College Readiness of Urban High School Students in the United States: The Role of Technology in Preparing All Students for College

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Abstract

As we enter deeper into the 21st Century, there is a more urgent need to transform our educational system in the United States to better prepare our youth for the careers and technology of the future. This study examines how improving technology education at the high school level can improve the learning and college readiness of urban youth. It explores various reasons why it is imperative for our educational system to transform to fit the needs of a changing world and workforce, how denying technology education to some youth can diminish their opportunities and options for higher education and careers, and how small changes in one urban high school classroom impacted the learning of the students.

The subjects of the study were students in a private, all girls' urban high school in the San Francisco Bay Area. These students participated the initial project during spring of their sophomore year. Additional data was gathered in fall of their junior year. A total of 28 completed the survey.

Many of the students had very little experience with current technological tools. By the end of the project, the majority of students responded that they feel familiar and confident with new technology. This new awareness may help these students have further confidence to try something new.

Chapter 1 Introduction

In my experience as a high school teacher in both public and private schools in California, I have noticed more and more that students, particularly underserved students or those students who come from low socio-economic backgrounds and are often the first in their family to attend college, are entering high school with below grade-level skills in reading, writing, math, organizational and study skills. Academically, all of these high schools offer rigorous college-preparatory programs which include honors and Advanced Placement classes. However, too often the focus seems to be on teaching to the test (particularly in Advanced Placement courses) and offering a plethora of assessments so the students have ample opportunity to pass each class. High schools do not seem to be addressing the need to continuously develop the basic skills of students so they can not only get accepted into college, but also succeed and graduate once they are there. In 21st century education, there is an urgent need for schools to help develop basic technology, critical thinking and analytical skills that students will need to be successful their postsecondary education and career.

For many of my students, past and present, a college education is a lifelong dream. This dream is often shared by their parents who have made and continue to make extraordinary sacrifices to help their sons and daughters achieve this goal not just for themselves but for the whole family. For many of these families, education is seen as a path out of poverty and towards a better life. In fact, more and more students across racial and gender lines want to attend college, but the number of Latino and African American students actually graduating with four year degrees is still quite low (Roderick, Nagaoka & Coca, 2009). Many of the parents of my students are depending on the educational system to prepare their children to be successful in achieving a

college degree. In this paper I examine how high schools can better prepare all of their students for success in college by specifically looking at the role technology can play in getting students college and career ready. For many of my students, school is the only place for regular access to computers and the internet. I feel it is my duty as an educator to provide them with the access and opportunities to practice both the practical and critical thinking skills they will need to be prepared to succeed in college and their future careers.

Statement of Problem

Many students are entering high school below grade level and do not acquire the skills and academic support necessary to prepare them for a college curriculum. This problem is systemic and needs to be acknowledged and addressed on all levels. High schools need to transform their educational practices to better meet the needs of students and the changing demands of a technology rich, interconnected, global economy. Specifically, policy makers on all levels should revisit standards and testing practices to incorporate technology literacy that will not only prepare students for college, but also for the 21st century workforce. Finally, educators from kindergarten to college need to collaborate and communicate about the educational needs of students and practices that will allow students of all backgrounds to succeed in college.

Purpose Statement

The purpose of this study is to provide quantitative and qualitative data from studies that examine the college readiness of high school students in the United States. This study specifically examines how access to technology plays a role in college readiness and the possible

solutions educators, policy makers and students can enact to transform our current educational system.

Research Question

Students who attend high schools with fewer technology based classes and less access to technology on a regular basis will not be college ready and therefore less likely to graduate with a college degree. How can technology education in high schools prepare young people to be college and career ready?

Theoretical Rationale

In the early years of our nation's history, education and schooling were focused mainly on apprenticeships and preparing young people to work on their family farms. With the onset of the Industrial Revolution in the mid-1800s, there was a shift in education from apprenticeships to universal schooling. This form of education has been the basis of the American educational system since the Industrial Revolution. However, the past fifty years has introduced new forms of technology, new methods of learning and rapid changes. These new technologies, new methods of learning and rapid changes are pushing the educational system into a new revolution, a "Knowledge Revolution" (Collins & Halverson, 2009).

