network Administrator Tech Support Specialist Interview

In this interview, the Media Specialist and the Network Administrator Tech Support Specialist were talking about how hard it was to train teachers on new technology. When
introducing teachers to new technology, most teachers, especially older teachers, are not interested because they are not technology savvy and do not have the confidence to learn new technology.

Also, they believed that certain technology, such as smart boards, are tools to ‘entertain’ students and engage students rather than increasing student achievement. They mentioned how smart boards and other technologies are just a form of the dog-and-pony’ edutainment’, and if these technologies are not helping to meet the bottom line in test scores, than teachers are not willing to learn how to use technology in the class room. This is just one more thing teachers would have to do in order to facilitate learning. They said that technology is being used as a buzzword. If a school has technology, then students should be learning. The interviewees mention how these students are poor students who have little or no access to technology. And if they do have technology, such as cell phones, computers and the Internet, they are using them for entertainment purposes and social network, not primarily for school and their education.

Some Obstacles:

Money and low income and low socioeconomic status students and even low achieving to some extent, teachers are concerned about test scores. Therefore, most of the technologies that are used are test prep and applications specifically toward standard based instruction.

Where does the buck stop?

The interviewee says: It would have to roll down from the top and the administration would have to say... this is where we’re going. And I think there needs to be a committee to say... here are our options. She also mentioned that a committee be formed to give suggestions/options.

Teachers should be paid to attend summer sessions learning to use different technologies in their classes.

Interviewer (After confidentiality talk)

Teacher C  
I am the Media Specialist. This is my second year here and I am responsible for supporting the technological needs of the teachers and the students. So, I can teach software to the students. I don’t really work too much with hardware. But I also find ways for the teachers to integrate technology into their lessons and I support them in that endeavor.

Interviewer  Okay. Sir?
Appendix F (continued)

**Teacher D**  
*Network Administrator Tech Support Specialist.* Basically what I do is... everything that plugs into a wall, I fix. If it can be fixed, I still fix it. If it needs integration in some way because there are some things, old technology, new technology, you know, don't play well together; try to find a way to make it work. That's basically what I am.

**Interviewer**  
Okay. First question... What types of technology are available to you right now? If you can name all the technologies that you can think of that's available, here at school.

**Teacher C**  
*At the school, we have our desktops, which we have two computer labs. We have e-readers so Nooks and Kindles available. We had a small roll out this year. So those are only available to our AP Literature students and the Book Club students. We also have a student response systems, these are the simple, uh, plug into their wireless and they plug into the laptops and the students... it has 123-ABC on it, so it's just a simple tool for that. They also have LCD projectors. There is... that's it. Uh, no, MP3 players. I bought some MP3 players for audio books.*

**Interviewer**  
Okay.

**Teacher C**  
*And as far as I'm concerned, basically we have a very small network. Only maybe 200 computers, tops. When you add the e-readers and stuff, though, you're headed up into the 240 to 245 range. Network printers, server 2003 environment and that's pretty much it.*

**Interviewer**  
Okay. What are some of the certifications or types of technology training have you had in the last two years?

**Teacher C**  
*I'm a Certified Media Specialist, so...*

**Interviewer**  
And can you explain that?

**Teacher C**  
*What a Certified Media Specialist is? Well, back in the old school times it was called a school librarian. I still like that term, school librarian. So, I would manage the collection of books, all the books, the collection there. A research teacher teaching them how to do research. But now that we're in a digital environment it has expanded to include the Internet, computers, and technology. So, I am certified to do all of that.*

**Interviewer**  
Okay. And have you had any training in any of the technologies, recently?
Appendix F (continued)

Teacher C  They did training for the student response systems, I mean, I got my certification within the last three years, so I'm on my second year here. Only my second year at a Media Specialist. I came from the corporate environment. So, my master's training, because I have a master's degree, included information technology training. So, I can build websites, I can help do pod casts, video casts, screen casts, create MP3s, you know, video editing, desktop publishing, all that.

Interviewer  Okay. Sir?

Teacher D  Within the last couple of years, the last certification I did was network security. (Inaudible) Yeah, security, that was the last certification I did. I've been working in IT for a few years now, more like... It's been at least... it's been a long time. It's been a very long time, at least 20 years. In this particular environment, I've been here, I guess about six or seven years. So, I've been here a while. I don't know what else.

Interviewer  Okay. After attending the technology training, sessions, or certifications that you have, how have you used the technologies in your instruction? How and why? You mentioned that you do teach students or at least you...

Teacher C  The idea is to collaborate with teachers and do co-teaching. In which I would instruct students in ways to do better research, do better presentations. I just recently did a couple of co-teaching sessions where I taught the students how to use Movie Maker. So they used Movie Maker for their presentations. And they could have an option to use Movie Maker for their presentation instead of just using Power Point. So that would allow them to integrate narration, videos and music, so audio, into their presentations, you know, rather than just the slide show.

Interviewer  Okay.

Teacher C  I also do a monthly radio show with the Book Club. So that is streaming radio. That's once a month. So they read their books and we discuss them on the radio show and that's posted on the school's library website. Students can call in. They never do, but they can and when we go live, it's tweeted and it's put on face book when we go live. And it's archived, so they can listen anytime.

Interviewer  Okay, You don't really teach, you just... (referring to the Tech Support person)
Appendix F (continued)

**Teacher D**  
_No, my interaction is very limited, especially with kids._

**Interviewer**  
Right, okay. Can you explain or tell your experiences when attending in-services, training sessions, when it comes to incorporating new technology into the curriculum?

**Teacher C**  
_I have done professional development. It's very hard to... I don't do it very often and I'll tell you why. Because it takes a little while to teach a teacher how to use certain new technologies and the best time to reach all the teachers would be during staff meetings. Staff meetings are only an hour. So, if we're going over other things, you know; there usually isn't any time to go into in-depth training for a particular new piece of technology or a website or some other new thing to incorporate into their lessons. So there have been times when I have just introduced things at the staff meeting and then ask the teacher to go ahead and let me know if they would like to know more and then I would meet with them during their planning period. It doesn't happen... yeah, it doesn't happen. Because I think a lot teachers, especially older teachers are not really technologically savvy to begin with so learning something new is not always something they're willing to do or feel confident doing._

**Interviewer**  
Okay. You, again you, probably couldn't answer that question (referring to the Tech Support person).

**Teacher D**  
_Could I just have the spotlight for two seconds? I have had in-service training too and I have trained teachers or at least attempted to expose them to... not to new technology, but you see..._

**Interviewer**  
They're supposed to know, already.

**Teacher D**  
_Everyone keeps saying technology. Everything that you use from your shoes to your pen is technology. When you're talking about technology with a specific reference of a digital age, you're talking something a little different and my training was simple use. It wasn't anything fancy, it wasn't anything I would consider to be (inaudible) and w-o-o-o-o in something. No, it's just basic use. Too often in our environment, in school environments across the world, really, technology is used as a buzzword. It's not really..._

**Interviewer**  
...Useful.
Appendix F (continued)

Teacher D  It's not useful, it's a buzzword. It's not used for anything. You asked me just now and I'm sorry I know I'm going off the script, but...

Interviewer  No, it's okay.

Teacher D  You asked me just now... One of the teachers said "we don't have smart boards" you guys don't have smart boards??

