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Abstract

The purpose of this qualitative study is to investigate how the use of technology may increase student engagement and learning in urban schools, as perceived by administrators, teachers, and students. Engagement Theory informed the design of the study and interpretation of findings and the literature review provides a context for pursuing this investigation. A qualitative study approach was used to discern stakeholders perceptions of the use of technology to increase student engagement and learning across three urban high schools in the Metro Boston Area. The degree to which the use of technology has contributed to student engagement in learning and student learning across the three constituent subgroups was the subject of this investigation. An analysis of administrator commentary, teacher interviews, and students self-reporting of engagement and learning identified the major challenges associated with technology integration and determined that the effective use of technology is important for student performance. The analysis further determined that the use of technology can improve teacher effectiveness and enhance student engagement, if used well and effectively. The findings from this study will be presented to inform educators on the potential of technology to engage students and enhance their learning.

*Keywords:* student engagement, technology integration, engagement theory, urban schools
Acknowledgments

This doctoral thesis is dedicated to my wife, Dr. Keren Zuniga McDowell, and my parents, Fredrick H. McDowell and Elizabeth Johnson McDowell.

I am truly blessed to have Keren Zuniga McDowell as my loving wife, best friend, and partner in life. Her prayers and confidence in me have helped me push through and accomplish more than I ever anticipated. I am truly thankful to have a partner who believes in me, supports me, and encourages me to follow my dreams. I am eager to begin our next journey together. I could not have completed this task without her.

A parent’s love cannot truly be measured. With each passing day I appreciate the love and support given to me by my parents. I am thankful for my parents making sacrifices to provide my sisters and I a stable home with strong morals, values, and a sense of purpose. I am also thankful for my parents instilling in us a strong belief in family, education, hard work, and determination. My parents constantly pushed us to go above and beyond and to exceed people’s expectations.

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Chapter I: Introduction

Problem of Practice

How do educators improve student learning in urban schools and encourage students to be successful? There is growing consensus that two key implications for learning have contributed to the underperformance of urban schools: lack of motivation and lack of student engagement (Goodenow, 1992; NRC, 2003; Uekawa, Borman, & Lee, 2007; & Curwin, 2010). Researchers in general, have maintained that U.S. high school students are not fully engaged in classroom learning (Newmann, 1992; Shernoff, et al., 2003; Uekawa, Borman, & Lee, 2007). Wanting to learn versus having to learn is also a concept very familiar to educators across the country. It has become more critical than ever to find or create innovative ways to engage students in effective forms of learning. Otherwise, disheartening results such as a 50% drop-out rate in many urban settings will continue to be the norm, and students’ future pursuits will be limited as a result of not attaining a high school degree no less a college degree.

Student motivation can be defined as a process that elicits, controls, or sustains certain behaviors whether they are individual, strength-based, or persistent (Carlson & Heth, 2009). Urban schools, like all others, have students who are highly motivated, students who are occasionally motivated, and students who are unmotivated. Traditional bribery or punishment models have not generated long-term, nor have they held students’ attention; therefore schools are in need of solutions that draw upon what students already find engaging (Uekawa, et al., 2007 & Curwin, 2010). Depending upon hope and enjoyment means that school systems now acknowledge and understand the present situation, the needs of the students and appropriate supports, and what truly motivates students to be successful. Finding the proper motivation to engage students begins with building hope, believing in students, and remaining persistent.
(NRC, 2003; Curwin, 2010). Actions can be taken to build experiences that truly involve and engage students by making their education relevant.

Schools possess the ability to ensure that classroom experiences are motivating and energizing while providing rigorous academic content that moves students toward proficiency. Some of the challenges to student engagement and low motivation are: rigid curricula, lack of differentiated instruction, lessons disconnected from students’ lives and interests, broken connections between school and home, low expectations, inappropriate standards, and inflexible policies. Eliminating practices and procedures that interfere with students’ desire to learn is the first step to increasing motivation and encouraging student achievement (NRC, 2003; Uekawa, et al., 2007 & Curwin, 2010).

Educators have been intrigued at the potential of technology to transform education by improving student learning. Perhaps the purposeful use of technology may be the solution for tipping the balance between the achievement gap and student performance in urban schools (Hew & Bush, 2007; Cakir, Delialioglu, Dennis, & Duffy, 2009). Due to the pace of the industry, scholar practitioners continue to explore the potential of instructional technology as a platform to increase overall student performance. Further exploration of the implementation of technology in urban schools could prove beneficial to increasing student achievement and begin addressing aspects of the achievement gap. The current student generation is fully immersed in technology, while thinking and processing fundamentally different than their predecessors. It is this new digital language that must now be integrated into traditional schooling (Prensky, 2001). In addition, it is important to acknowledge the role technology will have on development of student culture. There is also a body of research that focuses on school factors that have the greatest effect on student achievement, particularly in a technology-enhanced learning
environment. Such factors include, but are not limited to: gender, grade point average (GPA), technical skills, motivation, reason for taking courses, and career goals (Cakir, Delialioglu, Dennis, & Duffy, 2009).

With increased access to technology in schools and the availability of Internet access at home, additional time and attention is needed to determine the effects technology will play on student engagement and learning in the future. Access to knowledge is the first step, but students will need more than just access to information (Domine, 2010). The term Digital Natives has been given to the generation of students who have never known a time without being immersed in technology (Prensky, 2001). For the purpose of this paper, the term Digital Natives will be interchangeable with the term Millennials. Digital Natives are fully versed in the digital language of computers, video games, and the Internet. There has not been sufficient exploration into the education of these digital natives. Students come to school and unplug, rather than power up and use the technologies that are integrated into their daily lives. Digital Immigrants refers to the generation not born into the digital world, but has become fascinated by and adopted many of the aspects of today’s technology (Prensky, 2001). However, there is a clear distinction between the two. Digital Immigrants have learned how to adapt to their new environment, and Digital Natives know only their current reality. Digital Immigrants speak an outdated language and continue to struggle to teach a population of Digital Natives that speak a new language. If school districts truly wish to reach Digital Natives, they will have to change how they deliver educational services (Prensky, 2001).

Millenials are defined as American teens and twenty-somethings that are transitioning into adulthood at the start of the millennium (Taylor & Keeter, 2010). This subgroup is described as being more ethnically and racially diverse than their predecessors, less religious,
less likely to have served in the military, and on track to become the most educated generation in American history. This generation is further characterized as the “always connected” generation immersed in digital technology, social media, multi-tasking, and handheld devices.

Technological and generational changes often collide with each other. This is evident by Millennials’ embrace of the digital age. Millennials have lead technology enthusiasts with the broad adoption of the Internet and mobile phones (Taylor & Keeter, 2010). Millennials outpace older Americans in virtually every form of Internet and mobile phone use. Millennials’ positive view of technology translates into pervasive social behaviors that have a direct correlation to their overall expectations for the classroom. The overall impression of the majority agreeing that technology allows people to use their time more efficiently, while bringing people closer.

Millennials’ lifestyle differences also stand out from previous generations due to how they choose to divide their time. While the majority of Americans watch more than an hour of television, read a daily newspaper, and send/receive emails, fewer watched online videos, post messages on social networking sites, or played video games. Millennials on the other hand, watch videos online opposed to watching television, post messages on social networking profiles opposed to reading a newspaper, and are twice as likely to play video games and send text messages opposed to sending/receiving emails (Taylor & Keeter, 2010). It is also important to note the characteristics of Millennials in order to begin understanding their learning needs.

For the purpose of this paper, student engagement is defined as how involved or interested students appear to be in their learning and how connected they are to their classes, school, or each other. The level of student engagement is increasingly seen as a valid indicator of academic success (Axelson, 2011). Student engagement is further clarified as the willingness of students to make the psychological investment required in gaining knowledge and mastering
skills (Wehlage et al., 1989). The National Survey of Student Engagement (NSSE) measures student behaviors highly correlated with desirable and personal development outcomes. These behaviors include faculty-student contact, participation in collaborative learning experiences, and number of hours spent on homework (Axelson, 2011). Student engagement is further defined as the extent to which students take part in educationally effective practices. The current generation is transliterate; possessing the ability to read, write, and interact across a range of platforms, tools, and media. As such, learning environments must incorporate technologies that lead to greater student engagement.

**Significance of the Problem**

Many passionate scholar practitioners hold to the concept that doing the right thing for students should be the fundamental principle when providing educational opportunities. They often subscribe to the belief that the needs of the future should and must determine the learning environment. In the past, studies have shown that when students fail to achieve, it is a function of the opportunities they have versus the ones they don’t. The variance in students’ exposure, experience, economic resources, teacher qualification, curricula, and parental involvement often dictate the level of success they can hope to have with their education (Milner, 2010). Rather than focusing on the achievement gap, focusing on opportunity might be more productive. There are a host of instructional resources that can lead to opportunities and exploration into educational technology that may provide the solutions to such gaps (Milner, 2010).

In a 2010 video address, President Barack Obama stated, “Unless we take action – unless we step up – there are countless children who will never realize their full talent and potential.” The Obama Administration is calling for a reform in America’s public schools that delivers 21st century education to prepare students for success in the new global marketplace (Department of
Ultimately, the learning environment must be based on a design that will inspire the student to seek education and intellectual development (Dewey, 1915).

The Achievement Gap refers to disparities in academic performance between the various subgroups of students. This term is most often used to describe performance gaps between White, Black, and Latino students, primarily from low socio-economic backgrounds. This is consistent with the majority student demographic within many urban schools (CDF, 2011). In the United States there has continued to be a drop out epidemic. Despite the national graduation rate being 74.9%, Latino students graduate at 63.5%, and Black students lag behind at 61.5% (Aud et al., 2011). Currently more than 1 million or 6% of all students ages 16-19 are not enrolled in school. While 2.1 million or 13% of all American high school students are enrolled in 1,634 dropout factories. Among these dropout factories, 35% of the students are Black and 29% are Latino (Aud et al., 2011). Such alarming statistics have long-term financial consequences such as: decreases in earnings by educational attainment, decreases in lifetime earnings, increases in poverty, and increases in social services participation (Aud et al., 2011).

Students in the United States have continued to lag in comparison to its international counterparts in Reading, Mathematics, and Science. Students in the United States have lowered in their rankings among 34 member countries in the Organization for Economic Co-Operation and Development (Fleischman, 2010). The problems within the American education system are not constrained to the high poverty, high minority schools. With respect to Programme for International Student Assessment (PISA) results, of the 34 member countries, American schools are tied for 7th place with 14 member countries, rank 18th in Math, and 13th in Science (Fleischman, 2010).
National Assessment of Educational Progress (NAEP) results from 2011, show the achievement gap narrowing in urban districts from grades 4-8 with higher scores than 2009, however by the time students get to high school, the results in reading and mathematics remain flat (Aud et al., 2011). No matter how the data are presented, students in the United States, particularly in urban school districts, perform at lower levels than students in other countries. Despite such gaps, urban students deserve an opportunity to develop capacity to be successful within the global economy (NRC, 2003). Presenting key gaps in performance targets and their implications for urban education will be important when determining possible solutions for school reform efforts.

Many urban students, Black males specifically, are in a state of crisis. They consistently do not have the same opportunities as their White counterparts throughout the country. Many urban students live in single parent homes, are less likely to attend early childcare development programs, and are more likely to live in poverty. At most levels, these students have negative odds stacked against them. Such obstacles have contributed to an overall lack of engagement in their schooling. National Assessment of Educational Progress (NAEP) data highlights that many of our urban students are not performing academically. This has resulted in 30 percent of all Black males being educated in the United States (Lewis, et al., 2010). Although many urban students have made progress, this lack of learning significantly contributes to reductions in urban student postsecondary experiences, professional degrees attained, wages, and living conditions (Lewis, et al., 2010).

Existing achievement gaps have created a gap between actual and potential output in the economy (Baum & Payea, 2004; Belfield & Levin, 2007; Hanushek & Woesmann, 2008). Finding ways to close the international achievement gap between the United States and higher
performing nations could boost U.S. gross domestic product (GDP) as much as $2.3 trillion, or 16% (McKinsey & Company, 2009). Further reports link educational achievement to economic output, estimating that closing the achievement gap between white students and their Black and Latino peers could increase annual GDP by as much as an additional $525 billion, or 4% (McKinsey & Company, 2009). The persistence of the achievement gap between America’s White students, Black students, and Latino students have caused the U.S. to fall behind other industrialized countries according to the 2009 Program for International Student Assessment, often referred to as PISA (Hanushek, et al., 2008; OECD, 2010).

Lack of student learning and the achievement gap further contribute to a U.S. workforce that is not globally competitive. In the landmark report, *A Nation at Risk*, the achievement gap was highlighted as the widespread public perception that something was remiss in the U.S. educational system. The National Commission on Excellence in Education sought to solicit the support of all who care about the future of the country by assessing the quality of teaching and learning, identifying educational programs which result in notable student success, and assessing the degree to which major social and educational changes have affected student achievement (National Commission, 1983). An income achievement gap continues to exist across the lifetime of such students contributing to less achievement and less attainment. The income achievement and academic achievement gaps directly correlate making poor Black and Latino students among the most vulnerable. These achievement gaps have implications that grow over time as diminished skills and performance reduce national income and economic growth. (Hanushek & Woessman, 2008; Palmer et al., 2010). An international consulting firm conducted an independent study that identified that the economic impact of the achievement gap can be computed by linking student achievement and earnings to GDP. The study argues that if the
achievement gap identified in 1983 had been closed prior to 2008, United States GDP would have increased between $1.3 and $2.3 trillion. The financial benefit of greater educational output from low-income Black and Latino students is estimated to increase GDP by as much as $525 billion (McKinsey & Company, 2009).

**Intellectual Goals**

Twenty-first century learning systems may have the ability to elevate the U.S. educational system to the next level. However, traditional schooling environments often lag behind in the successful integration of technology inside and outside the classroom. Further study can be used to explore the integration of technology and its ability to influence student achievement in urban school environments. Online delivery of instruction is a developed and tangible solution that provides opportunities for students currently being underserved, or ill served by existing educational institutions. Some educators shy away from using technology because they simply do not know how to implement with fidelity. However, the benefits of technology infused education far outweigh the risks of not moving forward due to lack of technological literacy. The primary element in student learning is content. The content is then developed based on the curricular needs and learning objectives of the students as they relate to the common core standards.

**Practical Goals**

Technology integration is defined by the activity technology enables, and not the actual technology itself (Oblinger, 2004). Despite the type of technologies available to improve student learning, technology is merely a tool to accomplish such goals. This paper will focus on technology representing the means and not the desired outcome. There is also a strong body of evidence to support that the benefits of a technology rich environment can be significant, but
there must be purposeful thought into the instructional strategies needed to deliver core academic content. It is further argued that learning is influenced more by instructional strategy and content than the type of technology used. With the breadth of online resources available, technology can be further clarified as a vehicle to drive instruction and not the sole influence on student achievement (Ally, 2008).

**Research Question**

My research question evolved from the synthesis of my intellectual and practical goals and the theoretical framework guiding my focus:

How does the use of technology impact student engagement and student learning in urban schools, as perceived by administrators, teachers, and students?