In the years before the Industrial Revolution, the majority of young people never attended formal school. Although some young people did have a couple of years of reading and writing instruction from their parents or other family members, most were both teachers and learners as they prepared to work the land with their families (Collins et.al., 2009). There was some push for education in the colonial era with the passage of the Massachusetts Act of 1647, the Northwest Ordinance of 1787 and the Land Ordinance of 1785 (Collins et.al, 2009). However, it was not

until the onset of the Industrial Revolution that the United States really set-up a system for universal education.

The Industrial Revolution brought many changes to the United States. In addition to advances in transportation, business and production, the Industrial Revolution also brought an unprecedented number of immigrants and rapid urbanization. In the early 1830s Horace Mann began to push for universal education in an effort to address problems he identified with the changes brought on by the Industrial Revolution. Mann believed that compulsory, state-supported education was necessary to prepare new immigrants for participation in a republican government and to help them assimilate to American culture and language (Collins et.al, 2009). Thus began state-sponsored universal schooling which shifted from the one-room school house to the multi-grade-level classroom; the system we still operate under today.

Unfortunately, our educational system has not shifted with the changes that the 21st century has brought (Collins et.al, 2009). Students are gathering information from a plethora of sources and increasingly this information is coming from sources outside of school. As Collins and Halverson (2009) point out "Technology is moving education out of schools and into homes and workplaces, pre-schools and post-schools, after hours and after-after hours" (p. 6). Schools are no longer the primary source of new information and learning. Students and adults are accessing new information from personal computers, the internet, television, video games and other newer and rapid sources of information. Although access to information is getting easier and easier, determining the validity of this information is becoming increasingly difficult.

Although schools are still seen as an important aspect of American society, our educational system has not embraced the rapid changes that these new technologies have

brought. Even though technology can been seen in schools, it has not been imbedded into the curriculum. Those who can afford it are exposing themselves to these new ways of accessing information, but many without the financial means are left falling farther behind. The new Knowledge Revolution needs to be embraced by our educational system if we are to prepare all students for the 21st century economy and workforce. As Collins and Halverson (2009) point out:

The computerization of work puts premium on skills of accessing, evaluating, and synthesizing information. To earn a decent wage in the future will require lifelong learning and expertise with information technologies (p. 5).

No Child Left Behind (NCLB) attempted to close the achievement gap in this country by raising standards and accountability. NCLB was particularly focused on closing that gap for children in underserved communities. Students from underserved communities are likely to be from low socio-economic households, are often the first in their families to attend a postsecondary institution, and are often living in large urban areas of the United States. However, even though more and more students want to attend college in the United States, the number of African American and Latinos graduating with four year degrees is still quite low (Roderick, et.al., 2009). High schools need to not only better prepare students for a college curriculum, but also need to be teaching students skills for success in the post-college workforce (Lippman & Keith, 2009). These opportunities would specifically help students from underserved communities break the cycle of poverty. Yet, if students in underserved communities are not getting the social and academic skills in high school that they need for college and beyond, then we will continue to see an increasing gap in the number of four year college degrees between

members of traditionally underserved communities and members of normative communities. The larger social and economic repercussions could be devastating.

Assumptions

- Many high school students, specifically students from low-income or underserved communities, are lacking the skills necessary for success in college.
- Even if these students get into college, many of them do not finish college and therefore limit their opportunities for employment
- Technological proficiency plays a vital role in college and career success.
- There are successful high schools that integrate technology into their pedagogy and curriculum. These schools better prepare their students for success in college and careers.