Teacher C  Here's another thing. I don't believe in smart boards. A smart board is a very expensive tool used for student engagement. I'm using my little bunny ears... student engagement. Student engagement is great and I see (inaudible) use of technology to get kids interested. But we've moved from what you should be learning to entertainment use. It's like edu-tain-ment is what the smart boards are used for and at fifteen thousand dollars a pop, you know, we don't have that kind of money just to engage you when it's not really going to, you know... that may not turn into student achievement. Student engagement is not the same as student achievement. So, yeah, you're interested, but are you learning so much more so, then if I were using just a LCD projector? You know, there's research on that. But the research I read doesn't meant that the bump you get is not going to justify the cost of fifteen thousand dollars per room, you know, which we don't have, already. So, now you're talking to the teacher who is already having a hard time you know, with her students or who already has a lot on her plate, with just planning lessons and then you say, ok, I want you guys to learn this particular new tool. And they're like, okay, how is that going to help me get my bottom line with test scores? If it's not going to help me with my bottom line or if I don't see that it's going to significantly help me with my bottom line, then I'm not going to invest the time to learn this new thing. Especially if this is for the dog-and-pony edutainment thing just to say that we're using technology. And you also have to understand we're talking about different types of students. You know certain students are... if you're talking about a kind of student who has an I Phone, who is at home using their Internet for... not just their own social use, but you know, for school use as well. (inaudible) The type of student who is really digitally engaged, you know, may be able to get more out of the smart board than a student who doesn't. There are a lot of students who don't have that kind of access. They don't have smart phones, they have a flip phone they got from Metro PCS that their mom pays monthly to pay for. Sometimes it works, sometimes it doesn't. They may have Internet at home, mostly, a lot of time, what happens is, whether or not the phone bill got paid, so it's in, it's our or it may not be very good. It may not be wireless, you know, it's definitely not the
very large, broadband type of thing that you would be thinking of that they would have as opposed to what they're going to have at the school. Most of the time they're just going to have a computer they can type on. It may not have Microsoft Word. You know, it may be a Word Perfect type of situation. They use their phones for face book, they use it for Twitter. They are not used to putting a lot of effort into things they would do just for school. So, the kind of output you would think, at certain schools where the kids are really engaged and want to make these really nice desktop publishing, flashy 1-Moiv type presentations, they don't even think to put that much effort into something that you would do for school. You know, that's not even on their radar. They're more so just for fun.

Interviewer  Okay, great. I think you answered some of this but, how do you feel about using technology that is available to you in your instruction? So how do you feel about the technologies that you use when teaching students or when teaching teachers how to teach students using those technologies?

Teacher C  Well, if you're talking about things that are physical that you can hold in your hand then you're talking about the student response system ....(inaudible) the MP3 players. I can only speak to the Book Club for that. Which means that, you know, for my kids that don't read very well, or that have had issues with reading fluency or that don't read very often, audio books are great. So, they're able to listen to the way the words are put together, you know, that helps with reading as well, you know they're able to see the reading with context, so the MP3 players for those kids are awesome. We don't offer them to all of our students. We're supposed to be getting e-readers next year but we don't know how that's going to roll out, whether they'll have access to that and be able to bring them home or not. I'm not sure. The kids like them, but whether or not that translates into reading more, you know, I don't think so because these kids are already in the book club, anyway. The student response system, we have had some teachers that like to use them. Here's what I was talking about different student populations. If you have a population who is engaged already, the student response systems can be great because it gives you an immediate assessment of what's going on in the class. They like it, it's fun, great. But if you have a particular class or population of students who has issues with either discipline or attention, which a lot of our kids do, then it's a distraction. Which we don't often talk about enough... depending on the student, technology can be a distraction rather than a way to increase student achievement. It's like, oh, it's a toy, when you know
they haven't really gotten to... And so, with that, we only have two or three teachers out of fourteen that use the student response systems even though all of them have a case of them to use.

Interviewer  
Alright. Did you want to add anything?

Teacher D  
Quick one, jumping in on the smart boards. About two years ago I had a vendor in here and he and I sat and talked and we were just talking about smart boards and the possibility of us getting some. And I said, well - okay, it's nice, I know that it's useful and stuff and he said look, his daughter goes to...

Teacher D  
His daughter is in one of the better private schools in the area and he told me, himself... most of the teachers don't use smart boards. If we were to order smart boards in this building for every teacher, I know of only three teachers...

Teacher C  
That would use them.

Interviewer  
That would actually use them, uh huh.

Teacher D  
Use them. And not just use them. Use them doesn't mean just showing a movie.

Teacher C  
Or just using it as a LCD projector, which most people who have smart boards do.

Teacher D  
That's what they do. That's not what it's for. You see, again, for me, I get very excited and animated because the technology that we have is so underutilized or so misused, that it's almost a waste to have more or newer technology because you can't use what you have.

Interviewer  
Why is it so unused, though, why do you think teachers don't use the technology that you have. Why you don't think they use it.

Teacher C  
Because there hasn't been a target assessment of what the students need to use. There's certain things we need that we don't have. Like we need document cameras so that I can pull out my book and show you my book, what we're going over. A document camera. What we need the projectors that plug into a microscope so that in science class I can drill down on, you know, whatever I'm looking at, bacteria, ameba or whatever and project that and then... that's what we need. The smart board, really, even those that are using a smart board; all they're using
is for is... I've put something on the board, here's this pen go up there and circle this. Okay, fifteen thousand dollars for you to... you know? You can do that if you project onto the white board and let them circle this; okay, wipe it off. Okay, little Johnny, you come over here and underline such and such. Now we have some people like Mr. F. You may get a chance to talk to him, another time. Mr. F. has a work-around for that, where you use a wii pen, an infrared pen hooked up to your LCD projector and it will do that, you can highlight, you can click and go to a website, that sort of thing. But you know, a lot of this is, you know, the result of really good salesmen who go to the district level and say, you know, look at all this awesome stuff that your teachers could do but they never ask the teachers or the students, well, what do you need to do?

Teacher C  
That's true.

Interviewer  
Okay, let's move on. And I think you've answered some of this but I'm going to ask. What kind of obstacles are preventing you from using technology in your instruction?

Teacher C  
Money. Like we needed the LCD projectors. But see, that kind of stuff, that's not fancy, like when somebody comes, especially in this environment, that's not fancy. So at a public school level, too, if the district supervisor comes down, if the district Superintendent comes to visit your school or if, for us, if potential donors visit the school... Well, what's an LCD projector? I haven't heard of that, I don't know what that is. But if I had these shiny new Mac computers or if I had that nice new smart board that's lit up, I know what that is if I look in for two seconds. And poke my head in and ooooh, that looks shiny and new, and then leave.

Teacher D  
Even without knowing, someone comes in here and you see six kids sitting with ipads, they're like ooooh, technology, ipads

Teacher C  
There's very little ipads that add to student achievement or engagement, it's a toy.

Teacher D  
It's a toy!

Teacher C  
Because you can't write a paper on an ipad, you can't run a spreadsheet on an ipad. You can't really do any detailed math equations on an ipad.
Interviewer: So, let me ask you... You said money was one resource, what are some of the other.

Teacher C: Misused money.

Teacher D: Understanding.

Teacher C: Money and misused money.

Teacher D: You need to understand the most, I consider mismanaged, unfortunately. (inaudible). Ms. M. is the most technologically savvy and cutting edge person, she's always out there. She finds thing that... I'm looking at her like... what are you talking about? But they're always relevant to our environment. Okay, she understands. Being able to use a computer is not the same as using technology. Being able to use a computer is not the same as integrating technology into your school environment and more importantly, into kids' lives. She does it well. She knows what she's doing. Unfortunately, she's not the person who is director. As a matter of fact, let me just stick this in there. Nine times out of ten, in our environment, I don't know how it is with other people, but in our environment, the people who know are never even in the conversation as to what are we going to do going forward.