**Theoretical Framework**

When seeking to investigate the relationship between technology use and its influence on student engagement in urban schools, Engagement Theory was the most appropriate framework to support this study. Although not directly derived from other theoretical frameworks for learning, it has much in common with many such frameworks: Online Educational Theory, Constructivist Theory, and Situated Learning Theory. Each of these theories shares a common focus that emphasizes meaningful learning, collaboration among peers, and self-directed learning. Engagement Theory, however, emerged from direct experiences in early electronic and distance education environments. The theory’s fundamental principles state that students must be engaged in meaningful learning activities through interaction with others and worthwhile tasks. Such task is possible without the integration of technology, however bodies of research show that technology provides flexibility and can facilitate engagement in ways that are difficult to achieve otherwise. The increase of access to technology, digital media, and online education
has brought forth the emergence of engagement theory as a means of providing a framework for technology-based teaching and learning (Kearsley & Shneiderman, 1998). Engagement theory also emphasizes collaboration among peers and the learning community while being aligned to situated learning theories. It further focuses on experiential learning similar in nature to theories of adult learning. Engagement theory seeks to understand engaged learning opportunities that depend on active cognitive processes such as creating, problem solving, reasoning, decision-making, and evaluation (Kearsley & Shneiderman, 1998).

The Theory of Engagement focuses attention on student motivation and the strategies needed to increase the chances that classrooms will be positioned to increase the presence of engaging tasks and activities (Schlechty, 2002). The Theory of Engagement operates from a number of assumptions that identify the way school tasks and activities are designed, acknowledges variance in the quality of activities and to what level of effort students are willing to invest in the task, and student decisions regarding personal motivations and consequences of doing the task assigned (Schlechty, 2002). This framework is consistent with Kearsley & Schneiderman in that for engagement to exist, the student sees the activity as personally meaningful, the students’ level of interest is sufficient despite task difficulty, the student finds the task sufficiently challenging, and the task is worthwhile.

Kearsley and Schneiderman explain that student engagement is critical to the learning process. Although student engagement can still happen without technology, integration provides flexibility and additional possibilities that contribute to student learning. The authors further proposed three basic concepts of engaged learning: 1) Relate: learning through collaboration, 2) Create: learning using a project-based approach, and 3) Donate: learning using an authentic focus (Kearsley & Shneiderman, 1998). The first principle, Relate, discusses the importance of
collaboration. The authors argue that educational activities must emphasize a team approach that focuses on communication, planning, management, and social skills. Studies suggest that collaborative learning forces students to clarify and verbalize their problems, thereby facilitating their own solutions. Collaboration further facilitates an increase in student motivation, a key factor deemed important to the overall performance of urban students. Principle 2, Create, describes the need for project-based learning. In order to engage learners, activities must be creative and purposeful. When students are given the opportunity define, organize, and complete their own projects, students are able to take ownership in their own learning. This provides a stark contrast to the student response derived from pre-fabricated lessons in the textbook. Student ownership of learning provides greater engagement whether they choose the topic or not. Principle 3, Donate, identifies the need for the projects to be relevant and meaningful, while allowing students to make a useful contribution to their own learning. This contribution provides an authentic experience that seeks to increase student motivation and overall satisfaction. The authors further argue that the relevance of student-designed projects must also be aligned with the concept of preparing students for the new knowledge-based economy (Kearsley & Shneiderman, 1998).

Jones et al. (1994) provided a broad framework for engaged learning consisting of 26 indicators in 8 categories: (1) learners are responsible for learning, and must collaborate with each other; (2) tasks for engaged learning should be authentic, challenging, and interdisciplinary; (3) assessment shall be performance based and seamless with the standards-based curriculum; (4) instructional models should be interactive in design; (5) context for learning shall foster collaboration and knowledge building so that diversity is valued; (6) grouping will be heterogeneous; (7) teachers are to serve as facilitator, guide, and co-learner; and (8) students are
to serve as explorer, teacher, and producer of knowledge. This premise is founded on the belief that teachers must design, develop, implement, and assess a learning process that focuses on the overall engagement of students.

Willms et al. (2009) defined a framework of student engagement at three levels: social, academic, and intellectual. Social engagement described as the sense of belonging for students in their school life. Academic engagement described as engagement in academic activities at school. Intellectual engagement described as the cognitive factors to increase understanding, solve complex problems, or construct new knowledge. Hurdly et al. (2003) defined a framework for engagement to include behavioral and affective factors; behavioral engagement to represent the actions of students remaining on task for activities and the minimization of disciplinary problems and absenteeism; and affective engagement to represent the attitudes of students about learning and their intrinsic motivation.

Students are motivated by educational experiences that are joyful, enriching, and transformational. They seek to increase their knowledge and skills, while building a sense of accomplishment. Engagement Theory is relevant to this study because it attempts to explain some of the factors that contribute to student performance in urban schools. The researcher seeks to understand the relationship between technology use and student engagement and to what extent does technology influence engagement and learning. It is also the hope of the researcher to confirm some of the assumptions surrounding the importance of technology in urban schools. This understanding will drive decisions regarding further study and investment.

**Chapter II: Literature Review**

The literature review for this study reveals the limited nature of the research conducted in this area. The underlying principles for the investigation centered on the use of technology to
influence student engagement and student learning. Much of the research presented speaks in general terms or focusing specifically on a single tool for technology. The studies did not present in the literature review a clear definition of technology usage as a cohesive strategy, nor do they outline to what extent did the instructional technology influence student outcomes. Existing research is also limited in nature regarding successful implementation in urban schools regardless of student outcome.

There is a body of evidence to support the call for change in the areas of 21st century skills and technology for the purpose of student engagement and academic achievement. The review of the literature is driven by guiding questions that revolve around student engagement and learning in urban schools and the use of technology to influence both student engagement and student learning in urban schools in particular. It is important to explore the range of factors related to technology use and student engagement with the hope of identifying various themes needed to appropriately address such challenges. In this section, several topics in the literature will be presented, including: (1) Student engagement in urban schools, (2) Student learning in urban schools, (3) The use of technology to increase student engagement and student learning, and (4) The use of technology to increase student engagement and student learning in urban schools. In this section, a review of the literature in each of these areas will be presented.

**Student Engagement in Urban Schools**

Student engagement is generally hard to define. While there is general agreement that student engagement produces positive outcomes, defining the concept is problematic due to the dimensional nature of engagement. There are several categories of engagement: academic, cognitive, intellectual, institutional, emotional, behavioral, social, psychological, and etc (Fredericks, Blumenfeld, & Paris, 2004). Anderson, Christenson, and Lehr (2004) divide
engagement into four types: behavioral, academic, cognitive, and psychological. Despite the common elements, there has been no agreement on whether a learner needs to be functioning in all areas of engagement for learning to take place. Harris (2008) points out that some view the categories of engagement in a hierarchical manner, placing greater levels of importance than others. Finn (1989) places great significance on academic engagement with regard to learning activities and behavioral engagement when participating in non-academic pursuits. However others don’t assign levels of importance, but feel that each level is equally important to student engagement (Fredericks, Blumenfeld, & Paris, 2004). All authors note the need for further research and collaboration with a unified search for a clear definition of engagement.

Motivation is essential to learning at any age (Finn & Rock, 1997). Successful learning requires active engagement, regardless of socio-economic status. The fundamental principles of student engagement are applicable to all schools whether urban, suburban, or rural (NRC, 2003). Despite the importance of the engagement of all students in all schools, the impact of disengagement is quite substantial. Disengaged students in high poverty, urban schools are less likely to graduate and suffer long-term consequences. The lack of a high school diploma significantly increases students’ risk of unemployment, poverty, poor health, and criminal involvement (NRC, 2003).

There are ranges of environmental factors beyond the control of schools that contribute to disengagement. Marginalized communities are often adversely affected in terms of academic engagement and achievement. An engaging school community with high academic standards, quality instruction, and a comprehensive support system can minimize such marginalization. Even for those who remain in school, urban students often have alternate activities occupying their time and attention, including part-time jobs, video games, social functions, and for some
criminal activity (NRC, 2003). A national survey of more than 2002 students in grades 3-12 found that 40% of the students worked a median of 3 hours on an average school day, and spent 2 hours socializing. The median number of hours worked by Black students was 4 hours. Compound the fact that the average teen watches more than 4 hours of web video content or television per day, teens of color watch more than 5 hours (Rideout, Foehr, & Roberts, 2010). Despite its contribution to learning, homework ranks low on the priority list due to the time constraints of other endeavors (Cooper, Lindsay, Nye, & Greathouse, 1998).

Increasing motivation and engagement is unlikely to be accomplished by raising standards, promoting accountability, or increasing school funding, despite each variable being helpful in the right circumstance. The challenge presented focuses on setting circumstances in which students take pleasure in learning and come to believe that the information and skills they are being asked to learn is meaningful, relevant, and reasonable (NRC, 2003). It is essential that active engagement exist in order to motivate students. Students in high-poverty urban high schools are more likely to be disengaged; therefore identifying the right combination of circumstances may prove helpful.

Poverty conditions affect urban students’ opportunities to learn with many students having poor skills, experiencing failure, and an overall lack of enthusiasm about school. Urban is defined as coming from families with income below the poverty line, attend schools with high percentages of poor students, live in distressed neighborhoods, and are from a racial or ethnic minority group (NCES, 1996). The obstacle of poverty is profound and must be included in any comprehensive approach to improving student engagement and motivation to learn (NRC, 2003). Despite such adversity, further study is needed to better engage adolescents in learning. Various studies have found that high schools often fail to engage their students, by not providing them
with the social, emotional, and behavioral support that is conducive to learning (Finn & Rock, 1997; NRC, 2003). Low motivation, however, is not unique to urban schools. A 3-year study found that half of the students reported taking school seriously, which was equally true in suburban and urban communities (Steinberg, Brown, & Dornbusch, 1996).

Studies up to this point have not produced definitive prescriptions to motivate students to be engaged, but do provide insight into further inquiry (NRC, 2003). Developmental studies show declines in achievement motivation and engagement as students continue to progress in school. Schools serving adolescents at greatest risk of becoming disengaged are likely to attend large, impersonal, highly controlling schools that convey low expectations for academic success (NRC, 2003). The current state alludes to the fact that there is profound alienation from school for the majority of students, leaving them with no trajectory of sense of where school might take them (NRC, 2003).

There is consistent acknowledgement of the importance of student engagement for learning and achievement (Steinberg, Brown, & Dornbusch, 1996). Successful school completion is highly dependent on the level of student involvement and participation in the schooling process. High engagement during tasks has been a key predictor of motivation and commitment suggesting there may be additional factors to consider such as relevance of instruction and student perception of control (Shernoff, Czikzentmihalyi, Schneider, & Shernoff, 2003). Student engagement may also be affected by instructional format and subject matter, which are variables primarily controlled by the teacher. However, studies have consistently reported that students are more engaged in student-controlled versus teacher-controlled learning.
Student Learning in Urban Schools

Urban education is founded by the notion of empowering professionals as they work to cultivate intellect and enhance the socioeconomic mobility of marginalized urban students (Kincheloe et al., 2006). Teachers operating through the lens of critical urban pedagogy conduct research into the social and educational problems, design curricula, and build coalitions of scholars to address the learning needs of students. Advocates of critical urban pedagogy argue that the fundamental principles of urban school reform must be clear, transformative, and pragmatic (Kincheloe et al., 2006). Urban schools lost their sense of direction as many urban centers deteriorated in the mid 20th century. This fragmentation delayed the development of intellectual, social, and political goals for urban education (Irvine, 1991; Kincheloe et al., 2006). School reform was introduced without answering the questions: What are the intellectual goals; what does it mean to be educated? What are the social goals; what changes in the domains of race, class, language, and power need to take place? and What are the political goals; how do educators circumvent the obstacles to systematic reform in city schools? Advocates of this multi-tiered approach must develop ways of answering these questions in order to provide assistance to school leaders, community members, teachers, parents, and students (Kincheloe et al., 2006).

Academic underachievement is one of the many problems facing urban schools; particularly those who serve large populations of Black and Latino students (Rueda & Dembo, 2006). Such populations tend to earn lower grades and drop out more often than White students (Haycock, 2001; Snyder & Dillow, 2010). These achievement gaps have been the cause of great concern across various groups in American society. Solutions to address such challenges often vary greatly throughout the country. The school reform movement has focused on producing theory-based systematic efforts in their approach to this dilemma. Such reform efforts include,
but are not limited to: clear academic goals, aligned educational standards, multiple measures of student achievement, proven professional practices, investments in professional development, technology infrastructure, and leadership models. Greater emphasis must be placed on how and why students learn opposed to what they learn (Garibaldi, 1993; Rueda & Dembo, 2006).

Attention is needed to the comprehensive challenges facing Black students in the United States. National Assessment of Educational Progress (NAEP) data highlights that Black males perform lower than their peers throughout the country on almost every indicator (Snyder & Dillow, 2010). There are numerous factors that have contributed to this dilemma: Readiness to Learn, National Assessment Data, College and Career Preparedness, School Experience, and Postsecondary Experience (Lewis et al., 2010). Large numbers of Black students continue to live in poor conditions. Significant numbers live in poverty, lack postsecondary education, and fail to participate in structured early childcare programs at the same rate as their White counterparts. Achievement gaps between Black males attending large city schools and White males in national public schools continue to be wide. Black males who were not eligible for free/reduced lunch had similar reading and mathematics scores to White males who were eligible for free/reduced lunch. A similar pattern emerged when comparing Black regular education students to White students with disabilities (Snyder & Dillow, 2010).

Black males were also more likely than their White peers to drop out of high school and not graduate. In 2008, Black males were twice as likely to drop out of high school than White males. Fewer Blacks take Advanced Placement (AP) exams with fewer enrollments in two- or four-year colleges after graduation. 60% of AP exam takers were White, 15% Latino, 10% Asian, and 8% Black. In addition, Black males scored an average of 104 points lower in Reading, and 120 points lower in Mathematics on the SAT, and 6 points lower in English, 5
points lower in Mathematics, and 6 points lower in Reading on ACT exams. With 3 out of 10 Black males enrolling in four-year institutions compared to 4 out of 10 White males (Snyder & Dillow, 2010).

Black students are less likely to participate in academic clubs, are more likely to be suspended from school, are more likely to be retained in their grade, and are likely to report incidents of violent crimes than their peers at other schools (Lewis et al., 2010). In 2004, Black students were less likely to participate in academic clubs at 17% while 45% of Black students participated in sports activities. Low income Black students were more likely to be retained during their K-8 experience. In 2007, 23% of students retained were poor, 16% were black, compared to 5% of non-poor and 8% of White students (Snyder & Dillow, 2010). In 2008, urban schools reported a higher rate of crime than schools with fewer minorities. Gang activities were more likely to be reported by urban schools, high percentages of minorities, and high percentages of free/reduced lunch compared to other types of public schools (Snyder & Dillow, 2010).

Post secondary experiences are also areas of major concern for Black students. Black males had significantly different post secondary experiences than their White peer. Graduation rates were lower, unemployment rates higher, earned lower income, and were more likely to be incarcerated (Lewis et al., 2010). In 2001, college graduation rates for White males were 50% higher than Black males. 15% of Black males graduated in 4 years compared to 33% of White males graduating in 4 years, and 50% graduating in 5 years (Snyder & Dillow, 2010). Unemployment rates for Black males ages 20 and over were twice as high as White males of the same age. In 2009, 20% of Black males age 18 or over had either some college or a college degree. 10% of Black males earned bachelor’s degrees, compared with 18% of White males.
Black males 18 and over were more likely to have lower income than White males with similar educational backgrounds (BLS, 2011). In 2008, Black males ages 18 and over represented only 5% of the total college student population, but maintained 36% of the total prison population (BJS, 2010).

Latino students are a growing part of the cultural landscape within American schools. For the purpose of this paper, the term Latino will be used interchangeably with the term Latino. However national data regarding Latino student performance in urban schools is not favorable and only reinforces assumptions held regarding the achievement gap (Simon et al., 2011). The 2010 Census counted over 50 million Latinos in the United States, accounting for 16% of the nation’s total population. Latino children represent 23% of all school-aged children in the United States (Snyder & Dillow, 2010). Latino students present an additional challenge to urban schools whether they are English Language Learners (ELL) or not. Latino students that attend urban schools also live in circumstances that hinder their ability to be successful in school (Simon et al., 2011).