Background and Need

In 2002, California's public colleges and universities published an outline of the competencies expected of incoming freshmen. One specific section of this summary focused on the role of technology. In this they state "while many entering students are familiar with some technological elements, few demonstrate the crucial ability to evaluate online resources critically" (Academic Senate for California, Community Colleges, 2002, p.12). This same study goes on to state that students entering college should have these basic technological skills and "therefore, should have regular access to computer" (Academic Senate for California, Community Colleges, 2002, p.12).

The U.S. Department of Education under the Obama administration has drafted an outline called the National Education Technology Plan. In this plan, they have vowed to close the

achievement gap by getting all students college and career ready (Office of Educational Technology U.S. Department of Education, 2010). They acknowledge that "technology-based learning and assessment systems will be pivotal in improving student learning" (Office of Educational Technology U.S. Department of Education, 2010, p. 5).

Chapter 2 Review of the Literature

Introduction

During the late 20th century and into the 21st century, many aspects of our global society have transformed and adapted to the new technologies available, but schools are slow to this transformation. Many schools in the United States have access to technology (i.e. the internet and computers), but teachers have not changed their pedagogy to effectively use technology to improve student learning and achievement. Our educational system is still not preparing students for college or the work-force and the lack of education technology is making this worse. Teachers need to be better trained and more comfortable using technology as a pedagogical method and students need more access, training and guidance in the use of technology to enhance their understanding of subject matter. Students from low socio-economic backgrounds will fall further behind if schools do not transform their teaching to prepare them for college and beyond. The Obama administration along with California public colleges and universities have recognized and outlined ways in which schools need to more effectively incorporate technology to improve college-readiness and college graduation rates.

Background

The United States' educational system was developed to suit a world that existed one hundred years ago (Doblar, 2009). In this system, education was used to prepare young people for the repetitive tasks of factory life instead of preparing them for critical thinking skills needed in today's workforce. Unfortunately, the United States' educational system has not transformed beyond this model that was created during the Industrial Revolution. This means that learning is still very teacher-centered, students are asked to complete repetitious tasks, and the standards are

set-up so all students are learning the "same things, in the same way, and at the same pace as the other students in the school district" (Doblar, 2009, p. 117). Many leaders in educational reform, like Michael Fullan (2005), are calling for a complete transformation of our current educational system to one that better reflects the needs of our students and our society in the 21st century.

The Problem

When the United States' educational system was first set-up, only a small percentage of people were expected to attend and graduate from college. Now, however, more increasing numbers of students from various cultural, racial and socio-economic backgrounds are attempting to enter the world of higher education. In 2009, Roderick et.al. reported that between the years 2000 and 2005 enrollment in four-year colleges increased by 17.6% and in two-year colleges by 9% (p. 187). Kirst and Venezia (2006) reported that "eighty-eight percent of 8th graders expect to participate in some form of postsecondary education, and approximately 70 percent of high school graduates actually do go to college within two years of graduating" (p. 2). Unfortunately, the number of students actually graduating with four year degrees is still quite low. For example, even though more African Americans and Latinos have enrolled in colleges, in 2005 only 17.8% of African Americans and 10.5% of Latinos completed four-year bachelor degrees compared to 34.3% of Caucasian students (Roderick et. al., 2009, p. 187). Roderick et. al. (2009) refers to this as the aspirations-attainment gap: more students want to attend and graduate from college, but most are not able to accomplish this goal (p. 187). Furthermore, our high schools and colleges are not working together on a fixed set of expectations and skills students need to stay in college (Kirst & Venezia, 2006; Roderick et.al, 2009).

Many high schools are able to get their students into college, however, although these students appear to be *college-eligible* many are not *college ready* (Conley, 2008; Kirst &

Venezia, 2006; Roderick et.al, 2009). One indicator of this is the large number of students required to enroll in remedial courses which are designed to help prepare them for college-level work. These students are placed in these remedial courses based on course placement exams, and around half of students entering postsecondary education do not meet these placement standards and therefore cannot be considered college-ready (Kirst & Venezia, 2006). The need for these remediation courses does not only indicate the fact that entering students are not college ready, but also increases the time and money these students need to spend on their postsecondary education (Kirst & Venezia, 2006).