Teacher C: We've pitched stuff, we pull together and we put together a plan. But let's just say you integrate technology. So there's a website called Glockster where kids can create digital posters. So, it's a way for you to do a project where you can record narration, you can record yourself and pin it on this poster. You can put text, so you could have a portion of a paper, like the first page of a paper, your overview or summary, you can pin it up there. You can pin on YouTube videos. I pitched it to the Science team, so I did, um, yeah, I pitched it to the science team. I did one where it was based off of, I think, habitats or something. So there was... it was Ecology, so there was a deforestation video posted there. There were some definitions of what deforestation did, was written out there. There were citations pinned at the bottom. And it's a link, so you create it there, you sign in, everything is pretty easy to use. You know they're required to get so many pictures to pin on there, so much video, so much text and then they had to cite everything. I showed them a website they can use, to show them how to cite. So, that's a great way to integrate technology.

Interviewer: And so, it's Glockster?
Appendix F (continued)

Teacher C  Glogster, G-l-o-g-s-t-e-r. There’s Glogster.edu and then there’s just regular old Glogster that they could use for that but, you think anybody has used it?

Interviewer  Ha...probably not.

Teacher C  Probably not. It’s a project but for one thing, most teachers don’t know how to evaluate it. And then another obstacle is, you know, especially in this environment. Especially if you’re talking about low income and low socioeconomic status and even low achieving to some extent. Depending on how you look at it, it’s all about those test scores. So, most of our things are going to test prep and specifically toward standard spaced instruction. Now that really has nothing to do with what I’m talking about. You think it has nothing to do with that but it may take the students two or three days to understand how to copy and paste and embed and all of that. You know, that is a little bit of a learning curve. And they don’t want to waste that, either. They don’t want to waste that kind of time or they don’t feel that um, they know enough to want to invest that kind of time for the students to do this kind of project. Now, some teachers are willing to do it because they like new stuff, they like to add new things, but depending on where you are, those teachers may or may not be encouraged to continue to do that sort of thing, especially when it comes to the bottom line, which is test scores.

Interviewer  What current technology would you use to enhance the learning capabilities of an academically challenged student?

Teacher C  You remember I talked to you about the MP3 players? MP3 players are not... they are cheap. They’re not super fun I guess, when you’re talking about ooooooh, new technology or things like that. But you can get an MP3 player for twenty dollars and you can load their books onto the MP3 player, every novel that they’re supposed to be reading for class. They can have that and they are dramatized, most of them are dramatized as well. So, it’s word-for-word, any novel that they’re reading. If I have a trouble understanding vocabulary, even if I don’t understand context clues, if someone is reading it to me, the way that the word is said may trigger something. And it’s easier for me to follow along as they are reading, rather than be getting behind, trying to read it myself and not understanding and me getting frustrated because it’s boring and you know, wanting to put it down, so that helps... if you’re talking about struggling readers or students who don’t have a lot of background in vocabulary. Or if you have students who have English
Appendix F (continued)

as a second language. That could help them, as well, to be able to keep up with the other kids and know what’s going on. Now, if you’re talking about a different kinds of learning styles, that’s when you’re talking about things like the Glogster where I can use pictures and I can put things together, you know, that can help with those kinds of students. But as far as, like special education, you would probably have to ask one of the special education student, uh, teachers or whatever because they have specific technology that they use, that they would need but when it comes down to divvying out the money for that, they are the last ones to get access to stuff. Especially in this kind of environment... it’s always that somebody else is supposed to pay for it.

Interviewer Let me ask you something because I’ve heard you say money, you’ve referred to money, a lot, time, you know, technology being too expensive. My question is... So, what is, I guess, needed from people like you, teachers, administrators, to say, okay, look, we don’t need smart boards. We need a, b and c and this is how... or I guess, can you say... this is how we’re going to use this technology? I mean, where does it stop? You know what I’m saying?

Teacher C The buck stop?

Interviewer Do you know what I mean?

Teacher C It would have to roll down from the top and the administration would have to say... this is where we’re going. And I think there needs to be a committee to say... here are our options.

Interviewer Do you mean a committee, like locally, at the school?

Teacher C Yeah, at local at the school, there could be a committee of teachers, media specialist, network administrator to come together and say... this is what we want to do. As far as really integrating it into... what we would need is a teacher’s boot camp. Professional development that’s like a weeklong. You know, like if we’re talking about what we really need. You know and it doesn’t take very much to do it because I’m talking about just a couple of days but a couple of days where that’s all we do. We go over, here is how... because I have teachers that barely use email, who don’t even use LCD projectors. You know, when you talk about technology... that’s collecting dust in the room. They are still up at the board, you know, printed out sheets, and you know, a chalkboard and handwriting. That’s all they do and they get decent results when you’re talking about achievement. So, it’s not, you know,
whether or not they’re able to do their jobs, it’s just what they’re used to doing. Now if you want to get them to move into the digital age, then to get that person along with the one who’s on the cutting edge, who just got out of school, who knows all the new, fancy stuff to do... We all need to be able to go over... Here’s all the stuff we have in the school. Here’s how you use all the stuff in the school. Here’s how you use all the stuff in the school in your particular subject. Here’s a simple lesson plan of what you would use. And let them know this is not so hard. You can integrate what you already have into your lessons if you would just take a look at this, that, and other and then have a day or two where you do specific planning where they’re required to present... Here’s my lesson plan where I’m going to be using such-and-such technology in my class room.

Interviewer Okay, so do you think that, once again, you know, the money issue, do you think that will play a role in it? Like if you say, okay, we’re going to have a weeklong or two weeklong training session, boom, boom, boom. You know, maybe in the summer, maybe, I don’t know... on a break or whatever. Cause teachers, you know, they want to be compensated. So, do you think that would be an issue or a problem to do something like that? Do you think teachers would want to get paid to come to those training sessions?

Teacher C Yes, they would want to get paid, you have to pay them to just show up anyway. That’s not the problem and we have. I think we have enough professional development days in the year to support such an endeavor. It just has to be a plan. A lot of people say they want technology but they don’t want to plan to use it. They want to just say... oh, well let me go buy this little piece of...

Teacher D Let me go buy five smart boards, (laughter, inaudible) We need five smart boards and then we have technology.

Interviewer Yeah, and then they go put them up in the teacher’s room and that’s it or they’ll have someone come in for half a day to say... oh, this is the fun stuff that you can do with the smart boards and there are tutorials on line. So, now, on my off time or I’m supposed to figure out how to use this on my own time. No, it needs to be structured just like you would teach a child, how to do something, is how you need to teach your adults how to do something.

Teacher D Woo Woo – Sorry. Um, you know that doesn’t work. You cannot teach a teacher anything because they know everything. (laughter, inaudible)
What she is saying there... I swear to you, I have had at least five in-house trainings (whispers: nothing... nothing, it doesn't work). It does not work. And so at some point (inaudible) she makes a point that is very valid... She says train the teachers but I think it's more like train the district or the administrators in terms of its communication and training as well. What are you looking for and then... We say, well, that doesn't work, what you're looking for, if you give us this, that doesn't work. We need this.