Latino students experience similar gaps and challenges that are comparable to Black students. Equally, there are several factors that have contributed to this dilemma: Readiness to Learn, National Assessment Data, College and Career Preparedness, School Experience, and Postsecondary Experience (Simon et al., 2011). Many Latino families lack the resources and assistance to prepare their children for school. A significant number of Latino parents lack postsecondary experience, live in poverty, and are not employed full-time (Simon et al., 2011). In 2007, 27% of Latino households lived in poverty compared to 10% of White families. 33% of Latino children came from homes where no parent had full-time employment, compared to 21% of White children. Latino children were also less likely than White or Black families to have
parents involved in home literacy and school readiness activities (Snyder & Dillow, 2010).

NAEP 2009 data indicates that despite achievement levels of Latino students increasing significantly from 2003-2009, the gaps between Latino students and White students continue to be wide. Moreover, former ELL students performed similarly to their non-ELL peers (Snyder & Dillow, 2010). Also between 2003-2009, average Reading scores for Latinos without disabilities increased, however scores averaged 27 points lower than White students without disabilities. Average Reading scores for Latino students not eligible for free/reduced lunch were similar to White students eligible for free/reduced lunch (Snyder & Dillow, 2010).

From 2003-2009, Mathematics scores for Latino, Black, and White students increased, however, the average score of Latino students was higher than average scores for Black students (Snyder & Dillow, 2010). Latino students also scored an average of 28 percentage points lower than White students in Mathematics. 13% of former ELL Latino students performed at or above proficient in Mathematics compared to 22% of non-ELL students. During the same time period, Mathematics scores for Latino students without disabilities increased significantly. However, the average score for Latino students without disabilities was 28 points lower than White students without disabilities. Latino students not eligible for free/reduced lunch saw increases in Mathematics scores, however the average Mathematics scores for Latinos not eligible for free/reduced lunch was not different from average scores of White students not eligible for free/reduced lunch (Snyder & Dillow, 2010).

With minimal exceptions, Reading and Mathematics scores for Latino and ELL students in Trial Urban District Assessment (TUDA) districts were lower than Latino and ELL students across the nation. In addition, more than 50% of Latino and ELL students in most TUDA districts scored below basic levels (Snyder & Dillow, 2010). Less than 40% of Latino students
in Austin, Boston, Charlotte, Houston, and Miami-Dade performed at below basic levels in Mathematics compared with 44% of ELL students nationally.

In comparison to White students, Latino students were more likely to drop out of high school, less likely to take Advanced Placement exams with lower scores on the SAT and ACT (Snyder & Dillow, 2010). In 2008, Latino students were 2.5 times more likely than White students to dropout and 2 times more likely than Black students. Six out of ten Latino students graduated from high school on time compared to eight out of ten White students completing high school in 4 years (Rowan, et al., 2010, Snyder & Dillow, 2010). Alongside Black students, Latino students were also less likely to participate in academic clubs or music. 10% of Latino students were retained in a grade during their school career. Latinos students were also more likely to be suspended from school than White students. In 2008, 86% of Latino students were employed at least 10 hours per week, with 54% working more than 20 hours per week (Snyder & Dillow, 2010).

With regard to post secondary experience, Latino students graduate at lower rates, are unemployed at higher rates, and were more likely to earn lower income than White students with similar educational backgrounds. In 2001, 26% of Latino students graduated from college within 4 years, compared to 39% of White students. 48% of Latino students graduated within 6 years, compared with 60% of White students. In 2008, 13% of Latino students had earned a Bachelors degree compared to 33% of White students (Snyder & Dillow, 2010). The unemployment rate for the Latino population ages 20 and over was 12% compared to 8% of the White population (BLS, 2011). In 2008, the Latino population ages 18 and over made up 12% of the college population and 16% of the prison population (BJS, 2010).
Although NAEP data has been used to illustrate the researcher’s perspective on the achievement gap among Black, Latino, and White students, additional themes might emerge if data could be looked at in other ways. State assessment data can break down information regarding performance gaps in grades 3-12, whereas NAEP data is predictive because it is limited only to grades 4 and 8. State assessment data could also provide insight into student performance in science as well; a subject not assessed by NAEP. To paint the most accurate picture, a rigid review of high school assessment data is needed. Deep scrutiny must be taken in order to effectively measure graduation rates for each subgroup, however, lower performing students are dropping out of school before taking the high school assessments (Rowan et al., 2010).

**The Use of Technology to increase Student Engagement and Student Learning**

Digital learning is defined as any instructional practice that is effectively using technology to strengthen the student learning experience. Digital learning includes a wide range of tools and practice, including online formative assessment, digital curriculum and online content, applications of technology, adaptive software for diverse learners, learning platforms, and other high level content (Staker, 2011). There has been increased focus on digital learning and technology to increase student performance in high school and college and career readiness. The educational technology landscape has changed to reflect budgetary struggles, graduation, and post secondary completion as well as lagging academic performance compared to other countries (Schwartzbeck, 2012).

There is no clearly established definition of technology usage in K-12 schools (Bebell et al., 2004). Many studies have focused on technology usage, concluding that using technology in educational settings has benefits to students (Liu, 2011). Many teachers only use technology to
design instructional materials or deliver lessons, but do not effectively integrate technology into teaching and learning (Gorder, 2008). Some scholars identify technology in terms of teachers’ computer use in the classroom: low-level or high level (Cuban et al., 2001). Other scholars identify technology by the way teachers often carry out routine tasks and activities (Hennessy et al., 2005). And yet other scholars consider technology in terms of teachers using technology to support teaching and learning and the development of students’ higher order thinking skills (Lim et al., 2003). Despite the lack of a clear standard definition, consistent thematic elements have emerged within the general discussion about technology in K-12 schools (Hew & Brush, 2007).

Some researchers have even called into the question the impact of student and school factors on student achievement in a particular technology enhanced learning environment. Combining face-to-face instruction with online curriculum and instructional materials allowed for the greatest number of students to be exposed to relevant, highly engaging, highly technical instructional materials. This method of instructional delivery allowed students in urban, suburban, and rural areas to be on an equal playing field. Providing an outlet for all students to receive equal opportunity at a quality education opens up the possibility to reduce the achievement gap (Cakir et al., 2009).

In a recent national study, teachers report that technology increases factors of student engagement. The report highlights the outcomes of increased access to technology in classrooms and its ability to increase student engagement, encourage initiative and responsibility for learning, maximize resources, and increase the desire to pursue information beyond the classroom (Project Tomorrow, 2011). The findings also indicated that students were more motivated to learn, more likely to apply their knowledge to practical problems, and take ownership for learning. Teachers also reported that by using the technology, students are able to
more effectively develop 21st century skills including: creativity, collaboration, problem solving, and critical thinking (Project Tomorrow, 2011).

In fall of 2010, Project Tomorrow surveyed 294,399 K-12 students, 42,267 parents, 35,525 teachers, and 3,578 administrators representing 6,541 public and private schools from 1,340 school districts (Project Tomorrow, 2011). Urban schools account for 34 percent of the communities represented. Over 50 percent of the schools represented are Title I eligible, and 34 percent of the samples have a minority population of more than 50 percent (Project Tomorrow, 2011). Surveys were available online for input from October 18, 2010 through January 21, 2011. The data sets were generated from a convenience sample with schools and districts self-selecting to participate and facilitate the survey process for their students, educators, and parents (Project Tomorrow, 2011).

Technology affects every corner of schools, from instruction to student support to staff development. Technology has evolved due to the inclusion of more powerful, yet affordable computers, broadband networks, wireless technologies, accessible software systems, and distributed, anytime, anywhere learning environments. This learning perspective, characterized as the transformative era, has shifted from learning from computers to learning with technology. Transformative in the sense that great emphasis has been placed on the ways technology changes and transforms what people are able to do (Spector, 2008). Despite such perspectives, the argument regarding the use of technology to influence student learning is ongoing (Aziz, 2010).

Other researchers believe that the use of technology has positive implications for student learning (Aziz, 2010). Because the usage of such technologies will increase over time, the relationship to student learning may also increase. Bryant, Campbell, and Kerr (2003) researched flexible learning offered to traditional and non-traditional students. They concluded
that technology-centric learning courses provided an effective learning environment. Several researchers concentrated their studies on online versus traditional classroom instruction to compare their impact on student learning. It was concluded that although online learners scored significantly higher on final exam test scores, there was no significant difference in overall student performance with relation to course scores (Aziz, 2010).

Shachar and Neumann (2003) found that distance education students outperformed their counterparts in traditional classrooms. However, Brown and Liedholm (2002) found that traditional students performed significantly better than online students on complex course materials. Hartzoulakis (2002) also found favorable results on behalf of traditional teaching methods. Carey (2001) found little difference in student performance in either learning modality, but also agreed that the design of instruction impacts learning, rather than instructional method. Gagne and Shepherd (2001) did not find any differences in student performance due to mode of instruction.

Ling (2007) examined views of students and teachers about technology in the classroom. It was concluded that students liked the use of technology and believed it could be effective in learning. In the same study, teachers expressed skepticism regarding integration due to students’ limited usage of technology and the high cost associated with acquisition. Prensky (2006) argued that in school students lack the essential perquisites for learning—engagement and motivation. However, outside of school, students are fully engaged in a 21st century digital lifestyle. Prensky (2006) further concluded that schools must engage students in the 21st century way: electronically through the concept of gameplay. Gameplay consisting of: desirable goals, interesting choices, immediate and useful feedback, and opportunities to “level up”.
Proserpio and Gioia (2007) argue that teaching and learning are enhanced when teaching styles are commensurate with learning styles; therefore the use of more visual materials is needed. They further note that technical and social changes in the wider environment can have major implications for teaching and learning pedagogies. Although many fundamental principles are consistent across multiple generations, the mode of delivery will need to change over time.

A technology-rich environment can create a differentiated opportunity for learning, as long as it accounts for the differences between traditional and 21st century teaching (Proserpio & Gioia, 2007). This philosophy is consistent with the bodies of evidence convinced that available technology has the capabilities to lead dramatic new learning possibilities. Three features associated with effective learning further highlight it: (1) active involvement by students; (2) facilitative social settings; and (3) problem-solving focus (Alavi, 1994; Alavi, Wheeler, & Valaich, 1995).

The concepts of knowledge and learning are changing. With the emergence of the digital age, learning appears to be shifting from the focus of what has already been discovered towards a focus on critical thinking, knowledge creation, and connected learning (Starkey, 2011). The evaluation of learning using digital technology has been attempted in a number of ways. Cassady (2002) notes ways of evaluating learning can be measured by improved student achievement over the course of a project. This type of evaluation differs from one that seeks to evaluate the potential of learning in the design of an activity. The link between digital technology and student performance is complex. Cox (2004) concluded that effective learning with technology could only occur when a teacher challenges students to think. It has also been argued that the ways in which we assess teaching and learning using digital technologies is
problematic because the measures have been constructed using pedagogical beliefs that predate the digital age (Starkey, 2011).

**The Use of Technology to increase Student Engagement and Student Learning in Urban Schools**

Finding ways to integrate technology into urban classrooms so that transformation occurs can be difficult. There are layers of classroom and school complexities ranging from equipment acquisition to selection and adaptation of curriculum (Meier, 2005). Teachers often integrate technology by adding it into what they are already doing rather than changing professional practice (Cuban, 2001; Means, Roschelle, Penuel, Sabelli, & Haertel, 2004). Literature on technology in schools has not made a definitive link between teaching and learning, despite the need for urban teachers to be supported in reform-oriented instruction (Christensen, Griffin, & Knezek, 2001).

Since the introduction of the personal computer, there has been a monumental shift towards acquisition in America’s public schools (Becker, 1991). With the increased presence of technology in schools has also increased the inequitable distribution of technology in public schools (Anthony & Clark, 2011). National surveys revealed that low-income urban students had far less access to computers than suburban, middle and upper class students (Owens & Waxman, 1996). By the end of the first decade of the 21st century, students in urban schools lagged behind suburban, middle class youth in technology use and knowledge (Jackson et al., 2008; Macias & Inglese, 2010). Even though studies indicate that urban students show a dramatic increase in mathematics test scores when receiving daily computer-assisted instruction in comparison with students who did not, many urban schools have not integrated technology (Laffey et al., 2003). Keengwe and Akyeampong (2010) reported a consistent decline in the use
of technology in K-12 urban classrooms, while noting that effective technology usage and classroom instruction has yet to be fully realized.

Reform movements within the United States have called for increases in Science, Technology, Engineering, and Mathematics education (STEM). In light of such reform, concerns have been raised within urban schools pushing for the incorporation of learning technologies to equitably address the needs of diverse learners (Atwater, 2000; Lynch, 2000). Atwater (2000) suggested using new technologies and the Internet to create culturally relevant standards-based curriculum and instruction to engage and motivate urban African American students. Learning technologies include, but are not limited to: Internet, probes, modeling tools, and visualization software. Using such technologies to explore natural phenomena can potentially make students more motivated and engaged (Blumenfeld et al., 1991; Krajcik, Blumenfeld, Marx, & Soloway, 2000). A central challenge has been how to embed different learning technologies to engage student in learning (Blumenfeld et al., 2000). Further challenges to urban schools also include overcrowded classrooms, lack of resources, student absenteeism, and lack of curricula that support reform efforts (Hug et al., 2005).

Relevant research in educational technology (Javeri, 2007; Teclehaimanot, 2006; & Kulik, 2003) has indicated that effective use of technology occurs when the application directly supports the curriculum objectives being assessed; provides opportunities for student collaboration and inquiry-based learning; and adjusts for differentiated learning and provides feedback. Successful implementation also depends on technology’s ability to be integrated throughout the lesson while providing opportunities for students to design and implement projects aligned with the curriculum objectives (Kidd, 2009).
There is also evidence to support that educational technology can improve student motivation, attitude, and interest in learning when students use applications that adjust problems and tasks to maximize students’ experiences allowing them to produce, demonstrate, and share their work with peers. The technology must also be challenging and designed to develop basic skills and knowledge (Javeri, 2007; Vonderwell & Peterman, 2008; and Bailie, 2007). The research also pointed out that computer-based instruction can individualize learning and increase student motivation due to students being able to move at their own pace (Underwood & Brown, 1997). Computer-assisted instruction has been shown to improve student attitudes towards themselves as learners, the importance of computers as a tool for learning, core content and quality of information, and school in general (Kidd, 2009).

Computer technology is one of the most important resources available in the 21st century (Okwumabua et al., 2010). The influx of technology has dominated every aspect of modern society from communication to formal education. Technology has greatly benefited education in that it allows information to be processed among students with few limitations. Such online experiences allow for the exchange of information without regard for time, location, or physical barriers. It is further noted that distance learning, online learning, and virtual classrooms are commonly recognized forms of computer technology available to enhance the learning experiences of all demographics (Mitra et al., 2006).

Eamon (2004) examined the differences in computer use that exist between the economically disadvantaged and the advantaged. Left undefined, the term “technology” is often interchangeable with the term “computer.” However, for the discussion of educational technology, there must be a broader conversation to include classroom tools ranging from hardware and peripherals to printers, projection devices, cameras, networks, and software (Kidd,
It is also critical to note that technology usage consists of the using various forms of technology to supplement instructional delivery; not to be confused with 20th century pedagogy being displayed by 21st century tools. Regardless of the differences among socioeconomic groups, the psychological factors (i.e., motivation, interest, etc.) have a greater influence on students’ participation in virtual and online activities. The attitudes of urban students are of particular interest based on the minimal amount of research available regarding their attitudes towards online learning experiences (Mitra et al., 2006). Research has primarily been focused on the digital divide and the achievement gap, but has failed to focus on addressing the digital divide to tackle the achievement gap.