Although No Child Left Behind, which was signed into law in 2002, set standards to close the achievement gap, it is clear that the focus on standards and testing has not necessarily led to better educated and skilled students. In fact, 50% of Latino and African American high school students in the United States are already dropping out before they even reach college (Orfield, Losen, Wald & Swanson, 2004). These alarming dropout rates along with the increased need for remedial courses in postsecondary institutions and reports regarding the gaps in college ready skills are pushing educators to rethink our current educational system (ACT, 2009; Conley, 2008). It has become increasing clear that college ready does not just include passing high school courses and standardized tests. In fact many of these high school standards are not aligned with the skills necessary to be a successful college student (Kirst & Venezia, 2006).

Instead, preparing students for college involves developing their cognitive strategies, their content knowledge, their academic behaviors and their cultural skills and knowledge (Conely, 2008). To really prepare all students for postsecondary education, colleges, high schools and elementary schools need to start working together to develop standards, expectations, and training to prepare all students for the rigors of a college education (Kirst & Venezia, 2006, ;

Roderick et.al, 2009). Specifically, new standards in elementary and high school education need to address the skills necessary to be successful in both college and in the workforce (Lippman & Keith, 2009).

Looking Forward

There are many areas that students, parents, educators and policy makers need to focus to prepare our students for college and the careers that await them. The Obama administration has outlined the two major goals to be attained by 2020: 60% of our population will hold a 2-year or 4-year degree (an increase from the current 39%), and the achievement gap will be closed so that all students who graduate from high school will be ready for college and beyond (Office of Educational Technology U.S. Department of Education, 2010, p. 5). Specifically the Department of Education under Arne Duncan has outlined a need to focus on Science, Technology, Engineering and Mathematics (STEM) (U.S. Department of Education, 2010). In addition to these goals, there is a specific drive towards education technology.

In the U.S. Department of Education's National Education Technology Plan (2010) they have emphasized the need to educate our students to be more technologically literate. Although there is evidence that schools have access to technology (in 2005, nearly 100% of public schools had access to the Internet), this access has not translated into increased use of these resources by teachers and has not altered already existing teaching practices (Wells et.al, 2006, p.4). There is also a digital divide that our educational system needs to address. Underserved students from low-income and minority communities are less likely to have access to computers, the internet, and resources to support technology based learning at home (Office of Educational Technology U.S. Department of Education, 2010). This divide is a concern since those students who are not

exposed to technology are falling farther behind their cohorts who have regular access to technology.

This use of technology is not just access to the internet or regular use of computers, however. In 2002, California's public colleges and universities prepared a "statement of competencies expected of students." In this outline, they identify technology has being one of the primary elements of academic literacy that is expected of all entering freshmen and that high schools are obligated to teach (Academic Senate for California, Community Colleges, 2002, p. 2). In their section on technology, these colleges recognize that being college ready includes not only having the ability to access information, but also being able to critically evaluate and question the sources they encounter online (Academic Senate for California, Community Colleges, 2002). Lippman and Keith (2009) and Conley (2008) also recognize critical evaluation of sources as well as use of technology as necessary skills for postsecondary education and beyond.

Many researchers, educators and policy makers have identified the need for a more centralized role for technology in the classroom to get students college-ready (Lippman & Keith, 2009; Academic Senate for California, Community Colleges, 2002; Office of Educational Technology U.S. Department of Education, 2010). Students and educators need to embrace technology to prepare students for the professional world; they need to use these "real-world tools to create opportunities that allow them to grapple with real-world problems – opportunities that prepare them to be more productive members of a globally competitive workforce" (Office of Educational Technology U.S. Department of Education, 2010, p.7). Our inability to provide access to postsecondary degrees to our young people may impact the United State's ability to complete in a global economy.