Interviewer Do I hear you saying you need a liaison between locally, the school and the county, and the board, you know, to basically, you know is this what you are saying? To kind of train or teach or inform the county. You know, look, this is what I'm getting from the school, locally, from the teachers, from the administrators. This is what we need, because you know, they have... the resources. They have the power. They have the power to make it happen, basically. Is this what you're saying?

Teacher D It does but the people at the top are making decisions in isolation. They have no, I mean literally, no clue. And, I'm talking about this in our very small circumstance, we're very small. I can only imagine at a district level, how much worse it is in terms of communication. It's probably a thousand times worse.

Teacher C Let's take for example APS. Assigned ipads. My husband has one, ipads, to all the teaches. So they all had ipads to use but no training on how to use it. All the teachers have them but were never trained.

Teacher C They never had any training on what to use it for. So, um ipads, how much are ipads a piece? You're talking about thousands and thousands and thousands of dollars. Based on something, where it's like, maybe you can use it maybe you don't. You know what he uses for? Email.

Interviewer Angry birds?

Teacher C Angry birds. You know he's got a couple of different apps with education. There are very few. Now, in the future, there may be something to use but we're like, ooooh... but when that comes around, there's going to be an ipad 4 or an ipad 3 that does all of that and it will be obsolete, where I've got all these wasted funds. Now, when I'm talking about money, too, I'm not saying that... for some things, we don't have enough money for. And for other things, the money is wasted. Uh, because there's no plan. And you're talking about the district and I think things need to be more localized. Because even with
the stuff that the district gives you, even with them gifting all these ipads without any instruction. If you got together with IT or a technology committee that got down to brass tax and sat down and said look, I found all of these apps. Because there are different ones. There's a behavior app, that you can use, one of our teachers found where instead of having to write down disciplinary sheets on paper and handing them out to students, or you don't have to track so many times that a student misbehaves or this, that and the other documentation so that when you finally do give them detention or suspend them, you have to have all that documented, you know, what did they do, when did they do it? What kinds of things did you respond with even for response to intervention. What kinds of, you know, the child was having issues with this, that or the other... What kinds of intervention did you give them? All of that can be tracked on the app, easily where it's like I just point and click and find the classroom, class name, you know, I have these little check boxes, I did this, this and this. Log it. It's there so when it comes down to having to move forward with whatever next level, next step there is... you say well on, you know, you had a meeting with the parent... you say, well on January 16th little Shelly threw a spitball at Shauntavis in class and he was asked to sit in the corner. You know, I didn't do anything that day. Well, you know, you're trying to suspend my child. You say well, on January 17th little Shelly, you know, punched Shauntavis in the arm and he was given detention and didn’t show up. All of that is there instead of you having to have a file and so it's a lot easier for the teacher to put together. That kind of stuff is there but you have to have somebody to go and find that. And you have to have somebody to present that to the teachers and say look, here, use this so that you can make your lives easier.

Interviewer

Right, right. Okay. Last question. How do you use technology when differentiating your instruction?

Teacher C

For me, I don't usually do that but let's say that for our class (inaudible) the movie maker presentation; the kids for that particular class... it was an English class, though I've done movie make for other classes too, that's not for every student. That's what I tell the teachers when I tell them I'm going to teach it because it's more involved than power point. So, every student is not going to want to do it. Every student is not going to be able to pick it up fast enough to get your project turned around in the time that you need it and you're not going to be able to spend a whole week on just learning movie maker. It's an hour presentation, to learn it, maybe two. I only do that for a subset of the classroom. So, I may present to all of them but they are given the
Appendix F (continued)

option to work on just a slide show. And some other students have said, well, I don’t want to do a slide show at all, can I do a paper? So, those kids are able to do a paper. So, in that same classroom, you may have somebody doing the movie, some doing a power point, somebody doing a paper. You know, somebody doing some sort of multi sensory, you know, built project where they cut out a paper and glue and popsicle sticks. You know, all of that is in the same classroom.

Interviewer
Okay.

Teacher D
I think when you’re talking about differentiating instruction, it’s a very buzzy wordy to me because I know it’s something that we all try to do because basically as a teacher, what you try to do is to teach to everyone’s level. That’s where the differentiation comes in. I know how my wife does it. That may not apply here. Basically what you do is... in our environment, that’s the nice thing about computers, you have different levels in most websites and you have different sites that may be appropriate. For example, I can’t read. So, I can’t read, so you show me something with pictures. She loves to read. So her website or the site that you would use with her would have more words and more verbiage and you know, it’s easier. That’s the way education is differentiated, using technology as far as I’m concerned. That’s just me.

Interviewer
Oh.

Teacher C
There is a science class; right now they’re doing an ABC book for biology. Specifically on genetics. So the bulk for the classroom can do it any way they choose. They could cut and paste out of magazines. They could possibly create a slide show and be able to do that. And for those students that have IEPs, they actually, on the back of their sheet, if they flip it over; all of their words are already picked out. Whereas everybody else has to go find the different words, you know, like A is for atrophy. You know, they may have to go look and see what that has to do with genetics. But those other students are like look, here are all your words, A to Z. I don’t want you to have to worry about finding those words for yourself or wondering if they’re going to fit. You could choose these other methods. So that’s differentiated instruction

Interviewer
Okay. That’s it. That’s all I have. I can’t thank you enough.

INTERVIEW 3
Appendix F (continued)

This group of English teachers was very verbose. They had a lot to say about the kinds of technology they use in the classroom and how they use it to help facilitate the learning of their students. One of the most interesting things about this interview was how they used technology to help students with learning disabilities. For example, one teacher used music to hook a student into the 1920s era of the blues that tied the story, *To Kill a Mocking Bird* into the lesson. The student made a PowerPoint presentation and incorporated music recordings with history and biography, and images of the great fathers of the blues. Also, in differentiating institution, The English teachers would give some background information about the jazz age in the 1920s, do a short five minute lecture, a PowerPoint presentation and then show the same information in a video clip.

(After confidentiality talk)

**Interviewer** If you would, just tell me your position and, you know, what you teach; and then, I’ll start with the first question.

**Teacher X** *I teach English (should I say which English class?) And I teach mostly 11th and 12th graders.*

**Interviewer** Okay

**Teacher Y** *I also teach English. I teach World Lit which is mostly 10th graders and I teach AP Lit which is seniors.*

**Teacher Z** *I’m the department (inaudible) and I also teach all of the ninth grade. And I sponsor the yearbook.*

**Interviewer** Okay. Great, all right. So, my first question is, to everybody... What technologies are available to you right now? Anybody can start.