Effective use of technology in teaching is an integrated skill for teachers because it can help make complex content more accessible to students while preparing them for the demands of the technological workplace (Mouza, 2011). The need to equip urban students with technology skills is critical in order to foster greater diversity in the information technology field, while simultaneously broadening opportunities for employment. Nevertheless, there is sufficient evidence to support that urban teachers’ integration of digital tools remains sporadic and inconsistent in comparison to their suburban peers (Ertner & Ottenbreit-Leftwich, 2010). More evidence is needed into the types of professional development available for urban teachers to influence instructional practices that link technology, content, and pedagogy within their local context (Mouza, 2011).

**Summary**

In sum, the literature regarding the use of technology to increase student engagement and, importantly, student learning is in need of further study. There are pockets of success across a wide portfolio of urban schools, however few have indicated the impact of technology on student
learning. Therefore technology’s ability to increase academic engagement will be the emphasis of this paper due to its direct correlation to student learning (Finn, 1989).

Chapter III: Research Design

The research methodology for the study was qualitative in nature through the lens of technology’s impact on student engagement in urban schools. The study took place in three urban schools within urban school district settings, used multiple data sources, and sought to provide a deeper understanding of how technology may be an instrument for increasing student engagement and student learning based on multiple stakeholders’ observations and perspectives. This qualitative research can contribute to current studies because it collected data at the sites where participants experience the issue or problem of student engagement and learning. This process also gained data from participants who might eventually benefit from an analysis of the data collected in this study. Central to the study was the goal of collecting, analyzing, and reflecting on multiple stakeholders’ observations and perceptions of the use of technology to increase urban student engagement and, ultimately, learning.

Research Question

The following research question guided the data collection activities and analysis of data:

How does the use of technology impact student engagement and student learning in urban schools, as perceived by administrators, teachers, and students?

Methodology

Much of the research surrounding achievement in urban schools has focused on the digital divide and/or the achievement gap based on high stakes testing or international assessments. Fewer studies have looked at systemically altering school instructional technology models by bridging the digital divide to tackle the achievement gap. The number of studies
linking student engagement to academic achievement in urban schools is relatively small, although such premise is widely accepted among the field. There have also been few studies to support the types of instructional technology needed to influence student engagement in urban schools. Therefore the researcher seeks to determine the relationship between such factors and their impact on students in urban schools as perceived by the stakeholders within these communities.

Qualitative research is defined as a means for exploring and understanding the meaning individuals or groups assign to a problem. The process of research that generally involves questions and procedures, data collected in participant settings, data analysis generated from thematic elements, and the researcher’s interpretation or meaning of the data (Creswell, 2012). A qualitative study was warranted in the case due to its alignment with the events and behaviors taking place in urban schools. This type of study also aligned well to participant understanding of various technological factors contributing to positive student outcomes.

Qualitative research is a situated activity that locates the observer within the environment (Creswell, 2012). Such research consists of a set of interpretive practices making the environment visible, thus initiating a transformation in thinking. The researcher used this activity to present series of representations generated from field notes, interviews, conversations, recordings, and memos. The researcher attempted to make sense of subjects’ phenomena in their natural settings (Creswell, 2012; Denzin & Lincoln, 2011). This attempt began with assumptions and the use of theoretical frameworks that informed the study of research problems to address the issues presented by the subjects involved. To study the problem, a qualitative inquiry-based approach was used to collect data in the natural setting in order to establish patterns or themes. The final presentation of findings includes the voices of the participants, reflections from the
researcher, complex descriptions of the problem, and either a contribution to the literature or a systemic call for change (Creswell, 2012; Denzin & Lincoln, 2011).

A qualitative study approach was also used to evaluate the research question in order to gain insight from participant responses regarding technology use and integration in urban schools. It was important to understand the perception of participants as individuals and groups. The element of interpretive inquiry was also utilized in this study. The researcher’s interpretations cannot be separated from their own background, history, context, and prior understanding; therefore it was necessary to combine such interpretations with study participants so that multiple views of the problem could emerge (Creswell, 2009; Yin, 2009). It was important to present multiple perspectives so that complex interactions allow the researcher to present the larger thematic elements (Creswell, 2009; Yin, 2009).

Site and Participants

The sites for this study were 3 Metro Boston Area school locations. School #1 is an urban small learning community that houses over 700 students grades 6-12. The school maintains a 94.7% attendance rate in grades 6-8, and 92.9% in grades 9-12 with a dropout rate of 0.7%. Low-income students account for 89.7% in grades 6-8, and 82.8% in grades 9-12. School #1 offers a college preparatory curriculum with a technology focus and interdisciplinary, project-based learning. The school provides its students with access to jobs and internships related to technology. Students are each provided laptops with an emphasis on the use of a wide range of instructional technology devices. School #1 offers a host of Honors and Advanced Placement courses in addition to technology-based courses. Students must also complete technical certifications, perform a technology showcase, and a Senior Exit Portfolio and Presentation.
This site was chosen based on its mission where technology is the bridge that connects the students to their learning experiences.

School #2 is a comprehensive high school with career and technical programs located within the target area. Located centrally, it is a large urban high school that houses over 1200 students. The school maintains an 87.4% attendance rate with a dropout rate of 6.7%. Low-income students account for 69.8% in grades 9-12. School #2 offers a comprehensive academic program as well as career and technical training in specialized workforce development programs. Students that successfully complete their graduation requirements will receive a high school diploma as well as a Certificate of Competency. This site was chosen based on its mission to prepare all students to succeed in technologically advanced careers and post secondary education.

School #3 is a comprehensive high school divided into four small learning communities designed to promote high levels of learning and achievement for all students. The school includes ample facilities for a wide variety of academic programs. School #3 is a large urban high school that houses over 1300 students. The school maintains an 82.5% attendance rate with a dropout rate of 3.7%. Low-income students account for 84.2% in grades 9-12. The site offers students the opportunity to be exposed to specialized career and technical education programs. This site was chosen based on its mission to provide technical education to students with modernized instructional tools and resources to connect knowledge to the workplace.

Through purposeful sampling, there were several key groups at each site. Group A interviews were conducted with school administrators and/or technology directors from each site to identify and discern their overall perception regarding technology in their school and the degree to which the use of technology has (1) increased student engagement and (2) student
learning, and how. Their input was helpful in understanding how decisions were made with regards to the use of technology at their school. A review of each site’s school technology plan was also conducted if available. Group B interviews consisted of teachers from each site being asked to provide input and insight on how they use technology in their classrooms, as well as how they see the use of technology as impacting their students’ (1) engagement in learning, and (2) their students’ learning. Group C consisted of student focus groups drawing from the classrooms of Group B teachers. Group B Teachers selected students from their classes to ask for their voluntary participation in the study. Students were asked (1) how technology is used in service of their learning in their classrooms, (2) how they perceive the use of technology as enhancing their engagement in learning, and (3) how they perceive the use of technology as increasing their learning.

**Data Collection**

Focus group methodology is one of several tools used to generate valid information regarding the advancement of programs. Focus groups allows the researcher to elicit as many points of view as possible; painting a portrait of a combined local perspective (Krueger & Casey, 2000). For this study, data collection consisted primarily of interviews with targeted administrators and teachers in each school site and focus groups with students wherein classes are liberally using technology for the explicit purpose of increasing student engagement and student learning. The purpose of these groups was to determine how it all fits together (Greenbaum, 1998).

Administrator interviews focused on their view of technology and its ability to engage their students for the purpose of academic achievement, eventually asking questions regarding
their perspective on how the use of technology in the identified classrooms has impacted both student engagement and student learning.

Teacher groups focused on the use of technology in their classroom and its perceived impact on student engagement and learning. For the purpose of identifying specific rationales and explanations, the researcher asked for several examples of how technology was used in the teachers’ classrooms and the observations (and evidence) they might have that the use of technology has increased both student engagement and learning.

Well-designed focus groups usually consist of between 6 and 12 participants (Baumgartner, Strong, & Hensley, 2002; Bernard, 1995; & Krueger & Casey, 2000). The rationale for this range stems from the intended goal that focus groups must have enough participants to yield sufficient diversity in the information provided. For the purpose of this study each student focus group will consisted of a minimum of 5-6 students from the selected classrooms. The researcher met with the 4 focus groups for at least an hour. Each focus group was dependent on the content and emergent interaction of the participants, rather than a direct question and answer format. The intent was to elicit a greater point of view from the participants, rather than a researcher-dominated interview (Greenbaum, 1998; Krueger, 1998; & Mertens, 2005). Data collected from the student focus groups informed the analysis of how technology was used across classrooms for learning and the degree to which students felt it increased their engagement and learning in each classroom, and how. There are many sources of focus group data, however most researchers generally use transcripts of the audio recordings (Krueger & Casey, 2002). Focus group data can arise from individual, group, or group interaction data (Duggleby, 2005). Interviews and focus groups were audio recorded and notes were taken by the researcher, in order to provide further clarification on participant responses.
Transcript-based analysis represents the most rigorous and time-intensive mode of analyzing data. The transcribed data was analyzed alongside field notes constructed by the researcher. All data can be analyzed, but different amounts of time were needed to complete thorough analysis (Greenbaum, 1998; Krueger, 1998).

**Data Review**

There is no delineated type of qualitative analysis that all focus group researchers use (Morgan, 1998). Factors contributing to the type of analysis are dependent upon the history of focus group research, the complexity of analyzing focus group data compared to individual interviews, and the array of analysis techniques available to researchers such as: constant comparison, classical content, keywords-in-context, or discourse analysis (Morgan, 1998; Strauss & Corbin, 1998; Leech & Onwuegbuzie, 2007; 2008).

It was important to focus on the various themes that emerge from the data derived from the interviews and focus groups. First cycle and second cycle analysis was employed to arrive at categories of data and emergent themes across the different groups interviewed and participating in focus groups. Common and divergent themes were also identified (Strauss & Corbin, 1998). The analysis of the interviews and focus groups identified the deeper meaning behind participant responses. The raw data was prepared for analysis, emergent themes identified, and themes across stakeholders broken down for cross-analysis and interpretation (Morgan, 1997).

In summary, for qualitative analysis to occur, the researcher must collect the data; analyze it for themes, and report (Creswell, 2009). In detail, there were a variety of steps followed to complete such analysis. The data was prepared and organized for analysis. Further review of the data took place to ensure it was valid and thorough. Detailed analysis and coding was performed before the organization of thematic elements. The data was then reviewed even
further to make sure that the themes generated were consistent with the presentation of data. The final step in the process then focused on making an interpretation or meaning of the data (Creswell, 2009). The study followed this procedure for final analysis.

Minimizing Bias Through Sampling

To minimize bias in the survey results, the researcher conducted targeted outreach to ensure each site met the adequate socio-economic, racial, ethnic, and cultural distribution. To participate in the study, participants were asked to self-identify positive examples of technology in their school. They were also asked to schedule time for their stakeholders to take part in the interviews or focus groups. Any teacher that fit the criteria was offered the opportunity to participate. All participants will be given access to their specific responses as well given an opportunity to review the transcripts from the interviews. In preparation for data analysis, the interview results were matched with school level demographic information compiled by the National Center for Education Statistics (Snyder & Dillow, 2011). The data was analyzed to determine the range of key variables to be tested for statistical significance.

The researcher used purposeful sampling for this study. Purposeful sampling involves studying information-rich cases in depth and detail. The focus is on understanding and illuminating points rather than generalizing to a population (Patton, 1999). Purposeful sampling also groups participants according to preselected criteria relevant to a particular research question. Sample sizes are often determined based on theoretical saturation. Theoretical saturation focuses on the selection of cases most likely to produce the most relevant data that will discriminate emerging theories (Mack et al., 2005). Despite the range of students in the Metro Boston Area, the researcher only focused on urban school community participants. This reduced the potential sample to a maximum of 3200 students representing grades 9-12. Although the
researcher sought to work with the largest sample possible, the study consisted of a purposeful sampling of 22 students, 4 teachers, and 3 administrators.

**Data Analysis**

For completion of this qualitative study, the researcher analyzed and disaggregated data collected from the sample of participants representing each site. Data analysis consisted of making sense from the information collected, preparing the data, connecting the variables, and drawing deeper understanding, while presenting an interpretation of the larger meaning (Creswell, 2009). During qualitative analysis, the researcher collects data, analyzes it for themes, and reports the findings (Creswell, 2009). For the purpose of this study, the researcher organized and prepared the data, read through all pertinent data, began analysis with a coding process, used such coding process to categorize themes, and determined how such themes will be presented.

The researcher also used a prescribed process for preparing and reading through the data (Miles & Huberman, 1994). Field notes and transcript data generated from focus groups, interviews, and school document review were coded. Personal reflections and comments were also noted. The researcher paid particular attention to the frequency of similar phrases, relationships between variables, patterns, and common themes. Identification of such patterns and themes were used to generate a set of conclusions regarding the research question. Such generalizations were examined against the body of knowledge consistent with the theoretical framework (Mertens, 2005; Leech & Onwuegbuzie, 2007; & Creswell, 2009).

Focus groups of students were asked identical questions to establish a solid baseline to begin the discussion regarding their perceptions of technology’s influence on their engagement and overall classroom experience. Students were allowed to elaborate if they so chose, but were
not coached into disclosing specific responses. Follow up questions were only used to clarify to the researcher based on the initial responses through interactions from the group. Targeted follow up was not needed because patterns and themes became apparent throughout the discussion. Interviews among teachers and administrators were geared towards their constituent groups as the deliverers of instruction and the decision makers of such technological tools for the classroom. Follow up questions were used to evaluate for differences or similarities in relation to decisions of what type(s) of technology were to be acquired and how it is to be used in the classroom. Field notes were taken by the researcher throughout the study and were added as other forms of data.

Detailed data analysis followed the careful review of the information obtained through focus groups and interviews. Information was saved to a digital recording device and then transcribed to hard copy. Data analysis began after meeting transcripts was verified by the study participants. The goal was to code the data in a way that arranged and organized the data into broader themes or concerns (Maxwell, 2005). Themes began to emerge from each of the subgroups: students, teachers, and administrators. Inductive analysis allows such findings to emerge out of the data through the analyst’s interactions with the data (Patton, 2002). Step one of the inductive analysis consisted of reading through all of the interviews and focus group transcripts making notes to begin organizing the data into topics. Once the data was labeled, often referred to as coded, such labels were written into relevant passages so that a second reading of the data could take place (Patton, 2002).

The second reading of the data was performed to begin identifying specific themes, which was categorized through a color-coded system (Patton, 2002). These categories produced a framework for organizing and describing the data that was been collected. The descriptions
presented in this phase of review helped build the foundation for the interpretative phase of analysis (Patton, 2002). Concerns regarding convergence and internal homogeneity were also addressed if they became apparent. Upon review of the data the researcher determine what data belonged together and the extent to which differences were clearly defined (Patton, 2002). Divergence was also addressed during this stage of analysis. Through careful examination, the researcher also determined data that deviated from the identified patterns or themes (Patton, 2002).

Upon thorough analysis, the data was then reviewed through the theoretical lens to determine if such framework helped provide an explanation of what was being observed. Such processes helped the researcher to challenge hypotheses and assumptions to determine if the information obtained was consistent with the framework of Engagement Theory.

Validity and Credibility

Qualitative research uses an approach that seeks to understand phenomena in context-specific settings, where the researcher does not attempt to manipulate the phenomena of interest (Patton, 2002). Qualitative research is defined as research that produces findings not derived from statistical means or quantification, rather it seeks findings arrived from real-world settings where the phenomena unfolds naturally (Patton, 2002). The adopted concept of validity has been described as the quality, rigor, or trustworthiness of the study (Lincoln & Guba, 1985; Mishler, 2000; Stenbacka, 2001; & Davies & Dodd, 2002).