There is also growing evidence that an increased use of technology by both teachers and students not only enhances understanding in subject matter, but also helps to develop the curiosity, analytical and social skills that colleges have identified as a need for students entering the postsecondary world. In 2006, Duran and Taylor published findings from "The MITTEN Program," a four-year program in the Detroit area which examined how the integration of technology affected instruction in social studies from elementary through high schools (p.9). They found that integrating technology into the lessons not only increased students' interest, motivation and involvement, but also led to improved responsibility and collaboration between students (Duran & Taylor, 2006). Teachers in the study who had received technology training reported feeling rejuvenated and more able to accommodate students with diverse learning styles (Duran & Taylor, 2006, p. 11-12).

The use of technology in and out of the classroom extends teaching and learning beyond the school day and school year. The use of programs like Blackboard and WebCT allow students to access content and practice skills outside of the classroom as well as saves teachers' valuable time on correcting and record keeping and gives them more freedom to focus on in-class instruction (Feustle, 2010). Students are already spending time outside of the classroom creating, exploring and learning in this digital world. According to Jenkins et.al. (2006), this independent participation requires parents, educators and policy makers to address what they refer to as the participation gap, the transparency problem and the ethics challenge (p. 3).

> Educators must work together to ensure that every American young person has access to the skills and experiences needed to become a full participant, can articulate their understanding of how media shapes perceptions, and has been socialized into the

> emerging ethical standards that should shape their practices as media makers and participants in online communities (Jenkins et.al., 2006, p.3).

It is the duty of educators and policy makers to ensure that our schools are modeling technology to our students; are engaging them in these new ways of learning and exploring; are developing their critical thinking, analytical and collaboration skills, and are allowing all students access to technology so that all students are college and career ready. It is particularly imperative that our society take steps to bridge the digital divide. Students from low-income, underserved communities need regular access to computers and the internet at home and at school so that they learn to utilize these tools and master the skills to become full and competitive participants in our global society (Jenkins et.al., 2006).

Numerous individuals and organizations are recognizing the need to create common goals and standards around our ever-changing technology. An overriding them in the literature is that incoming college students are not lacking familiarity with technology or the internet, but rather they lack the etiquette, critical thinking skills and creativity needed for a world embedded in technology (Academic Senate for California, Community Colleges, 2002; Conley, 2008; Lippman et.al., 2009, Office of Educational Technology U.S. Department of Education, 2010) (Gorka, personal communication, June 24, 2010). It is becoming clear that although students spend hours of each day online, on their mobile devices, on computer games or social networking sites, they do not necessarily know how to properly use these technological resources in an educational or professional manner.

In 2007, the International Society for Technology in Education (ISTE) created a set of Education Technology Standards for Students (International Society for Technology in

Education, 2007). The ISTE outlined six primary standards for integrating technology education into the classroom. Standard four focuses on critical thinking, problem solving and decision making. Our technology changes rapidly, but the need for these skills will outlast the latest technological fad. According to Gary Gorka, Executive Director of the Library at Dominican University of California, one of the biggest hurdles for incoming college students is the immediate reaction to go to the internet for answers (personal communication, June 24, 2010). As standard four emphasizes, students need to "identify authentic problems and significant questions for investigation" (ISTE, 2007, para. 4). Gorka argues that before students run to the computer to use a search engine for the answer to problems, students need to learn to think of possible solutions on their own and then utilize technology to help solve the problem (personal communication, June 24, 2010). It is then that the internet or other technologies to "collect and analyze data and use multiple processes and diverse perspectives to explore alternative solutions" (ISTE, 2007, para.4).

Another significant issue that Gorka identified was students' lack of "technology hygiene" (personal communication, June 24, 2010). The ISTE also addresses this issue in their fifth standard "digital citizenship" which addresses the need for students to " advocate and practice safe, legal, and responsible use of information and technology" (ISTE, 2007, para.5). What both Gorka and the ISTE seem to be addressing is the fact that students know how to use computers and the internet, but they do not know how to use them properly. Schools need to focus on teaching students' etiquette and safety online.