**Teacher Z** *I’ll start. Laptops for all the teachers. For my journalism class I have a mini lab, here in my classroom that I, piece-by-piece set up this year during the first semester; with eight PCs – Internet capable, wireless. My laptop is wireless through a wireless router in another classroom for this wing. We have access to printers in pretty much every classroom. We have a computer lab available to us next door to the library, our media center and we also have a classroom full of computers in the library, itself. So two different classes can bring their whole class and do something in the media center, usually a whole grade. Except for the freshmen, which is a large class. There are 72 freshmen. But we bring all the 10th graders at one time to be on the internet, all the juniors or all the seniors at the same time. I think 11th and 12th grade could probably be there at the same time. All, again,
Internet access. Most of the computers are a more recent operating system. I think probably about half are 2010, for Office and 2007 operating system. I know these computers. Some of them are XP, some of them, most of them are 2003 operating system but 2007 Office. I don't know of any Apples that we have except for, perhaps, we have an additional lab where the computer classes are actually taught in Mr. X’s class, he has a full set there. I don’t know how up-to-date those are. I imagine they are probably our most up-to-date computers but I could be wrong. We're getting a mini-Apple Lab. I don’t know if that’s happened yet or not for X. And that’s about all I can tell you. My journalism class, the yearbook is produced online through the publisher’s website, so it’s all digital. We have hard copy pictures, we have to scan them and make them into digital jpegs. We’re excited to get our Nooks today. I require the kids to have everything typed, they don’t turn in any... projects are typed, not handwritten. If they do a presentation, it needs to be, you know, a slide show with full credits, sources, that kind of stuff. They use a combination of sources, both Internet sources which we talk extensively. All four years, I think we can agree, all of us really stress the importance of scholarly sources vs. all the rest of the Internet. And, um, but we also have at our disposal EBSCOhost and a host of other data base sources that are available to us through the library as well. We have a library link on our school website.

Interviewer: Okay. Can you explain what Nooks, what are the Nooks? What is that?

Teacher Z: Okay. A Nook is basically, well technology is becoming so blended now a days and with hybrids of things. A Nook is an e-reader but it’s more than an e-reader. You can download books to the Nook to read a book on a small tablet, basically. A tablet, being a flat laptop with a touch screen but you can also access the Internet. You have the capability of a touch keyboard with the Nook. It’s like a little, small laptop that you’re holding in your hand. It’s a handheld computer, basically.

Interviewer: Did any of you want to add to the available technologies to you right now?

Teacher X: I was just going to add, about the LCD projectors that we have to shine on our screens and on our computers. That’s very good for Power Point presentations and streaming video clips and anything else that we want them to see on the computer. Seeing that they do not have a computer in front of them, it allows us to show them whatever we would like them to see, maybe, on the computer screen.
Teacher Y  Doc, a joke, about our windows don’t open and our doors do. But the pretty much already covered all the electronic cool stuff that we have.

Interviewer Okay.

Teacher Z  I’d like to add one other thing that we have and it’s a resource that we have in our media specialist. She’s an invaluable resource for us. I just took my students to her last Friday. Every period had a lesson in Movie Maker. She’s awesome and um, not just a slide show but a movie maker show that’s got the music, that’s got the video clips embedded, that’s got all those things. That’s what the ninth graders are doing for their next project. And so, even though we’re limited as far as some of the hardware that other, more, well budgeted schools might be as far as... I came from an early college in Louisiana where every kid was given a laptop. That’s their textbook, that’s their everything. The textbook is either downloaded from a CD onto their laptop or we would, the class would access the book online. The local cable company provided a grant so that students families, um students who were basically Title I students, they were provided with basic Internet service in their home, for free, so that they could get to the Internet and do their homework. So, this school doesn’t have that, yet, but for what we do have, we’re able to get around a lot of the lack of hardware, in other ways. And a good bit of that is because of our excellent media specialist.

Teacher Y  Agreed.

Interviewer Okay.

Teacher Z  And I don’t mean to hog the conversation, sorry.

Interviewer What are some certifications or types of technology training have you had in the last two years?

Teacher Y  I can start that. I’m the only one of us that was actually still in college two years ago. So, I used a pro, what’s it, Providian boards. Not Promethean, he’s the dude that brought fire. Providian boards and Smart boards, a lot. I get them confused, really (inaudible). I use those a lot and I had a lot of technology exposure while in college and during my apprenticeship at schools I worked at. And I would love for us to have those here but I did have a lot of exposure to those, learned how to create a Wiki website, like a Wikipedia thing. I don’t remember it now but I did know how then because I passed the class with an A. And we learned how to, we had to design our own web pages, which I of course
forgot how to, until Ms. X showed me how to do it again and I've already forgotten how to do it again but um, so, I've had those trainings. As far as just technology, that's about it, for me.

Interviewer  Okay.

Teacher X  This is my first year here, so I guess the training that I'm thinking of didn't occur here but I did get some technology training if we count some of the Excel training that I did for data analysis at my last school and again with the websites, I basically have a training on that every year.

Interviewer  So you have training on the websites every year?

Teacher X  Yeah, well, like how to manage and well, build and manage your website, my personal teacher site, that's... I think I go through that every year and also the electronic grade book training, every year.

Interviewer  Is that, what you’ll have, is the electronic grade book training every year? Or is that just you?

Teacher X  Uh, we had it here and at my previous school.

Teacher Z  The website training we had here... I have not had formal grade book training here, but I had it at my old school in X. Because they were just cutting to Infinite Campus. So, I had the training there but didn't use it until I got here.

Interviewer  What's the grade book system called?

All  Infinite Campus

Interviewer  Infinite Campus. Okay.

Teacher Y  Which would technically be a training that we have, we don't have to write it all on paper. (Inaudible).

Interviewer  So you say you all have the grade book training every year?

Teacher Z  I haven't seen any Infinite Campus training here.

All  talking (inaudible)
Teacher X  I was just counting when the lady came from the...

Teacher Y  You know, I forgot about that (laughter, inaudible)

Teacher Z  There was a woman that came from the district but there was an issue with the Internet that day so we didn't get a whole lot

Teacher X  It's more like navigating the grade book.

All  Talking over each other (inaudible)

Teacher Z  It was a basic primer; here's how you put your grades in and take attendance. So, That was it.

Interviewer  Okay.

Teacher Z  I forgot about that

Interviewer  After attending the technology training sessions, how have you used the technologies in your instruction? How? Why?

Teacher X  Run that by me again...

Interviewer  Okay, I'll repeat it (repeated question).

Teacher Y  Well, if we're referring to the one about Infinite Campus, it really doesn't effect instruction, it effects what we do with the grades (inaudible) because that's the one that we use for our grades. We get (inaudible) assessments and what we do with those. And that was helpful to figure out how we we're going to do... with those because the department determined what percentage that was going to be and we could set that all up. Honestly the only other thing it's helped me to do is to inform my students, I give them a report every couple of weeks. That tells exactly what their grades are but that one doesn't really have a major impact. Projectors, on the other hand, we use, a crap load for Power Points and things like that. When I was trying to instruct my little cherubs how to write a proper essay, I literally wrote one, right in front of them, on the projector. I just made it up as I went, and so that helped them see, okay, this is how he's formatting it. And I would show them, step-by-step how to format it in Microsoft word because it has to be in MLA format or I don't take it and so that way, they have no excuse. They've seen me do it. I've given them a handout that describes it step-by-step. And then I actually typed it in. And so,
something as simple as the projector can be massively helpful for little things like that, that they may not have picked up in 9th grade or 8th grade or wherever they were supposed to pick that up.

Interviewer  
Okay.

Teacher X  
I was just going to say that as far as a website is concerned, I haven't done a...

Teacher Z  
Our department is the worst at keeping our websites posted.

All  
Laugh (inaudible)

Teacher X  
Like keeping up with posting the most recent information because it's not like something I can really quickly do. I feel like I have to go in there and spend time that I don't really have that I could be using planning what I'm actually going to be doing in my classroom. So, so far, this semester, I try to go on and post different sheets, paper sheets that I've handed out to the students just in case they lose their projects and stuff like that. I try to post those in there but I don't think I've used it in the same way that I was probably trained to use it.

Interviewer  
The technology that you use,

Teacher Z  
Email.

Interviewer  
How are you using it within what you are teaching? Within your instruction?