Approaches to qualitative inquiry have become highly diverse. The variety of philosophies reminds us that quality and credibility intersect with target audience and intended purpose (Patton, 1999). Formative research or action inquiry for program improvement involves different purposes and therefore criteria of quality compared to summative evaluation aimed at
fundamental continuation decisions about a program or policy (Patton, 1997). Credibility in qualitative inquiry depends on three distinct elements: 1) Rigorous techniques and methods for gathering high quality data that are carefully analyzed, with attention to validity and reliability, 2) Credibility of the researcher, which is dependent on training, experience, track record, status, and presentation, and 3) Philosophical belief in the value of qualitative inquiry, fundamental appreciation of inquiry, qualitative methods, inductive analysis, purposeful sampling, and holistic thinking (Patton, 1999).

**Researcher’s Role**

There is no definitive list of questions that must be addressed to establish investigator credibility. The researcher is a well-respected leader of a large urban high school with over 10 years of experience in K-12 public education and advanced degrees in technology education and school administration. The researcher used such experience to thoroughly analyze the data until confidence was reached that the emerging themes were consistent and aligned with the original intent of the study. The researcher also continued to evaluate relevant subject matter as it pertained to the study. The researcher then summarized an overview of responses and generated conclusions based on the findings. The principle was to report any personal and professional information that may have affected data collection, analysis, and interpretation in the minds of users of the findings (Patton, 1999).

On a daily basis, students of all ages, backgrounds, and communities are interacting with a wide range of technology tools and services to enhance their learning. Examining the impact of these tools might provide insight into some of the challenges associated with achievement gap performance in urban schools. Today’s generation of student is more technology savvy and
fluent than their predecessors. Tapping into the transformative power of such tools in and out of school may tip the balance towards successful urban school reform.

**Protection of Human Subjects and Ethical Considerations**

Research ethics deals primarily with the interaction between researchers and the people they study. For the purpose of this study, the researcher used primary data; despite having no direct relationship with the study participants. Ethics and the protection of human subjects was be assured and maintained throughout this study. The researcher participated in and passed the National Institute of Health (NIH) online course entitled, “Protecting Human Research Subjects” offered through Northeastern University Institutional Review Board (IRB).

Professional ethics deals with issues such as collaborative relationships, mentoring relationships, intellectual property, fabrication of data, and plagiarism (Mack et al., 2005). Research ethics deals with the interaction between researchers and participants. Basic ethical principles for human subjects research were highlighted in the Belmont Report (NIH, 1979). Three core principles serve as the foundation for research ethics: Respect for persons, Beneficence, and Justice. Respect for persons requires a commitment to ensure the autonomy of research participants and protection from exploitation. Beneficence requires a commitment to minimizing the risks associated with research, whether psychological or social. Justice requires a commitment to ensuring a fair distribution of risks and benefits resulting from the intended research (Mack et al., 2005). Bioethicists have suggested that a fourth principal, respect for communities also be added. Respect for communities refers to the researcher’s obligation to respect the values and interests of the community in research, and whenever possible protect the community from harm as well. The researcher has a firm belief in such principles, which were critical to the overall success of the study.
Informed consent is a mechanism for ensuring that individuals understand what it means to participate in a particular research study so they can decide in a conscious, deliberate way whether they want to participate. This study was heavily dependent on the use of primary data. The participants were thoroughly informed of the purpose of the study and the use of data. They were also informed that participation is voluntary and their confidentiality would be maintained at all times. Participants were not obligated to answer questions. The selected school administrators, teachers, and students reviewed focus group and interview data for accuracy. The researcher moved forward once approval had been acquired.

Participant data was held in the strictest of confidence. No identifying information pertinent to the participants was used in the study. There is also no discussion or presentation of information that would allow other individuals to know who participated in such study.

Conclusion

Urban schools currently exist in a state of crisis and are in desperate need to identify ways to combat a multitude of challenges with respect to the achievement gap. Technology shows great potential in being a powerful way to facilitate learning inside and outside of school. Determining the best way to incorporate it into the classroom is a challenge due to the miscommunication that occurs between the subculture of Digital Natives/Millennials and the subculture of Digital Immigrants. Evaluating the effectiveness of the types of technology introduced to leverage students’ desire is the next level of study needed. Once a baseline of student engagement, interest, and motivation can be established, students may then be categorized, and placed into the major subgroups to see what interventions may have an effect. This will be helpful in determining where future efforts and resources should be allocated.
Isolating phenomenological influences on student engagement will also be helpful when building sustainable, yet transferable solutions.

Cultural proficiency and technology usage may also present a range of opportunities that addresses the lack of connection between urban youth and traditional schooling. The technology industry operates under the premise of capturing and maintaining their audiences’ attention. Consumers willingly devote inordinate amounts of time and attention to the consumption of mobile devices, social media, web content, and gaming. Informal learning opportunities can be sought after to present urban youth with academic enrichment that supports standards based learning and the acquisition of 21st century skills. The goal is to encourage participation and increase engagement in school by providing students with tools that help with the application of their interests, knowledge, skills, and accomplishments. This study seeks to highlight such goals as a means to improving urban education in the future.

**Chapter IV: Report of Research Findings**

**Reporting the Findings and Analyses**

This chapter presents the key findings and analysis of the various data sources of this study. The chapter is organized into five sections. Section One provides a description of the study and its participants. Section Two provides an overview of the categories developed during the coding of interview and focus group data. Section Three presents comparisons and contrasts between the various groups. Section Five will provide of a summary of the findings.

The data was reviewed to answer the research question developed at the beginning of this study: How does the use of technology impact student engagement and student learning in urban schools, as perceived by administrators, teachers, and students?
Participants in this study consisted of 22 students, 4 teachers, and 3 administrators from 3 urban high schools in Metro Boston. The groups of students included male and female, grades 9 through 12, ages 14 to 20 years old. The students are all active full-time students at the 3 school sites. The teachers and administrators currently work at the 3 school sites and chose to participate in the study. All individuals participated in either focus groups or interviews.

**Study Context**

The three categories of individuals consisted of students, teachers, and administrators. Students participated in small focus groups and teachers and administrators were interviewed to gain their perspective regarding the impact technology has on student engagement and student performance. This qualitative study was conducted to investigate stakeholders’ perception regarding the technological factors that influence student engagement in school. Focus group settings allowed students to openly discuss their opinions with regard to effective technology usage at their school.

The sites for this study were 3 Metro Boston Area school locations. School #1 is an urban small learning community that houses over 700 students grades 6-12. The school maintains a 94.7% attendance rate in grades 6-8, and 92.9% in grades 9-12 with a dropout rate of 0.7%. Low-income students account for 82.8% in grades 9-12. School #1 offers a college preparatory curriculum with a technology focus and interdisciplinary, project-based learning. The school provides its students with access to jobs and internships related to technology. Students are each provided laptops with an emphasis on the use of Smart Boards, scanners, digital cameras, and video conferencing. This site was chosen based on its mission where technology is the bridge that connects the students to their learning experiences.
School #2 is a comprehensive high school with multiple career and technical programs. Located centrally, it is a large urban high school that houses over 1200 students. The school maintains an 87.4% attendance rate with a dropout rate of 6.7%. Low-income students account for 69.8% in grades 9-12. School #2 offers a comprehensive academic program as well as career and technical training in specialized vocational programs. This site was chosen based on its mission to prepare all students to succeed in technologically advanced careers and post secondary education.

School #3 is a comprehensive high school divided into four small learning communities designed to promote high levels of learning and achievement for all students. The school includes ample facilities for a wide variety of academic programs. School #3 is a large urban high school that houses over 1300 students. The school maintains an 82.5% attendance rate with a dropout rate of 3.7%. Low-income students account for 84.2% in grades 9-12. The site offers students the opportunity to be exposed to over 10 specialized career and technical education programs. This site was chosen based on its mission to provide technical education to students with modernized instructional tools and resources to connect knowledge to the workplace.

All participants volunteered to answer a variety of questions pertaining to their perception of technology integration and its ability to impact or influence student engagement and student learning at their school. Each individual was free to share their opinion and perspective to the extent that they felt comfortable to do so. Students often agreed with their fellow classmates and chose not to repeat statements during the focus groups. Teachers and Administrators were also asked to contribute any additional perspective that they felt relevant to the conversation during the interviews.
Findings and Analysis – Coding

As described in Chapter 2, there is no delineated type of qualitative analysis that all focus group researchers use (Morgan, 1998). Factors contributing to the type of analysis used were based on the complexity of analyzing student focus group data compared to individual teacher and administrator interview data. After audio recordings were transcribed, first cycle and second cycle analysis was employed to arrive at categories of data and emergent themes across the three subgroups. To analyze participant perspectives, In Vivo Coding – short words or phrases from the actual language was used. Initial Coding was examined to look for similarities and differences. Second cycle coding or Pattern Coding was used to arrive at emergent themes; patterns were studied through participant responses. This was done in order to begin drawing deeper meaning from participant responses regarding their perception of technology integration and its impact on student engagement. Similarities and differences among the codes were examined to determine if commonalities exist. Emerging themes were identified through this repetitive coding of data. The data will be further reviewed to determine its relationship to the framework of Engagement Theory.

Emergent Themes

As presented in Table 1, several themes were identified through this process as being a significant factor in stakeholders’ perception of technology integration and its ability to influence student engagement.
Table 1

Central Themes by Group

| Students | 1. Wide range of devices used for schoolwork at home |
|          | 2. Effective use of technology is very important to students’ academic success |
|          | 3. Technology makes learning more engaging |
|          | 4. Technology increases teacher effectiveness |
|          | 5. Mixed feelings regarding schools’ technology usage to enhance learning |
| Teachers | 1. Major challenges associated with technology integration |
|          | 2. Effective use of technology is important for student performance |
|          | 3. Specific tools with the greatest effect on student engagement in the classroom |
|          | 4. Use of technology improves teacher effectiveness |
| Administrators | 1. Technology is important to the schools’ goals |
|              | 2. Benefits of digital content |
|              | 3. Technology influences student engagement |
|              | 4. Tools with the greatest effect on student engagement |

In the following three sections I present the perspectives of each of the various stakeholder – students, teachers, and administrators – regarding their perception of technology integration to influence student engagement. Following these three sections, I then review stakeholder perspectives for commonalities and differences. Stakeholders were encouraged to share as much as they desired regarding each topic.

Student Themes

The following five student themes will be discussed below:

- Wide range of devices used for schoolwork at home
- Effective use of technology is very important to students’ academic success
- Technology makes learning more engaging
- Technology increases teacher effectiveness
- Mixed feelings regarding schools’ technology usage to enhance learning
All the students shared the fact that they use a wide range of electronic devices for schoolwork at home. Students shared that they spent an average of 4-5 hours on the Internet afterschool each day. Electronic devices included, but were not limited to: desktops, laptops, tablets, gaming consoles, televisions, and cellphones. With regards to schoolwork, students used the various forms of technology for tasks such as the translation of foreign language homework, clarification of challenging concepts covered in class, and research projects. However, the majority of students’ time was spent on non-academic pursuits: browsing the Internet for digital content, social networking, and gaming. Additional time was also spent text messaging friends and teachers. Students expressed their desire to stay connected to the Internet as much as possible when at home. In regards to Internet usage, one student participant stated:

I spend the whole day there. When I get home I actually play games on my iPod. If not that, then I’m on the Internet. But I actually need Internet to play the games. I’ll go online right after school and stay on until the early morning.

The effective use of technology is very important to students’ academic success. Students shared the fact that they’ve never known a time when technology was not available, and that they’ve grown accustomed to a technological environment. Students view technology as the bridge to increased access to greater levels of information. Technology aids in helping to clarify challenging concepts when their teacher is unavailable while assisting other students in class. As one student participant stated, “Technology is very important because if I don’t understand something or understand the subject, and I need clarification, I can go online to get the answers.” Students also attributed the effective use of technology to increased opportunities for communication between students outside of class. Students further credited effective use of technology for increased communication between students and teachers outside of school.
through social media, email, and text messaging. For example, one student stated, “You can also email your teacher. – She has a Facebook group and we can chat with her, which is a lot easier.” One teacher participant shared, “Technology use is very important to my students’ performance for many reasons. First, students have to use technology to complete lab reports. Second, students have to be computer literate to conduct research and design presentations.” Such comments were specific the academic content taught by the respondent. Another teacher participant shared, “I think for the technology I use, it helps student performance a lot. So in the ways that I utilize technology as far as making the content accessible to them I think that it has lead to huge improvements to grades this year.” This thought was also consistent among the students and teachers in the study.

**Technology makes learning more engaging.** Students shared that technology usage in class helps to hold their attention, so that they don’t fall asleep in class due to boredom. Students expressed that sitting down and listening to their teachers lecture was undesirable. They stressed the importance of using digital media to help them visualize concepts. Students highlighted the fact that videos helped their teacher model the lesson’s activities more effectively. One student shared how he uses video in the following way, for example, “One way that usually helps me is to use my phone to video the class, and then I’ll go back and review it later.” Another student participant shared, “Videos help give a better picture of what they are trying to teach you.” Students acknowledged that they learn in different ways and noted that visual learning was preferable. Students also noted that the effective use of technology allows the teacher to go more in depth on the subject; specifically for items not found in their traditional textbooks. A female participant shared, “Technology? I think it’s very important because there’s a lot of new information you can’t find in books.” With respect technology, another student shared:
I think technology is very important because there's a lot of new information that you can't find in books that you can't find, not that the teacher's not on top of that. So having the technology, access to the internet, the web, it gives us examples of visuals to see what they are trying to explain to us, it gives us examples, better explanations. It's very easy, it's quick to use.

**Technology increases teacher effectiveness.** Students reiterated that good teachers use technology. They shared that technology allows for increased access and communication between students and teachers. One student shared, “It would make it more engaging because instead of sitting in here and watching the teacher talk, you could go online and watch a video showing you how to do it instead of seeing teachers talk and write on the board and tell you how to do it.” Students commented on being able to contact their teacher for clarification and deeper understanding when doing their homework. Students expressed their desire to receive timely feedback. They further clarified that due to the limited time in class, more communication with their teacher outside of school was helpful in answering questions not covered in class. Students also felt that technology usage was dependent on the teacher. A female student participant shared, “I think technology would make a teacher a better teacher, because at the same time, I believe they are learning with the students.”

Some teachers were viewed as effective without technology, but others need help with the technology in order to clarify things. Technology can help the teacher explain things from a different perspective. The access to the Internet was viewed as a positive because it allows their teachers to learn alongside the students. The increased access to resources help to inform the teacher from a broader perspective. In turn, their teachers are able to explain the concepts from multiple vantage points. They also felt that effective technology use varies depending on the
subject as well as how effective the teacher is overall. One student shared, “When I was a freshman, the teacher didn't use that much technology and sometimes it was kind of like boring to listen to them talking all the time. And whenever they used a PowerPoint or something, we could see an image and stay awake. Seeing it makes it easier to understand, that way it is more engaging to me.”

**Students have mixed feelings regarding their school’s technology usage to enhance their learning.** Students continued to be conflicted about whether or not their school was doing a good job at using technology to enhance their learning. Students agreed that a lot of the technology available to them at school helped them to cover instructional materials faster, allowing them to focus on more complex issues in class. Students also agreed that access to SmartBoards and projectors is a good start, but lack of adequate numbers of computers for students presents challenges at school. The school policies currently do not allow students to use cellphones on campus. Students further discussed that the lack of sufficient bandwidth contributed to a slow Internet connection increasing their frustrations with the computers available in class. Overall, students firmly believed that using technology in school helps a lot, and that they engage more when technology is available.