In 2008, Maya Payne Smart, a writer for Edutopia, reported on the Greenville City Schools in Tennessee. What is intriguing about this school district is they started a program

called HomeLink where they ensured that each student had computer and internet access in the home. The school district started this program in 2000 when signs of the digital divide were becoming apparent in their own community (Smart, 2008). In response to this, the community used grant and fundraising money to get reconditioned school computers and free internet access to families in need. In exchange, families who receive computers and internet funding through the HomeLink program must attend two mandatory trainings a year on how to use the computer and how to troubleshoot if there are problems (Smart, 2008).

The effects of the HomeLink program have been incredibly positive, and the school board continuously commits funding to this program because of research findings. Home computer and internet access has allowed teachers to extend the learning day and learning environment. Also, all parents know that they have the benefit of monitoring their children's use of the computer because it is in the home, and parents find it easier to communicate with teachers and the school because they can be accessed via email.

According to Smart (2008), a report from the University of California at Santa Cruz found that access to home computers increase high school graduation rates by 6.8% and also give students alternative activities which help keep them out of trouble and allow them the resources to complete their assignments (2008). Other programs like OnIt Foundation, InterConnection and Connect Kentucky have a similar mission of providing low-income families with computers in their homes to help ensure the academic success of their students.

According to data from the Census Current Population Survey and the U.S. Department of Commerce, in 2009 approximately 63.5% of households in the United States had an internet connection (U.S. Department of Commerce: NTIA, 2010). That is a figure that has risen from

18% in 1997 and 50% in 2001 (Day et.al, 2005). However, a disparity exists when looking at education level and income and access to the internet. Approximately 84% of those with a college degree or higher have internet access in their home, but only 28% of those with less than a high school level of education have internet access in the home (U.S. Department of Commerce: NTIA, 2010). If Gorka is correct and having regular access to computers, technology and the internet at home are essential for technology literacy and success in college, then the parent's level of education dramatically impacts the future success of the student.

In the same study by the U.S. Department of Commerce, the data showed the income level was also a telling factor in a household's access to the internet. In a similar trend, the higher the income level, the more likely it is that the household has regular access to the internet. For example, for households earning $150,000 or more a year, nearly 88.7% had internet access (U.S. Department of Commerce: NTIA, 2010). However, for households earning $25,000 to $34,999 a year only 45% had in-home internet access (U.S. Department of Commerce: NTIA, 2010). Again, the connection can be made that those students whose parents do not make as much money and/or do not have high levels of education are less likely to have internet access in the home. This becomes a hurdle for their children's ability to make it into college and/or succeed in college.

Chapter 3 Method

The researcher decided to take a qualitative approach when looking at the use of technology to prepare high school students for post-secondary success. The researcher attended a digital innovation symposium in the summer of 2010 where she learned about various technology methods and skills that she implemented into her classroom in the fall of 2010. She used an action research approach where she recorded both her own experience with the technology implementation as well as the students' responses and opinions. Students were surveyed about how using technology both helped them better understand the content and helped improve their own use and understanding of technology skills.

Sample and Site

A convenience sample of 26 students from the researcher's high school United States history classroom participated in this study. These participants were selected because they were active participants in this action research study and their own experience, along with the researcher's experience, provided the qualitative information that was gathered. The school is a small, inner-city, private high school in the San Francisco Bay Area. This school was chosen because it was the place of employment for the researcher and the students represented the underserved community that the researcher was studying.

Access and Permissions

All subjects that participated in this study were members of the researcher's class and the research methods were imbedded in the existing curriculum. Therefore, all subjects were participating in this study as part of their class, but all of their personal information remains confidential. Names or other identifying factors were not used in the summary report.