Teacher Y  
I've got an example that I'd kind of forgotten. The web pages. This is my webpage. If you go here to my message board, that is if I can actually operate the thing and although I've gotten lazy on actually putting the correct units, let's look at AP Lit, and World Lit the Honors class and AP Lit, they have postings due, every week. That's a lot of prompt. So, like the most recent one was Beloved posting two.. The initial prompt was... on Sunday night at midnight, this answer is due. One of the major things in Beloved is slavery's destruction of identity, find one quote from the novel that supports this theme, parenthetically cite this quote in MLA format and then respond (inaudible). They have to reply by Thursday night at midnight to people who posted before.

Interviewer  
And this is on your website?
Appendix F (continued)

**Teacher Y**  
It's on my class website. And respond to three of your classmate's postings supplying additional quotes that support this theme. There will be a total of four quotes per person, one for the initial posting and one for each of the three responses and although some of them weren't great with the parenthetical citation, most of them did a pretty good job and so I have all these quotes here. They post by book number so nobody has a clue who they are. Now, I do have one guy that just insists on his making his be a link to his email address. And that one's a girls but most of the time... it's by book number, so nobody outside would have a clue who is posting... it's just... who is 22?.

**Interviewer**  
Let me ask you so, are all the teachers required to have a teacher's website?

**Teacher Y**  
It's a matter of how much we utilize it, that's up in the air.

**Interviewer**  
And who creates that?

**All**  
We do.

**Teacher Z**  
We have a contract, not a contract, but we pay a fee for a teacher's site and that's switching next year, we're going to be utilizing the Google, uh, what's it called?

**Teacher Y**  
I don't know, I didn't even know we were doing it (inaudible).

**Teacher Y**  
We have a technology committee right now consisting of Dr. X and four other teachers, four teachers and we're looking at things to implement for next year because, one, the teacher website is very cumbersome and a lot of people don't keep up with it and um it's just do dang difficult to do anything. You can't do anything quickly with it.

**Interviewer**  
How do you get your information, do you actually...

**Teacher Z**  
We go in an do it'

**Interviewer**  
You go in and do it.

Overtalking and inaudible

**Teacher Z**  
I was required to have a teacher website. I was required to do this at two of my previous schools but the programs were a lot easier to use. And so, it was just a daily thing, you go in and you do whatever you did
that day; you update it so that kids that who were absent know what they missed. If they missed any handouts. If you lose a handout, don’t come ask me for one. Go print one off the website. It’s a communication tool. And this particular program has not been popular. Some teachers are better at it. Some teachers post it every day. I don’t know how they do it, frankly. Because it just takes so long. To do one little thing to post, it takes forever and so we end up not using it a whole lot. I use email instead. Any kid that is absent, I send an email every day with attachments with all the handouts and whatever they missed.

Interviewer: And what’s the name of the program?

Teacher X: I think it’s called Teacher Sites

All: Teacher Sites (Inaudible – talking over each other)

Teacher Y: TeacherSites.schoolworld.com

Teacher Z: And if you go to our main school website and click on teacher sites, is one of the links. On there, you’ll see every teacher listed with a link their web page and also their email address.

Interviewer: Okay, all right. Any other... Oh, I was going to ask you about... like have you incorporated like Wikis or anything that you’ve learned, like when you were in college?

Teacher Y: Not really, um, I would love to do something like a Wiki or a blog or stuff like that but as far as technology, you mean? You’re not talking about any old thing, you’re mean technology, specifically, right?

Interviewer: Uh Huh

Teacher Y: Pretty much no, um, it’s interesting, it’s a practice used in most of my college classes in upper/under grad and then for my masters. And we had postings required all the time, for everything. And so, I realized how much discussion could be done without me even being involved. It gets back to that whole facilitator role which we’re pushing more, towards and so I realized that was a way to kind of get them thinking in that way. Especially my honors kids because they’re in tenth grade, they have two more years. By the time they’re seniors, that’s what it’s gonna be. We facilitated, they need to kind of drive their own learning. That’s what they’ll do with this and I try to give them tips on how to do
a good strong post. A reply is not... good idea dude. It's something that adds substance to the conversation. And I'm training them, kind of like I'm training my two year old to use the potty. (laughter). Except, she's a little more messy.

Interviewer Gotcha

Teacher Z I think there's a real disconnect. They're both relatively new teachers. I've been teaching for 22 years. There wasn't even Internet or anything like that. I learned to spreadsheet on Lotus 123, Version 1.1.

Teacher Y I remember those.

Teacher Z And Office hadn't been invented yet and so I just happen to like technology and I've always made it a point to keep up with it. But the vast majority of teachers who have been in the system as long as I have are not as comfortable with the technology. Some are, some aren't. And I think there's a real disconnect between those who see technology as a useful tool. It's not the end point. You're not learning these things on the computer just to say you know how to do those things. You're learning them because it becomes a tool and it's a paradigm shift. For people like him, it's a given, these kids need to know this. They need to be able to blog if that is the way they are communicating now a days. Meeting students where they are, there are a lot of teachers, even a couple of teachers here, who have a real resistance to taking that step. Because they don't understand... that's reality now. You know?

Interviewer Why do you think that's so? You think they're just afraid of it?

Teacher Z People don't like change. People, especially teachers, especially long standing teachers... You know, I just talked to my kids today. I'm sure you've seen that video on Did You Know. The video called Shift Happens. And you've seen it...either you've seen it or you're just laughing at the name. (laughter)

Teacher Z It originally came out years ago. It's been a decade ago (inaudible) updates and I showed it to my students because I've been having some behavior problems and wanted them to understand; there's a time and a place to work and there's a time and a place to play. There are some teachers who are still stuck in the mindset that... where I was growing up, it was still the industrial age, who ever knew the most, won. Teachers who grew up in that mindset are used to being the expert. They don't understand that we are now more facilitators to student
learning to become life-long learners; than we are the lecturer in front of the class of all knowing resource for them and it requires a very great paradigm shift. And a different way of looking at it, that some teachers... and this is everywhere. I've dealt with it everywhere, I've dealt with it in X. I literally had one teacher who came to me to help her with everything, technology wise. She was just... I don't need to know that, you know? She's soon retiring, thank goodness, you know. (laughter) But, it's a necessary tool, not just a cool gimmick, anymore.

Interviewer: Okay.

Teacher X: And not just teachers, but administrators, too.

All: Over talking – Inaudible

Teacher X: Not here, I think we're all on board with technology, well not all the teachers but administration (all talking at once - inaudible)

Teacher X: Some other schools are not like that.

Interviewer: Okay

Teacher Y: (Inaudible) My cell phone was new, about 15 years ago and I refused to send or receive a text message of any kind (laughter – inaudible) I'm sorry. But if I can go there and make my students post online and respond to them and have conversations with them and integrate that, then anybody can.

Interviewer: Right.

Teacher Y: Because I hate it. I hate the fact that when I buy a brand new printer and when I get it home, it's already a fossil. Irks me.

Interviewer: Okay. Let's move on. Next question, explain or tell your experiences when attending in-services or training sessions when it comes to incorporating new technology into the curriculum?

Teacher Y: I don't think we've done that, specifically here(inaudible) done that in a while(inaudible).