**Teacher Themes**

Upon a review of the transcripts across all teacher interviews, four emergent themes were identified across teachers in the three schools:

- Major challenges associated with technology integration
- Effective use of technology is important for student performance
- Specific tools with the greatest effect on student engagement in the classroom
- Use of technology improves teacher effectiveness

Each of these is presented below, as discussed across the participating teachers.
Four teachers shared the major challenges associated with technology integration. The teachers in the study represented multiple academic areas: English Language Arts, Mathematics, Biology, and Pre-Engineering. The lack of consistent professional development and training was clearly communicated by all of the teachers. For example, one teacher participant stated, “I think that lack of professional development and training is the biggest impediment aside from lack of funding.” There was also a general consensus that minimal technical support was a challenge, and that lack of network capacity and limited bandwidth contributed to staff frustration. As stated by the students, teachers also agreed that lack of adequate numbers of computers for students presents challenges at school. Teachers also conveyed that the schools were in the process of transitioning to online assessments and need to incorporate more technology in the classroom. Despite this fact, there is no formal mandate to integrate technology, however it is strongly encouraged by administration.

Effective technology integration is important for student performance. The teachers were each in agreement that technology makes content more accessible to their students. It helps to increase student understanding while trying to connect the big ideas. Teachers commended the use of specific tools essential to the modeling of academic behavior. Such tools included: SmartBoards, LCD Projectors, Document Cameras, and Web Videos. These demonstrations of learning allow for differentiated learning, as teachers also agreed that many of their students are visual learners. One teacher participant shared:

I've found better ways to leverage the technology that I have and I track my students' progress, and if I look at the number of A's, B's, and C's I have in my classes now it's significantly higher than what I had across the board last year. A lot of it I attribute it to the fact that I stay on top of my students to stay organized, and also how I structure the
class with the technology I have so that they can see what they need to do at all times and I'm basically modeling what they should be doing with the technology I have. Teachers also communicated that the integration of technology aids them by saving time and increasing efficiency. Their common goal is to use the technology to increase academic performance while providing students with the skills needed for success in college. One teacher participant shared, “I think for the technology I use, I think it helps student performance a lot. So in the ways that I utilize technology as far as making the content accessible to them I think that it has lead to huge improvements to grades this year.”

**Specific tools have the greatest effect on student engagement in the classroom.** The teachers clearly communicated that there is great need to increase access to technology in their school. Teachers understand that there are funding challenges and restrictions, but were all in agreement that technology is essential to preparing students for college readiness. Computers are used for everything from typed essays, online assessments, and daily classwork. SmartBoards were named specifically for their ability to allow for student-teacher interaction and guided practice. One teacher participant shared, “I think the greatest tool in my classroom is the SmartBoard; to have a big piece of equipment that gets their attention keeps them engaged.” Such tools enable teachers to model desired academic behaviors in class. Various other forms of video-based technology were also noted for their ability to increase student engagement with the multitude of visual learners present in their classrooms. Laptops and tablets were also noted to have a positive effect on student interests, allowing students to be creative and as a result boost overall engagement. One participant shared, “The biggest point of engagement I think are the videos I find online, there are videos that describe things and visualize things in ways that I can't explain in class because of lack of resources or just lack of experience.”
**The use of technology improves teacher effectiveness.** The general theme among the teachers during the interviews was that the use of technology improved their effectiveness in the classroom by lowering the barriers of access to their students. The introduction of different forms of technology allows them to supplement instruction with a variety of strategies and approaches. With the additional tools, students were able to work creatively and independently. Better classroom management was an additional outcome generated by technology usage in the classroom with disruptive behavior being drastically reduced. For example, one teacher participant stated, “You spend less time on classroom management; problems with attention, focus, and behavior are almost eliminated.”

Teachers further commented on how technology was engaging students outside of the classroom. The use of Internet resources, blogs, email, web videos, and social networks allowed the teachers to extend the classroom to an online environment. This lead to increased student-teacher communication, which contributes to a positive student-teacher relationship. Another teacher participant shared, “Being able to communicate with students outside of the classroom has improved my teaching and my effectiveness.” Teacher participants felt strongly that the student-teacher relationship as a single variable will improve student learning.

**Administrator Themes**

Upon an analysis of administrator transcripts across the three schools, four themes were identified, as follows:

- Technology is important to the schools’ goals
- Benefits of digital content
- Technology influences student engagement
- Tools with the greatest effect on student engagement

Each of these is discussed below.
Technology use is important to school leadership goals. The consensus generated among the Administrators was that the goal for technology is to maximize its usage for student performance. Administrators also stressed the importance of making technology accessible to all key stakeholders. They further clarified that technology was critical in helping to create a learning environment that helps students attain the 21st century skills necessary for college readiness and workforce development. One administrator shared, “The primary goal for technology is to increase access to the World Wide Web and to offer teachers and students the resources available, and to make the jobs of the faculty easier and more efficient, while making the environment of the class more conducive to learning." Administrators further expanded on the concept referencing the need for success in life and work with technology at its core. For instance, one administrator stated, “We continue to use technology and the data it provides to increase our student performance goals from the previous year.” The overarching thought presented by the administrators is that technology will continue to be an increasingly evolving aspect of students’ lives.

Digital content and tools have the greatest effect on student engagement. Administrators had strong feelings regarding the importance of providing students access to updated web resources. They further conveyed the cost savings associated with the transition to a digital environment and the range of opportunities available to students not achieved through traditional instructional methods. The effective integration of technology allows for a greater range of pedagogy paired with innovative and customized instructional strategies. Another administrator stated, “Technology influences student engagement a great deal. Students have grown up in a society with technology thriving and it is a resource for developing many opportunities.” From an equipment standpoint, administrators felt that the tools needed to
accomplish such tasks included, but were not limited to: laptops, tablets, and all forms of video projection technology. One administrator participant shared:

Technology has brought the world into the classroom and has provided teaches with tools that they could never have imagined fifteen years ago. This includes access to countless libraries, on-line dissections and countless tutorial resources. Students are much more attune to seeing on-line resources and video sources that supplement the material covered in class.

Despite the positive benefits generated from technology usage, administrators also agreed that due to varying levels of staff expertise, continuous and consistent training, professional development, and support were also needed for their performance goals to be realized.

**Technology integration has a strong impact on overall student engagement.**

Administrators identified specific forms of technology vital to overall student engagement. One administrator shared, “In many ways, it keeps students more engaged. It does so by allowing them to pace their learning themselves and to explore a bit more.” The school district comprehensive Student Information System (SIS) was also identified as having a positive effect on student engagement for providing students access to grades, class assignments, assessment results, and daily attendance. The SIS is available through any web browser and it allows students to track their progress in real time. Administrators felt very strongly that timely feedback and ongoing monitoring enables students to take greater ownership of their learning while providing transparency around their proficiency levels and areas of improvement.

**Commonalities across Student, Teacher, and Administrator Perspectives**

In comparing the responses generated from across administrators, teachers, and students, commonalities within the emergent themes become apparent. The Students, Teachers, and
Administrators all saw the importance of the effective use of technology to students’ academic success. As were they in agreement that students are immersed in the technological world outside of school. Each group referenced the importance of increased student access to information for the purpose of clarification, differentiation, and scaffold learning. The groups also reached consensus regarding the use of online resources to extend the classroom beyond school hours. Each of the groups also stressed the importance of increased opportunities for communication between students and teachers through the use of social networks, email, and text messaging.

The three groups also shared similar perspectives regarding technology making learning more engaging. There was consistency in the fact that effective technology integration allows the teacher and students to go more in depth on a range of subjects not found in the traditional textbook. Each group also referenced that many of the students were visual learners and technology allowed for visualization and modeling when explaining challenging concepts. There was also agreement that specific technological tools held the attention of students at higher levels. Students and Teachers were in agreement that sitting and watching the teacher talk for extended periods was undesirable and effective technology integration allowed for additional transitions. These transitions were deemed critical in positive classroom culture and behavioral management. Students claimed that they were bored less in class and Teachers stated that the introduction of technology to the curriculum significantly reduced disruptive behaviors.

Another comparison among the groups focused on their feelings regarding whether or not their school was doing a good job using technology to enhance student learning. Teachers and Administrators concurred that there was room for improvement. They shared the need for leveraging technology to engage students in a more rigorous learning environment. They were
also in agreement that investments in infrastructure, training, and support were needed in order to do so. Students on the other hand agreed that certain teachers were doing a good job of using technology to enhance their learning, but it was not consistent in their school. Teachers conveyed that the use of technology was teacher-driven, meaning encouraged, but not mandated or enforced.

**Contrasting Perspectives across Administrators, Teachers, and Students**

The major contrast that emerged dealt with conflicting viewpoints regarding online education and stakeholder involvement around technology planning. Students were conflicted in deciding whether or not to take an online class. There was no distinction between the various types of online learning: hybrid, blended, or completely virtual. Based on students’ prior knowledge and understanding of online learning, a small portion of the students felt that they struggled with time management and distractions would be a problem. They also stated that not having a teacher in front of them to push them was not optimal. They felt that they needed the direct interaction from the teacher to keep motivation and accountability high. The remaining portion of students agreed that online courses provided additional opportunities not available in traditional brick and mortar classes. Some of the opportunities included flexible scheduling, immediate access to digital resources, and lack of behavioral distractions from other students in a large classroom. Students felt that they could concentrate more in the comfort of their own home as long as they had access to clarification if needed.

The other area of contention dealt with stakeholder involvement in the decision making process of determining what types of technology are to be used at school. Students and Teachers had no knowledge of the process for making such decisions. Teachers commented on the process being teacher driven and based on teacher requests. Students believed the process to be
based on what was the least distracting in class. Students and Teachers agreed that they would like to be involved in the process as the recipients and deliverers of learning. Administrators were very clear about the process for determining technology, and were in agreement that students and teacher input was taken into consideration, but their actual involvement was not part of the process. Administrators referred to the direct feedback from school-based technology support staff when making decisions. Administrators also admitted that school fiscal challenges dictated the majority of such decisions as well. This presented an interesting dynamic because of the range of technology available and the range of technology successfully used among the three schools. Despite this variable, there was continued agreement among the three groups regarding the need to improve in technology usage.

**Summary of Findings**

The findings of this study are generated from the voices of students, teachers, and administrators in urban high schools. Each group has unique insight into the factors that contribute to student learning. The participants in this study had a positive opinion of their schools and their ability to address the technical needs of its students. The students and teachers had strong relationships and shared similar stories despite having no prior knowledge of the content of the study. There was also evidence to support that each of the participants cared about the future of their school, but see the urgency in addressing the challenges associated with effective technology usage. The student participants had strong feelings regarding the need for increased opportunities for technology in class and a consistent wireless signal, while teacher participants communicated the need for more access to technology with technology support and professional development. Administrators firmly believed that technology was vital to their schools’ success, yet there was inconsistency around the importance of technology to their
school’s mission. From the various perspectives throughout this study, it is evident that each category of stakeholder is committed to finding ways to use technology to address student engagement and student performance issue.

Chapter V: Discussion of Research Findings

Revisiting the Problem of Practice

This study examines how the use of technology in urban classrooms may increase student engagement and learning in urban schools, as perceived by students, teachers, and administrators. There is growing consensus that two key implications for learning have contributed to the underperformance of urban schools: lack of motivation and lack of student engagement (Goodenow, 1992; NRC, 2003; Uekawa, Borman, & Lee, 2007; & Curwin, 2010). Researchers in general, have maintained that U.S. high school students are not fully engaged in classroom learning (Newmann, 1992; Shernoff, et al., 2003; Uekawa, Borman, & Lee, 2007). It has become more important than ever to find or create innovative ways to engage students in effective, sustainable forms of learning. Traditional bribery or punishment models have not generated long-term, nor have they held students’ attention; therefore schools are in need of solutions that draw upon what students already find engaging (Uekawa, et al., 2007 & Curwin, 2010).

Schools possesses the ability to ensure that classroom experiences are motivating and energizing while providing rigorous academic content that moves students toward proficiency. Perhaps the purposeful use of technology may be the solution for tipping the balance between the achievement gap and student performance in urban schools (Hew & Bush, 2007; Cakir, Delialioglu, Dennis, & Duffy, 2009). Due to the pace of the industry, scholar practitioners continue to explore the potential of instructional technology as a platform to increase overall
student performance. Further exploration on effective technology integration in urban schools could prove beneficial to increasing student achievement and addressing aspects of the achievement gap.

**Review of the Methodology**

This qualitative study is through the lens of technology’s impact on student engagement in urban schools. The study will take place within at least three urban schools in an urban school district setting, using multiple data sources, and seeks to provide a deeper understanding of how technology may be an instrument for increasing student engagement and student learning based on multiple stakeholders’ observations and perspectives. The research question driving the study focuses on how does the use of technology impact student engagement and student learning in urban schools, as perceived by administrators, teachers, and students? For this study, data collection will consist primarily of interviews with school administrators and teachers in each school site and focus groups with students wherein classes are liberally using technology for the explicit purpose of both increasing student engagement in learning and student learning.

In order to maintain the validity of the study, steps were taken by the researcher along the throughout the process. Member checking (Butin, 2010; Creswell, 2009) was conducted throughout the data collection process in order to determine the accuracy of the participants’ thoughts was reflected in their statements. Prior to the interviews and focus groups, the researcher spent time with participants to build rapport for the purpose of obtaining honest and open responses. Throughout the interviews and focus groups, the researcher restated and/or summarized information while questioning participants if their statements were unclear or off topic. At the completion of the interviews and focus groups, the researcher had the participants review the audio recordings and field notes to affirm that the summaries reflect their views,
feelings, and experiences. The purpose of this process was to provide findings that are authentic, original, and credible.

The foundations for confirmability and transferability exist in the explanation of the problem of practice, national urban student performance data, and the data generated through the interviews and focus groups. With respect to transferability, it is possible for groups not part of the study to determine whether or not outcomes can be applied based on similar sites where participants experience the issue or problem of student engagement and learning. An audit trail of collected data was saved on the researcher’s laptop and archived in a cloud-based storage system that allows for the establishment of confirmability.

The sample size of twenty-nine participants presented limitations during the study. With a limited number of participants, it is difficult to establish whether or not their perspectives are unique to Metro Boston or universal to urban school context. Dr. Keren Zuniga McDowell, Director of Academic Access and Opportunity at Suffolk University states, “One of the biggest flaws with education research when we are trying to gauge student engagement is that we’re doing the research in schools. So the only students that we’re capturing in our sample are the students that are engaged at the first point of contact, by virtue of being at school. We’re not capturing any information from the students that aren’t engaged. And students that are engaged at even higher levels within the school are more likely to participate in volunteer research studies versus the students who aren’t engaged.” (K. Zuniga McDowell, personal communication, January 13, 2013). Because of this fact, coordinating schedules of the various stakeholders was challenging without larger numbers of participants able to dilute the effects of absent members.

Due to the relationship of the researcher to the participants, it was important to maintain transparency throughout the study. As an administrator from a neighboring school, the
researcher was a professional colleague of the administrators, but had no power relationship over the teachers and students at the three sites. The researcher disclosed his professional identity to the teachers and students, but assured them that their participation in the study was completely confidential as well as voluntary. Working with the Institutional Review Board, the researcher was able to establish clear documentation that participation in the study had no connection to participants’ employment, performance evaluations, or grades, (see Appendix C) while clearly avoiding all possible hints of coercion.

This final chapter is organized into the following sections: discussion of major findings, discussion of findings in relation to the theoretical framework, discussion of findings in relation to the literature review, limitations of the study, significance of the study, next steps, and conclusion.