Data Gathering Strategies

The researcher purposefully selected the subjects for the action research process of this study because they were the researcher's students. The researcher implemented a series of lessons using available technology to enhance the learning and understanding of the subjects. The researcher then chronicled her own experience through a series of journal entries and the researcher's participants were asked to provide feedback about their experience.

Data Analysis Approach

All data and information collected, reviewed and evaluated by the researcher. The researcher noted and analyzed common themes and lessons learned both by the researcher and the subjects.

Ethical Standards

All procedures met relevant local, state, and federal regulations regarding use of human subjects in research. The study adhered to the ethical principles in the conduct of research with human subjects as set forth by the Dominican University of California. The research proposal was reviewed by my faculty advisor and approved.

Chapter 4 Findings

Description of Sample and Site

This study was conducted at a small, private, all-girls high school in the San Francisco Bay Area in the spring and fall of 2010. This small, urban high school serves young women from the San Francisco Bay Area who have limited financial means and therefore would qualify as low-income students. Of the twenty-six student who participated in the project, 17 classified themselves as Latina, 3 as Caucasian, 4 as Black and 2 as Asian/Filipina. All of the students in the study were students in my 10th grade modern world history course as well as my 11th grade United States history course with the exception of one student who transferred into the school at the beginning of her 11th grade year. This class project attempted to increase students' use and knowledge of various technologies as learning and educational tools as well as increase students' understanding of the course material through use of this technology during an oral history project.

The twenty-five students who were enrolled in my modern world history course during their 10th grade year began using a class blog for current events, class discussions and project journaling. For many of the students, the class blog was their first experience with blogging. These students also used online games such as www.sheppardsoftware.com to increase their knowledge of geography and the interactive learning tools at http://www.pbs.org/race/001_WhatIsRace/001_00-home.htm which allowed them to explore the history and concept of race. During the final semester of their 10th grade year, the students engaged in an oral history project where they researched and then interviewed Holocaust survivors from the local area. In an effort to preserve these histories, the students recorded them using FLIP cameras which they then planned on turning into small videos to share with the larger community through a website or community event.

Data Collection

At the beginning of their 11th grade year, I continued and expanded the use of the class blog. The students continued to use if for current events discussions but also began generating their own discussions based on class themes and activities. This arena provided them with a space to continue class discussions, share opinions and ask and answer lingering questions that they had outside of class time. The students in my 11th grade United States history course also began a second oral history project where they explored belonging and identity in contemporary American society. They were introduced to digital recording devices and podcasting software. However, before beginning this second project, I used a survey using a Likert scale and open-ended questions to assess what they had learned from using technology in this class and to find suggestions on how to improve that learning. I also assessed their learning through observations and through their feedback on the class blog.

Major Themes –Survey Results and Analysis

The students completed a Likert scale and open ended survey in the fall of 2010. A vast majority of the students, 18 in total, had very little to no familiarity with blogs, online resources for current events and online educational games before they took my class and complete this project. All 26 of the students responded that they felt either "very familiar" or "somewhat familiar" with the use of blogs and online educational games after the class and project. Most of the students felt that that blogs provided a good forum for current events and class discussions. Some students mentioned that the blogs provided them with a place to express questions or opinions that they did not share in class or were too shy to say during the class discussion. Many of the students suggested using the current events blog has an introduction to a topic that we expanded in class. The responses to the blog as a discussion forum had mixed reviews. Some

students found it helpful if they were absent from class or they liked it as a forum to continue class discussions. However, some students found that they did not participate in the blog unless they were assigned to do so. As with the current events blog, one barrier to participation online was infrequent access to the internet or a computer.