Interviewer: When it comes to incorporating new technology into the curriculum, can you just tell your experiences when attending in-services training sessions?
Appendix F (continued)

**Teacher Z**  It depends on the quality of the in-service. Because in some in-services, I don’t think they take into account the varying levels of expertise and so where we go to one in-service and it might be something that’s truly for beginners. Well, I think most of us here, aren’t beginners. You know? And, like I consider myself pretty savvy. I don’t want beginner classes. Tell me what I need to know but tell me at a level that’s useful to me, that’s going to propel me forward.

**Teacher Y**  If it’s 3 hours, I want the three hours to be useful, not useful for 30 minutes and two and a half hours to be stuff I already know.

**Teacher Z**  It depends on the website, like, well, for the Infinite Campus training. For those of who have used Infinity Campus, because I used it last year, I don’t want another beginner class. I need you to tell me, what are some of the cool things Infinity campus can do for me regarding the reports that are available, uh, data aggregation, different things, that as a beginner, don’t tell me that; that’s way too much information. But now that I’ve got the basics down, I can do my grades, I can pull my grade reports. I can do my attendance... now what else could I do? So, if there were a series of Infinite Campus trainings and it took into account, you know, where do you need to be? That would be much more useful.

**Interviewer**  Okay.

**Teacher Y**  I agree. I really don’t know what I could add to that.

**Interviewer**  We don’t have to limit it to Infinite Campus

**Teacher Z**  No, I was just using that as an example. (inaudible – speaking over one another)

**Interviewer**  You can speak freely about some of the other technologies.

**Teacher Y**  Would that jigsaw thing we have count? I think that jigsaw thing was pretty... I want to see something that will actually see the benefits in my students doing and myself doing. I would want to see how it would make my job... I don’t want to say easier cause that’s impossible, but to make it more engaging, because in the end it’s about engagement. If our students aren’t engaged, you know what, we’re screwed, the end. The guy from Dead Poet’s Society, he was screwed too.

**All**  Laughter
Appendix F (continued)

**Teacher Y** That’s why he stood on tables and acted like an idiot. That’s why I act like an idiot, that and a lot of head injuries. But, I think it’s about engagement. I think that Jigsaw could do that. I don’t want to do it about something that’s totally useless. It was a program that, uh, it had, like multiple windows in it and you could have like a video or slide show going here and then you could have students responding to questions down here and over here, was a... yeah, I can’t remember what was in that block. Oh, down here was like a list of different resources that they would need to bring home with them. It was like a way to... so they could use a laptop or something and do all their work over the laptop and you could actually teach the class through the laptop.

**Interviewer** Oh, okay.

**Teacher Y** So that way, let’s say, you know that little Bobby is sick that day and doesn’t school, then he can hop on and he can watch it and see the transcript of the entire class of what they missed in class. Every question, every discussion, including a video of me, teaching.

**Interviewer** Okay.

**Teacher Y** Let’s face it, who doesn’t want to see that? (laughs - inaudible) Couldn’t help myself.

**Teacher X** I think generally speaking, like generally speaking, I think that technology workshops I’ve been to for incorporating specific pieces of technology in the classroom have not... well, I feel like they give you... like a session, like one session. Then they expect me to take that, go back to your school or teach everyone and everybody’s using it and everyone is happy and we just got some new technology - yeah. And in some cases, we’ve just spend thousands of dollars and teachers are not using it because they really haven’t taken the time to properly train the teachers. I think with teachers, technology really takes some time to learn how to incorporate it.

**Interviewer** So you think there’s not enough time in those sessions to learn what you need to learn in order to confidently take it back to the classroom and use it?

**Teacher X** Yes and that’s true in most professional development. I think in teaching because I think we are always pressed for time and to me, not a whole lot happens over the summer, when we have time. So, during
the school year, you go, you have a planning period, or you have even a
day and in a lot of cases, that's not enough time to truly learn. It's up
to that individual teacher, like she was saying to go back and keep up
with it, really learn it. And a lot of times, teachers aren't going to
spend the time to do that unless it's something they really like.

Teacher Z They see it often times as just another thing on the to-do list, to
incorporate it. Because you're asking me to change gears, change cars
in mid-race. You know if I do this in my nine months, when I'm running
full speed for nine months and now you're asking to change cars, you
know, it's not going to happen. You know? And it's difficult, the way
we have our education system set up today. I wish teacher in-service
were two weeks, like before we started school, I wish we had two weeks.
Not that I want to come to school two weeks earlier, but, so that, if
we're going to do a lot of training so that... okay, you've given me this
thing to do, now give me the time to set it up. You know? Don't' tell me
on Tuesday, that on Wednesday, I'm going to start using this. Just like
we have to step the kids through, step by step... at a late rate that's
(inaudible) them at a rate that's a little uncomfortable but not
overwhelming. We need the same thing and we don't always get that.

Interviewer Okay.

Teacher Y Can I add just one more thing about the Kindles and how we're going
to have a month to fiddle with them...

Teacher Z The Nook.

Teacher Y The Nook. Why do I keep doing that? (inaudible) The Nooks that they
give to teachers a month to fiddle with the and sort of learn how to use
them and we'll have like one person from each department (I want to
talk to you guys about that, by the way) to do a lesson for the month of
April.

Teacher Z You could do that.

Teacher Y Oh, is that okay? Unless you've got a plan. That's why I didn't want to
put it on somebody, I didn't want to steal anybody's thunder, you know.
And gives us an opportunity to come and experiment with it and use it.
That's what we need. We need time to integrate it and figure out... how
can I make my class better and not just different cause different is great
at Arby's but it really doesn't matter to me. Better, matters to me. And
so, I think as an example, the Nooks will do that.
Appendix F (continued)

**Interviewer** Okay. I have about four more questions. How do you feel about using technology that is available to you, in your instruction? How do you feel about the technology that's available to you in your instruction?

**Teacher Y** I want more technology available to me.

**Teacher Z** I came from a school where every kid had a laptop and everything was digital and I miss it.

**Interviewer** Okay, so, you love it?

**Teacher Z** I love it.

**Interviewer** I'm talking about what you have right now that's available to you right now... you love what you have but you want more?

**All** Talking over each other - Inaudible

**Teacher Z** We love what we have but we want more. I feel like it's not enough. I had to step back, what I'm teaching these kids because when every kid has a laptop and we can go to the Internet, every moment becomes a teachable moment.

**Interviewer** What is enough?

**Teacher Z** What I had at my early college, where every kid had a laptop and we all had access. Were there those kids who sat in the back and went to Google and Face Book, yeah, but those were few and far in between. Because after a while, they realized they were getting left behind very quickly. And if a kid says... what's this? I no longer have to be the expert. I can say... I don't know, let's Google it and see. You know, being able to facilitate their understanding of why everything on the Internet really isn't true. Some things are, some things aren't. How can you tell the difference? Being able to facilitate that with them in real time. I guess that's the biggest thing, the real time aspect of it. Because, again, just like when we get an in-service and then we have to go do it and it's like what did they say, I forgot. Students do the same thing if you're giving them something and they don't have the equipment there to do it with, right then, in the moment, doing it.

**Interviewer** Pardon?

**Teacher X** Um...
Appendix F (continued)

Interviewer The question was, how do you feel about using technology that is available to you, in your instruction

Teacher X Um, well I think I come from sort of the opposite from where Ms. G comes from. So, I didn’t come from a school with a whole lot of technology. It was a nice, beautiful school but they didn’t have a whole lot of money left over for technology. So, I really enjoy having projectors here, having more access to computers even though we have a couple in our classroom and I enjoy having a laptop to be more mobile with. And I feel like I can integrate technology a lot better here at the school. So, I really like what we have. I still want more. I think that we can do a lot more with technology here at the school, especially with our science and technology focus. So, I hope that we do get more but I like what we have.