**Discussion of Major Findings**

In a review of all the findings and emergent themes across all interviews and focus groups, four themes that emerged as major findings through the data collection and analysis portion of the study. They are as follows:

- Major challenges associated with technology integration
- Effective use of technology is important for student performance
- Use of technology improves teacher effectiveness
- Technology influences student engagement

Each of these major themes is discussed below.

**Major challenges associated with technology integration.** The unifying theme that emerged across the three participant groups dealt with the challenges of technology integration at their school sites. When asked if their school was doing a good job using technology, all of the participants agreed that there was room for improvement. Professional development, teacher training, and technical support was referenced several times during the interviews of teachers and
administrators. Teachers and administrators indirectly alluded to the need for purposeful technology integration for all instructional staff. The current reality reflected an optional, yet inconsistent teacher-driven instructional technology plan. All of the participants further agreed that substantial investments in equipment and infrastructure needed to coincide with the additional teacher professional development and training. In addition, there was general consensus among all study participants that a long-term solution was needed to address slow Internet connections and low bandwidth to support the additional electronic devices.

Effective use of technology is important to student performance. Relevant research in educational technology (Javeri, 2007; Teclehaimanot, 2006; & Kulik, 2003) has indicated that effective use of technology occurs when the application directly supports the curriculum objectives being assessed; provides opportunities for student collaboration and inquiry-based learning; and adjusts for differentiated learning and provides feedback. All of the participants were in agreement around student comfort level in technological environments. There was also participant agreement regarding technology’s ability to provide increased access to greater levels of information to students in order to seek clarification of challenging concepts. Participants also noted that in a technology-rich environment, students are able to work independently while the teacher is helping other students.

Use of technology improves teacher effectiveness. Digital learning is defined as any instructional practice that is effectively using technology to strengthen the student learning experience. Digital learning includes a wide range of tools and practice, including online formative assessment, digital curriculum and online content, applications of technology, adaptive software for diverse learners, learning platforms, and other high level content (Staker, 2011). There is no clearly established definition of technology usage in K-12 schools (Bebell et al.,
Many studies have focused on technology usage, concluding that using technology in educational settings has benefits to students (Liu, 2011). Despite the lack of a clear standard definition, consistent thematic elements have emerged within the general discussion about technology in K-12 schools (Hew & Brush, 2007).

Despite the major challenges associated with technology integration, all teacher participants agreed that technology improved their overall effectiveness in the classroom. Teacher participants shared that technology allowed them to supplement their instruction with additional strategies to make academic content more accessible to students. Various technical tools allowed them to model acceptable academic behaviors, while differentiating for visual learners. Teacher participants further elaborated on the fact that technical tools such as social media, learning management systems, and email increased student-teacher communication, and in turn improved their student-teacher relationships. Teacher participants also agreed that technology allowed them to extend their classroom to an online environment, thus lowering the barriers of access to their students.

**Technology influences student engagement.** All of the participants agreed that technology influences student engagement by giving teachers additional options when explaining challenging concepts. Students shared that the use of technology helped hold their attention more. All participants were also in agreement that teachers were able to go more in depth on a wide range of subject when using the web and the opportunities generated by the additional online resources. Combining face-to-face instruction with online curriculum and instructional materials allowed for the greatest number of students to be exposed to relevant, highly engaging, highly technical instructional materials. Teacher participants iterated that the technological tools have huge effect on student interests, allowing students to be creative while boosting engagement.
on the subject. Administrators shared that technology also allowed students access to grades, assignments, and attendance while maintain real-time progress monitoring. All participants were also in agreement with a recent national study highlighting the outcomes of increased access to technology in classrooms and its ability to increase student engagement, encourage initiative and responsibility for learning, maximize resources, and increase the desire to pursue information beyond the classroom (Project Tomorrow, 2011).

**Discussion of Findings in Relation to the Theoretical Framework**

This study was informed through the perspective of Engagement Theory. This theory served as the lens to investigate the shared experience regarding technology integration in the classroom as perceived by students, teachers, and administrators.

**Engagement Theory.** Fundamental principles of Engagement Theory state that students must be engaged in meaningful learning activities through interaction with others and worthwhile tasks. Such task is possible without the integration of technology, however bodies of research show that technology provides flexibility and can facilitate engagement in ways that are difficult to achieve otherwise. The increase of access to technology and digital media has brought forth the emergence of engagement theory as a means of providing a framework for technology-based teaching and learning (Kearsley & Shneiderman, 1998). This framework supports participant consensus regarding the use of technology and its ability to increase student engagement.

Participants were in agreement that lecture-based classrooms void of technology were undesirable as students had difficulty paying attention and managing disruptive behavior. Engagement Theory also supports the use of digital media to enhance the instructional environment by appealing to multiple modalities of learning for students. The use of interactive
whiteboards, projectors, and web videos were named specifically. Engagement Theory helps identify the way school tasks and activities are designed, acknowledges variance in the quality of activities and to what level of effort students are willing to invest in the task (Schlechty, 2002). This framework is consistent with Kearsley & Schneiderman in that for engagement to exist, the student sees the activity as personally meaningful, the students’ level of interest is sufficient despite task difficulty, the student finds the task sufficiently challenging, and the task is worthwhile.

The findings from this study are directly aligned to the theoretical framework of Engagement Theory. Teachers shared that they are able to generate student interests in tasks when using technology. Students agreed that they were more likely to try challenging tasks if provided access to the Internet for clarification. All participants agreed that because students were accustomed to a technological environment outside of school, the same access was vital to achieving student engagement and ultimately boosting student performance. Kearsley and Schneiderman explain that student engagement is critical to the learning process. Although student engagement can still happen without technology, integration provides flexibility and additional possibilities that contribute to student learning. All participants confirmed that engagement levels were highest when working on creative projects in small groups. Such statements are consistently aligned the three basic concepts of engaged learning: 1) Relate: learning through collaboration, 2) Create: learning using a project-based approach, and 3) Donate: learning using an authentic focus (Kearsley & Schneiderman, 1998).

This study also demonstrated alignment with the Jones et al. (1994) framework for engagement consisting of 26 indicators in 8 categories: (1) learners are responsible for learning, and must collaborate with each other; (2) tasks for engaged learning should be authentic,
challenging, and interdisciplinary; (3) assessment shall be performance based and seamless with the standards-based curriculum; (4) instructional models should be interactive in design; (5) context for learning shall foster collaboration and knowledge building so that diversity is valued; (6) grouping will be heterogeneous; (7) teachers are to serve as facilitator, guide, and co-learner; and (8) students are to serve as explorer, teacher, and producer of knowledge. This premise was consistent with the beliefs of the teacher and administrator participants stating the importance of designing, developing, implementing, and assessing a learning process that focuses on the overall engagement of their students.

Willms et al. (2009) defined a framework of student engagement at three levels: social, academic, and intellectual. Social engagement described as the sense of belonging for students in their school life. Academic engagement described as engagement in academic activities at school. Intellectual engagement described as the cognitive factors to increase understanding, solve complex problems, or construct new knowledge. Student and teacher participants were in agreement that increasing communication between students and teachers helped them stay connected to school life. They further shared that using technology inside and outside of the classroom assisted students’ understanding of challenging concepts while encouraging academic independence and exploration. Students are motivated by educational experiences that are joyful, enriching, and transformational. They seek to increase their knowledge and skills, while building a sense of accomplishment. Engagement Theory is relevant to this study because it attempts to explain the factors that contribute to student performance specifically in urban schools.
Discussion of Findings in Relation to the Literature Review

The findings in this study connect strongly with the literature presented in Chapter 2 in the area of the use of technology to increase student engagement and student learning in urban schools. In particular, many of the findings in this study were consistent with the literature that pointed out how there is a need for the effective use of technology to increase student performance, improves teacher effectiveness, and enhance student engagement.

Bodies of research exist that support the call for change in the areas of 21st century skills and technology for the purpose of student engagement and academic achievement. Finding ways to integrate technology into urban classrooms so that transformation occurs can be difficult. There are layers of classroom and school complexities ranging from equipment acquisition to selection and adaptation of curriculum (Meier, 2005). Teachers often integrate technology by adding it into what they are already doing rather than changing professional practice (Cuban, 2001; Means, Roschelle, Penuel, Sabelli, & Haertel, 2004). Teacher participants conveyed strongly that there was great effort to provide teachers with the technical tools, but there was inconsistency with distribution of resources. They further shared that there was also a lack of professional development and technical training often leading to inconsistencies with usage in the classroom. When asked about major challenges to technology integration, a teacher participant shared, “I think that lack of training and professional development is the largest impediment, besides lack of funding.”

In addition, national education reform movements have called for significant increases in Science, Technology, Engineering, and Mathematics (STEM) Education. In light of such reform, concerns have been raised within urban schools pushing for the incorporation of learning technologies to equitably address the needs of diverse learners (Atwater, 2000; Lynch, 2000).
Atwater (2000) suggested using new technologies and the Internet to create culturally relevant standards-based curriculum and instruction to engage and motivate urban African American students. All participants agreed that technology provides teachers additional tools to address the varying needs of students in class. Using technologies to explore natural phenomena can potentially make students more motivated and engaged (Blumenfeld et al., 1991; Krajcik, Blumenfeld, Marx, & Soloway, 2000). Student participants shared that the use of technology helped their teachers go more in depth on the subject with information not found in their textbooks. One student participant shared:

I think technology would make a teacher a better teacher, because at the same time I believe they are learning with the students. They are getting information off of the Internet and I’m pretty sure it’s stuff they’ve never seen before. The stuff on the Internet is from all over the world, so they are learning new stuff while teaching. Technology is everything; you need it to do everything. It gives you a lot of information, it helps the students, and it helps the teachers.

The literature reviewed determine that there is also evidence to support that educational technology can improve student motivation, attitude, and interest in learning when students use applications that adjust problems and tasks to maximize students’ experiences allowing them to produce, demonstrate, and share their work with peers. The technology must also be challenging and designed to develop basic skills and knowledge (Javeri, 2007; Vonderwell & Peterman, 2008; and Bailie, 2007). The research also pointed out that computer-based instruction can individualize learning and increase student motivation due to students being able to move at their own pace (Underwood & Brown, 1997). Teacher participants believed that various technological tools allow for the modeling of desired academic behaviors in class. Such
demonstrations of learning were deemed critical to their students’ ability to achieve at high levels. A teacher participant shared:

If I was able to have more technology in my classroom, specifically computers; I know it would approve their grammar, their spelling, and their use of software like Microsoft Word and Excel. I feel that there are many times where you can teach a lesson and model it, but when the student goes and tries it on their own, it’s the first time they’ve ever tried it; it needs to be in real time. You need to model it and have them do it right there.

The literature further conveyed that effective use of technology in teaching is an integrated skill for teachers because it can help make complex content more accessible to students while preparing them for the demands of the technological workplace (Mouza, 2011). The need to equip urban students with technology skills is critical in order to foster greater diversity in the information technology field, while simultaneously broadening opportunities for employment. Teachers and administrators agreed that the use of technology improves teacher effectiveness by allowing for the supplementation of instruction through the use of a wide variety of strategies. They further shared that technology extended the classroom to an online environment while lowering the barriers of access to their students. With respect to technology to impact student engagement and student learning for urban students, one teacher participant shared:

We would be incredibly blessed to have more technology in this building. These students who come from the urban areas, their jaw drops when they see things like this, they want to engage when they see these pieces of equipment. They want to be able to engage with the SmartBoard, they want to converse with you when they're at home; absences stop
being a problem when you have technology. When everything is digital and the student asks what did I miss today, you can send it to them digitally. How could you not improve student engagement? And then performance, I think student engagement does lead to better student performance.

**Limitations of the Study**

As stated earlier in Chapter 5, the limited number of participants makes it difficult to establish whether or not their perspectives are unique to Metro Boston or universal to the urban school context. Upon review of methodology, Dr. Keren Zuniga McDowell, Director of Academic Access and Opportunity at Suffolk University shared, “The only students that we’re capturing in our sample are the students that are engaged at the first point of contact, by virtue of being at school. We’re not capturing any information from the students that aren’t engaged.”

Participants in the study volunteered based on their interest in the topic of technology to influence student engagement and student learning. The school attendance rate for the three school sites 94.7%, 87.4, and 82.5% respectively. This means that the students truly disengaged from school were not provided the opportunity to participate in the study due to their excessive absenteeism. Low motivation, however, is not unique to urban schools. A 3-year study found that half of the students reported taking school seriously, which was equally true in suburban and urban communities (Steinberg, Brown, & Dornbusch, 1996). Therefore it is important to note that the results can be generalized, yet still be transferable to other populations or contexts.

Further research is needed in order to definitively measure the impact of technology on student engagement and student learning in urban schools. This study focused on the perceptions of a targeted sample (students, teachers, and administrators) in order to determine the extent to which technology influences urban student engagement. This study also focused on
secondary students Grades 9-12 and ages 14-20 years old. However, urban student performance data indicates that evidence of the achievement gap begins as early as Grade 3. The 2009 National Assessment of Educational Progress (NAEP) data highlights that Black males perform lower than their peers throughout the country on almost every indicator (Snyder & Dillow, 2010). Large numbers of Black students continue to live in poor conditions. Significant numbers live in poverty, lack postsecondary education, and fail to participate in structured early childcare programs at the same rate as their White counterparts. Such factors also contribute to the lack of student engagement and provide insight into additional areas of study. Such environmental factors are wide and vary from school to school, which were not accounted for in this study.

Latino students experience similar gaps and challenges that are comparable to Black students. National data regarding Latino student performance in urban schools is also not favorable and only reinforces assumptions held regarding the achievement gap (Simon et al., 2011). Latino students present an additional challenge to urban schools whether they are English Language Learners (ELL) or not. Latino students that attend urban schools also live in circumstances that hinder their ability to be successful in school (Simon et al., 2011). Latino children were also less likely than White or Black families to have parents involved in home literacy and school readiness activities due to English language proficiency. NAEP 2009 data indicates that despite achievement levels of Latino students increasing significantly from 2003-2009, the gaps between Latino students and White students continue to be wide; regardless of ELL or non-ELL status (Snyder & Dillow, 2010). These environmental factors are also wide and vary from school to school, which were not accounted for in this study.
Purposeful technology integration possesses the potential to tip the balance between the achievement gap and student performance in urban school environments. Due to the pace of the industry, education practitioners have barely touched the surface regarding the potential of instructional technology as a platform to increase overall student performance. Further exploration of the implementation of technology in urban schools could prove beneficial to increasing student achievement and addressing aspects of the achievement gap. Future studies might investigate the specific categories of technology leading to increased student engagement or be used to track student performance in classes with extensive technology integration versus minimal technology integration. Either way, more information is needed to address this many facets of this challenge.

Significance of the Study

Growing researcher consensus has identified two key implications for learning that directly contribute to underperformance in urban schools: lack of motivation and lack of student engagement (Goodenow, 1992; NRC, 2003; Uekawa, Borman, & Lee, 2007; & Curwin, 2010). Researchers in general, have maintained that U.S. high school students are not fully engaged in classroom learning (Newmann, 1992; Shernoff, et al., 2003; Uekawa, Borman, & Lee, 2007). In the past, studies have shown that when students fail to achieve, it is a function of the opportunities they have versus the ones they don’t. The variance in students’ exposure, experience, economic resources, teacher qualification, curricula, and parental involvement often dictate the level of success they can hope to have with their education (Milner, 2010). Rather than focusing on the achievement gap, focusing on opportunity might be more productive. There are ranges of instructional resources that can lead to opportunities and exploration into the educational technology that may provide the solutions to such gaps (Milner, 2010).
This study is important to the field of education as it reports the opportunities that emerge when technology is integrated into urban classrooms. This study gives voice and brings importance to the perspectives of the primary stakeholders in urban schools: students, teachers, and administrators. Documentation of stakeholder feedback into the decisions that dictate urban school learning environments is rather limited. However, urban schools still present a host of additional challenges. The Achievement Gap refers to disparities in academic performance between the various subgroups of students and is used to identify performance gaps between White, Black, and Latino students, primarily from low socio-economic backgrounds. This is consistent with the majority of student demographic within many urban schools (CDF, 2011). The dropout epidemic has continued to be one of the challenges in the United States. Despite the national graduation rate being 74.9%, Latino students graduate at 63.5%, and Black students lag behind at 61.5% (Aud et al., 2011). Currently more than 1 million or 6% of all students ages 16-19 are not enrolled in school. While 2.1 million or 13% of all American high school students are enrolled in 1,634 dropout factories. Among these dropout factories, 35% of the students are Black and 29% are Latino (Aud et al., 2011). Such alarming statistics have long-term financial consequences such as: decreases in earnings by educational attainment, decreases in lifetime earnings, increases in poverty, and increases in social services participation (Aud et al., 2011). This study provides an opportunity to begin addressing some of the contributing factors to lack of student engagement.