The responses to using the internet to search for academic information and the use of FLIP cameras and editing were mixed. Thirteen students felt "somewhat familiar" with using the internet as a resource before my class and twenty-one responded "very familiar" with using the internet as a resource at the end of my class. However, in the open-ended responses, many of the students felt they still needed more guidance in finding reliable internet resources. Sixteen of the students had "no familiarity" or "a little familiarity" with the FLIP cameras and the editing software. Twenty students felt "very familiar" or "somewhat familiar" with the FLIP cameras and editing after the project and my class. However, only students who were assigned the role of "technician" or "creator" were responsible for using the FLIP and the editing software. Therefore, not all students were given the opportunity to use this technology.

Students were also asked to assess how new technology aided in their knowledge and understanding of historical material in my class. Overwhelmingly the students felt the blogs, especially for current events, the online educational games, and FLIP cameras helped them comprehend the academic material better. The responses to using the internet as an academic search engine and the use of editing technology were mixed. However, about half the students did say that they "somewhat agree" that these tools aided in their learning.

The final section of the survey, which consisted of open-ended responses, asked the students to comment on how using oral history aided in their understanding of history. All of the respondents replied that the oral history project and guest speakers not only helped them

understand the history of the Holocaust better, but also gave them a more emotional connection to the speakers and the history. Almost all of the students recommended oral histories or guest speakers be used more often in class to help them feel more connected to the history and the human experiences of the people who lived through the events.

Technology – Use and Limitation

Based on my own observations and to student responses on their blog, it was clear that much of the technology improve student learning and engagement but also provided frustration and limitations. One large hurdle we faced was access to technology including computers and the internet. Although my school has a computer lab, access to the computers is limited to specific time periods and it is often overtaken by other students or classes. Although some students have access to computers or internet at home, not all of them do so it was difficult for them to consistently complete class blogs or online games. When we completed the project, the limited access to working computers and internet prevented students from being able to successfully edit the videos of the Holocaust survivors. In fact, many of my students volunteered in the fall of 2010 to complete these videos for a project they began the previous school year. However, the same limitations of access to computers and software made the process of completing the videos more challenging.

Chapter 5 Discussion

Summary of Major Findings

The literature made it clear that transforming the current educational system in the United States is essential to preparing our young people for college and careers in the 21st century. Although some schools and districts have found positive results from introducing and improving technology with their students, it is clear that equal and consistent access to new technology is still a major challenge. The schools and parents who have the financial means to keep updated on new technology are able to provide their students will the necessary exposure and skills they need to be successful in a 21st century world. However, lack of access both at home and school continue to increase the gap between affluent schools and schools who are unable to financially support changing technology. Those students without regular access to new technology will fall further behind their peers both in their ability to get into and succeed in college and in their success in the workforce.

Limitations/Gaps in the Literature

When interviewing Gary Gorka, it became clear that we are not looking at the students who never make it to college. Although there are data that provide demographic information about these young people, their voice is not being heard. We need to now discover how technology plays a role in limiting these students' ability to even get to college.

Implications for Future Research

Some schools and districts are introducing the most advanced technology into their schools. For example, some schools are providing iPads for their students. Some argue that iPads will provide students with consistent exposure to the latest technology as well as replace

traditional textbooks as more and more are being produced digitally. As technology continues to rapidly change and evolve, we need to delve deeper into how technology really increases student learning and critical thinking skills. Are these new tools necessary to student success and learning or are they a passing fad that will cost schools a lot of money.

Overall Significance of the Literature

The literature makes it clear that our educational system needs to better reflect the critical thinking and analytical skills necessary for success in college and beyond. There is a ripple of change that is beginning at the local and individual level. However, systemic change is necessary to provide these opportunities to all young people in the United Sates. If the United States wants to continue as an intellectual and economic leader, it is imperative that it educates its youth for a changing world.

Conclusions

Most of the educational system is still set up according to prepare people for jobs that no longer exist. Overall, there needs to be a transformation in our educational system that focuses on 21st century skills such as, critical thinking, analysis, evaluation. Included in those skills are advances in technology that change each and every year. Schools need to decipher which new technological skills are imperative for student learning, and how these technologies can become part of the curriculum for all students.

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