Interviewer Okay. What obstacles are preventing you from using technology more in your instruction?

Teacher Y Money

Teacher Z Money

All Together Money

Teacher Y Easiest answer, ever.

Interviewer Okay

Teacher X And time, also, I think is important too. We already spend so much time doing, like grading, for instance, and planning.

Interviewer Is that the only obstacles?

Teacher Z Time and money because when you have technology in your classroom, there’s an inordinate amount of time of preparation that goes into a seamless lesson. When you have technology, when everything is so fast, you really have to plan well and be prepared and that does take more time, sometimes than we’re given.

Interviewer Okay.

Teacher Z That’s just the reality of it.
Appendix F (continued)

**Interviewer** All right. What current technology would you use to enhance the learning capabilities of an academically challenged student?

**Teacher Z** Say that again, please

**Interviewer** What current technology...

**Teacher Z** Current technology in the world? (inaudible)

**Interviewer** That you’re using. That you have, here locally at the school.

**Teacher Z** What current technology...

**Interviewer** What current technology would you use to enhance the learning capabilities of an academically challenged student?

**Teacher Z** Gotcha

**Interviewer** Now, you can speak on the current technology, locally and then if you want to... kind of elaborate and tell me maybe some technologies that you don’t have, that you, that would be useful for academically challenged students?

**Teacher Z** I have an example for that. I have a student right now who is very academically challenged but also very musically inclined. And we’re reading a novel. We’re on a novel unit. We’re reading... To Kill a Mocking Bird. And so their project is an exploration of the south during the 1930s. Dealing with both the depression and also with Jim Crow’s segregation laws and all that goes into that. And so, I offered to him, as his project, a history of the blues. The development of the blues in the south. And he jumped all over it. He’s going to make a multi-medial presentation where he’s going to incorporate music recordings with a little bit of the history, the biography. You know, images of the great fathers of blues. And mothers as well. And it connects to the topic but hooks in a way that otherwise, I couldn’t have hooked him if YouTube and those kinds of things were not available. You know what I mean? That was one easy way to hook him into that.

**Interviewer** Okay.

**Teacher Y** I have an example. When I was... during my apprenticeship (inaudible) ninth grade, I was doing The Most Dangerous Game, a short story and we used it to establish ideas and setting and scene. And we had a
Appendix F (continued)

Providian board in the front and so what I did, is, as we read, I drew, with my amazing art skills, which don’t exist, a... outline of the island and I made little stick figures of all the main characters. I had them all over there. I moved them around the island, each event of the plot. And so, the setting was, you know, the island and everything that’s going on. The scenes are all the individual events that happened in different locations. And I would do little crappy drawings. I would move them around and help the kids who really were poor at reading to follow what the character was doing and where they were going and since, the only reason we read it (inaudible) in ninth grade (inaudible) in the beginning of the year. We were still establishing the concepts of settings and scene. Their final project was to create a poster which establish setting an scene, depicting the island, just like I did on the board. And so, that seemed to help a lot of them because it had something tangible they could see. And then I would say, okay, (whispers... what was his name) (inaudible chat with Teacher Z) Bradford... (inaudible) Anyway Rainsford and Webber. (inaudible). Now, where did Rainsford go next? And the student would walk up with the little pen and they’d grab Rainsford with the pen and drag him to his next location. And then they’d tell me what happened at that location. So it was really... it them an interaction which made them engage more. Because normally to them, it’s just, it’s the Charlie Brown teacher. Waah Waah Waah, I couldn’t have learned from that because it sounds like a horn and everybody else was in the room waah waah waah, they couldn’t learn that either. But they could learn that cause they got to manipulate it and do stuff like that.

Interviewer Okay.

Teacher X We’re still talking about technology for challenged students, right?

Interviewer Yeah.

Teacher X Okay. I just wanted to make sure. Okay, so I was thinking that some of the ways I usually do that is if a student is struggling and I’m talking about, like, we’re in class today and they’re struggling on a specific subject. Sometimes, with the two computers I have in my classroom, I may allow one or two students to use some internet resources to learn a little bit more about a specific subject or if there was a concept they didn’t get I would allow them to use internet resources for that. There’s a lot of internet resources about different novels out there. Sometimes I allow them to do a little research on their own, to figure that out. Also, I use audio book technology so I do use audio books when necessary. I
Usually don’t use them for the whole class or for an entire reading of anything. But I will use it for understanding like in (inaudible), the dialect is difficult in some parts of the book, so we’ll listen to it to give them a better understanding. So, there’s a couple of examples.

Interviewer: Okay

Teacher Z: Remediation and Enrichment are the two biggest areas where we use technology for academically challenged students on either end of the spectrum. And for remediation, we study Island, USA Test Prep, where the kids have access to academic games. They can do, just practice and testing but there’s also a gaming component which they’re all comfortable with but with the academic focus where they’re actually learning, we’re mediating, that way, as well.

Interviewer: Okay... any other technology that you can think of that you use to help academically challenged students? You study Island, USA Test Prep, you know, audio...

Teacher Z: I use pretty much anything with all my kids. Each kid is different... (inaudible)

Teacher Y: (Inaudible) what doesn’t work for one, the next thing you use may work for them...

Teacher Y: The drawback about talking to English teachers is we talk a lot and um, how many more questions do you have?

Interviewer: I have one more question.

Teacher Y: Oh, good because I was worried about your time (inaudible).

Interviewer: How do you use technology when differentiating your instruction?

Teacher Y: I can say something very fast on that one. One thing I don’t like about technology, which is very different from me just grabbing a book and reading it and discussing it, which is my wheelhouse, is, it really does in many ways, work on its own. I have a student whose eyesight is absolutely atrocious. You get those Nooks and you can just blow that text up, no problem and you can just function like anybody else. Generally we use the technology that’s easy to grasp (inaudible)...everybody can use it and go at different levels. I think
that's a little more difficult to do when you're actually talking and
lecturing and teaching constantly. Where I would say something and it
would be up on the power point, so you've got the visual, you've got the
auditory. I can say it again, in a different way and then come up with
another way to do it. This would give us another way to reach someone
who is struggling. And, so I think it helps, in general, I don't think
there's a negative side there. If they can learn to use the actual
technology considering I don't know a kid in the school that doesn't
have a cell phone and knows how to text while I'm not looking at them.
I think that technology isn't going to be an issue. So.. (inaudible)

Interviewer Do you have anything that as far as differentiating...

Teacher Z I do, I have... I saw a squirrel and forgot the question... so
(Inaudible – Laughter)

Interviewer How do you use technology when differentiating your instruction?

Teacher Z Technology is just a tool so I would do it the way I would differentiate
any lesson that I would differentiate.

Interviewer Can you give me an example?

Teacher X While you're thinking I'll just say... So, if I am trying to give some
background information about the jazz age in the 1920s or something
like that, I may do a short, five minute lecture on it. I may show a
power point presentation on it where they're taking notes and then I
may give them the same information in the video clip. Okay, so...

Interviewer So you cover it in different ways.

All ...Over-talking each other.

Teacher Y (Inaudible) I try to use multiple things that still express what we're
trying to get. So for the one person or two people who might not get it,
we can use another medium that works for them.

Teacher Z And I was doing what we often do which is making the question much
harder than it was. (talking over each other, laughter).

Interviewer Thank you so much.
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