In this study, engagement theory was used to investigate the relationship between technology use and its influence on student engagement in urban schools. The theory’s fundamental principles are based on students participating in meaningful learning activities through interaction with others and worthwhile tasks. With increased access to technology,
digital media, and online education, the emergence of engagement theory provides a framework for technology-based teaching and learning. The Theory of Engagement focuses attention on student motivation and the strategies needed to increase the chances that classrooms will be positioned to increase the presence of engaging tasks and activities (Schlechty, 2002). The results of this study were consistent with what the theory suggests; while providing deeper understanding of what opportunities are possible moving forward as communicated by multiple stakeholders.

**Conclusion**

In conclusion, this study was driven by the research question: How does the use of technology impact student engagement and student learning in urban schools, as perceived by administrators, teachers, and students? The responses generated from all of the participants acknowledged the many challenges associated with effective technology integration at their school. All groups agreed that there is room for much needed improvement. Despite these challenges, all of the participants felt very strongly that the use of technology is important to urban student performance. Each group of stakeholders also agreed with bodies of research indicating that effective use of technology occurs when the application directly supports the curriculum objectives being assessed; provides opportunities for student collaboration and inquiry-based learning; and adjusts for differentiated learning and provides feedback (Javeri, 2007; Teclehaimanot, 2006; & Kulik, 2003).

Study participants also agreed that technology improves teacher effectiveness through the use of a wide range of tools and practice, including online formative assessment, digital curriculum and online content, applications of technology, adaptive software for diverse learners, learning platforms, and other high level content (Staker, 2011). In addition, all study participants
reached consensus concerning the influence that technology has on student engagement. Combining face-to-face instruction with online curriculum and instructional materials allowed for the greatest number of students to be exposed to relevant, highly engaging, highly technical instructional materials. Study participants iterated that the technological tools have huge effect on student interests, allowing students to be creative while boosting engagement on the subject, encourage initiative and responsibility for learning, maximizing resources, and increasing the desire to pursue information beyond the classroom.

**Next Steps**

In speaking with the various participant groups of the study, several key suggestions were made in order to use technology to address the student engagement challenges at each school. Participants called for an inclusive process for determining the types of technology to be used in schools. They also wanted a comprehensive whole school technology plan with appropriate support. Participants felt that due to the importance of technology, multiple stakeholder feedback was essential. One student participant shared:

> Because all of the technology used is going to have an impact not only on the school or the teacher, but it affects our development. So it is really important that we actually get to choose whether to use more technology or not.

Study participants felt very strongly that stakeholder involvement must be used to build a strategic school technology plan aligned to the core mission of the school. Stakeholders should include, but not be limited to: students, parents, teachers, administrators, curriculum specialists, instructional technology specialists, and business professionals. There must also be a clearly defined mission for technology that is a component of the Whole School Improvement Plan that is aligned to the Common Core State Standards and the development of 21st Century Skills.
Participants agreed that schools must also shift from a voluntary teacher-driven technology process to a whole school initiative with accountability measures and performance goals.

Teacher participants shared:

Our principal tries to motivate teachers to use technology. If they need SmartBoards or Projectors, he pushes them to make sure it’s used in the classroom. But as a mission per se, I know that he tries. Down the pike we know we’re going to be assessed on computers, I think that fact alone means our school needs to be incorporating more technology in the classroom. But to meet our core mission, we haven’t really discussed it.

The school technology plan should also allow for appropriate technical training, professional development, and funding consistencies. Teacher participants communicated that despite technology being very important, technology resources were stretched thin and professional development and support was minimal.

The findings from this study suggest that an emphasis be placed on developing a long-term sustainable school technology plan that includes a transparent plan development process with the community of stakeholders, sufficient funding of infrastructure, proper screening and assessment of current and future technology needs, ongoing technical equipment training, and frequent high quality professional development in the areas of instructional technology, differentiated instruction, and innovative curriculum support. Further needs assessments should be taken to determine the range and types of technology that contribute to the greatest levels of student engagement, and ultimately student performance. Using student engagement as the driver of the plan can only encourage deeper conversations on campus regarding the seamless integration of instructional technology paired with rigorous classroom instruction.
Personal Reflection

I was born in Durham, North Carolina, but raised in Jacksonville, North Carolina often referred to as Camp Lejeune. I am the oldest of three children. I grew up around my father’s family. My father, aunt, and grandmother were each educators. I am a product of Onslow County Schools. I was a good student who made good grades, but I was never really engaged in school. The pace was lackluster and I often found myself bored or simply not interested in what was happening in class.

This is probably why I never desired to be an educator. I went to school for Design and Technology. This major allowed me to be creative while learning how to use new tools. College was a more engaging experience for me. I’d worked in the private sector for years in Marketing and Business Development. Over time, I grew tired of the cycle of the job and wanted a more fulfilling career. An opportunity presented itself and I became a Career and Technical Education Teacher in Durham. I taught Design, Production Printing, Animation, and Web Development. I liked being a teacher, but became frustrated at the overall educational experience of my students. I worked hard to make sure they had an engaging, yet authentic learning experience, but this was not the case in many of their other classes.

That’s when I made the decision to go back to school for school administration. I thought the only way I would be able to change the learning environment for the greatest number of students was to become a school leader. My philosophy has always focused on raising expectations and providing opportunities for students. This is what encouraged me to complete a doctoral program in educational leadership. I am sincerely interested in helping bring about systemic change with a long-term goal of becoming a Superintendent.
The reason I decided to pursue this study is because our current educational system is broken; specifically those in places serving urban students. I have serious concerns on our ability to meet the needs of our students and feel that change is warranted. The system continues using 21\textsuperscript{st} century tools with 19\textsuperscript{th} century pedagogy. The time has come for the industry to truly define technology integration. In order to define technology integration, student use of the tools must be the root of its foundation. We continue to operate in a system that classifies technology usage in the classroom as teachers using digital tools to simply display information. Students have minimal to no opportunity to interact with the tools or take ownership of their own learning using these new tools. Equipment acquisition is important, but change in professional practice, technical training, and innovative curriculum support are also needed if we are to tackle the growing numbers of disengaged, disenfranchised students.

The systemic and strategic realignment of instructional technology resources must also take place. Instructional decisions must be aligned with the stated goals of the system and the desired outcomes for students. However, this conversation needs to start with executive leadership, but finish with strong recommendations and feedback from the primary stakeholders, teachers and students. Lack of funding should not be the reason why we delay offering students the high quality, engaging, and relevant learning environment they deserve. It is my hope to be a leader of this new educational environment.
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Appendix A

Permission Letter Superintendent of Schools

October 1, 2012

Dear Superintendent,

As a Headmaster in an urban school district I am focused on the factors contributing to student achievement. My interest in technology’s ability to influence student engagement has grown through my studies as a doctoral candidate at Northeastern University. I am hoping to conduct a qualitative case study concerning the impact of effective technology integration on student engagement and student learning. This study would require data to be collected from at least (3) urban high schools. Therefore, I am requesting permission to elicit participation in this study from administrators, teachers, and students.

This case study will allow me to investigate the type(s) of technology found to be most engaging to students and the format(s) of instruction most preferable to students. The intended outcome of this study is to gain an informed perspective regarding the circumstances needed to increase student engagement in urban schools. The secondary outcome is to understand how such factors contribute to student learning and academic performance. I plan on interviewing administrators and teachers, as well as conducting small focus groups of students to document their thoughts on the subject area. Document analysis will also be conducted if available.

I believe this case study will only serve to benefit your school district, as it should inform urban educators on the range of opportunities available through purposeful technology integration.

If you have any questions regarding this study, please contact me directly at (617) 756-6903 or via e-mail at fhmcdowell@gmail.com or the chairperson of my committee, Dr. Christopher Unger at Northeastern University, (617) 909-1360. Thank you in advance for your time. I look forward to hearing from you regarding this request for permission.

Sincerely,

Fredrick H. McDowell Jr.
Doctoral Candidate, College of Professional Studies
Northeastern University, Boston, MA
Appendix B
Initial Participant Recruitment Letter – e-mail

September 1, 2012

Dear Colleagues,

I am currently pursuing my Doctorate in education from Northeastern University, and, as part of this pursuit, will be conducting a research study beginning in the fall of 2012. My study will be a qualitative study to investigate to what extent does technology integration influence student engagement in urban schools.

I am currently looking for teachers and students in your schools who would be interested in participating in small focus groups. The purpose of the evaluation is to investigate to what extent technology integration is achieving its intended outcomes of an increase in both student engagement and student learning. By participating, you would aid the district at large in improving and refining decisions surrounding future investments in technology and instructional support. Participating in this study would entail a brief interview for administrators and teachers (30-45 minutes), small focus groups of students (1-2 hours), and giving permission to the researcher to collect documents pertaining to technology and/or technology integration at your school, as well as field notes taken by the researcher during the meetings with participants.

Upon research study approval from Northeastern University, I will formally request your participation. Please be aware that agreeing or not agreeing to participate in this study will have no reflection on your work within the district. Also, any participation in the study will be completely confidential; names and other personal identifying information will not be used.

Please respond via e-mail to fhmcdownell@gmail.com if you are interested or have any questions. Thank you in advance for your time.

Sincerely,

Fredrick H. McDowell Jr
Doctoral Candidate, College of Professional Studies
Northeastern University, Boston, MA
Appendix C

Signed Informed Consent Document

Northeastern University, College of Professional Studies

Investigator Name: Fredrick H. McDowell Jr.

Title of Project: The Impact of Technology on Student Engagement in Urban Schools

Informed Consent to Participate in a Research Study

Why am I being asked to take part in this research study?
You have been asked to participate since you expressed an initial interest in participating from a request letter sent in September 2012.

Why is this research study being done?
The purpose of this study is to evaluate to what extent does technology integration influence student engagement and student learning in urban schools.

What will I be asked to do?
The researcher will be looking for you to participate in the following ways:
   1. Participate in an interview or focus group session that will be audio taped
   2. Allow use of researcher's field notes from face-to-face meetings dating from September 2012 onward as data

Where will this take place and how much time is needed?
The interviews will last 30-45 minutes. The focus group sessions will last approximately one to two hours, and will take place at a school in the district that is a convenient location for those participating, and at a convenient time for those participating.

Will there be any risk or discomfort to me?
There are no significant risks involved in being a participant in this study.

Will I benefit by being in this research?
Benefits will include the opportunity to aid in informing decisions around technology and 21st century instruction, benefiting yourself and the school district at large.

Who will see the information about me?
Your part in the study will be completely confidential. Pseudonyms will be used for all study participants. Only the researcher will be aware of the participants' identities. No reports or publications will use information that can identify you in any way.

If I do not want to take part in the study, what choices do I have?
You are not required to take part in this study. If you do not want to participate, please do not sign this form.
What will happen if I suffer any harm from this research?
There are no significant risks involved in being a participant in this study.

Can I stop my participation in this study?
Participation in this study is voluntary, and your participation or non-participation will not in any way affect other relationships (e.g., employer, school, etc.). You may discontinue your participation in this research program at any time without penalty or costs of any nature, character, or kind.

Who can I contact if I have questions or problems?
Fredrick H. McDowell Jr.                                      Christopher Unger, Ed.D.
College of Professional Studies                               College of Professional Studies
360 Huntington Ave, 20BV                                        360 Huntington Ave, 20BV
Boston, MA 02115                                                Boston, MA 02115
Cell # (617) 756-6903                                           Cell # (857) 272-8941
E-mail: fhmcdowell@gmail.com                                    E-mail: c.unger@neu.edu

Who can I contact about my rights as a participant?
If you have any questions about your rights as a participant, you may contact Dr. Christopher Unger. You may call anonymously if you wish.

Will I be paid for my participation?
There is no compensation for participation in this study.

Will it cost me anything to participate?
There is no cost to participate in this study.

I have read, understood, and had the opportunity to ask questions regarding this consent form. I fully understand the nature and character of my involvement in this research program as a participant and the potential risks. Should I be selected, I agree to participate in this study on a voluntary basis.

____________________________________
Research Participant (Printed Name)

____________________________________
Research Participant (Signature)          Date
Appendix D:

Interview Protocol for Administrators

1. What is your current job responsibility/role at the school?
2. How important is the effective integration of technology to your school’s core mission?
3. Focusing specifically on instruction, other than lack of funding, what are the major challenges associated with technology integration at your school?
4. What types of technology do you use to perform your professional duties? Can you give examples?
5. What types of technology do teachers have access to in your school? How are the resources distributed?
6. What would be the primary goal for technology integration in your school?
7. How is technology used to enhance or increase student learning in your school?
8. What would be the primary benefit of using digital content for instruction in your school?
9. To what extent is technology influencing student engagement at your school?
10. What tools do you think have the greatest effect on student engagement at your school?
11. How do you evaluate what type(s) of technology are to be used in your school? Who are the key stakeholders involved in this process?
12. Is your school doing a good job of using technology to enhance student achievement?
Appendix E:

Interview Protocol for Teachers

1. What is your current job responsibility/role at the school? What grades do you teach?
2. How important is the effective integration of technology to your school’s core mission?
3. Focusing specifically on instruction, other than lack of funding, what are the major challenges associated with technology integration at your school?
4. What types of technology do you use to perform your professional duties? Can you give examples?
5. What types of technology do teachers have access to in your school? How are the resources distributed?
6. How do you use technology to enhance or increase student learning in your classroom? What tools are you using to accomplish this task?
7. How important is the effective integration of technology to your students’ performance?
8. What types of digital content are you using in your classroom? Can you give examples?
9. What tools do you think have the greatest effect on student engagement in your classroom? To what extent?
10. Has the use of technology improved your effectiveness as a teacher? Can you give examples?
11. How does the school evaluate what type(s) of technology are to be used? Who are the key stakeholders involved in this process?
12. Is your school doing a good job of using technology to enhance student achievement?
Appendix F:

Focus Group Protocol for Students

Group Questions….

1. What types of electronic devices do you use at home or outside of school?
2. Do you have a way to access the Internet at home? How much time do you spend online?
3. What types of technology do you use at home to do your schoolwork? Can you give examples?
4. What tools does the Teacher use regularly to enhance or increase your learning? Do students have access to the technology?
5. How important is the effective use of technology to your academic success? Can you give examples?
6. What types of digital content are used in your classroom? Can you give examples?
7. If allowed, how would you use mobile devices to help with your schoolwork? Can you give examples?
8. If available, would you take a class online? What would be the benefits to you?
9. How would technology make learning more engaging for you? Can you give examples?
10. Will using technology make your teachers more effective? Can you give examples?
11. How does the school evaluate what type(s) of technology are to be used? Would you like to be involved in this process?
12. Is your school doing a good job of using technology to enhance your learning?