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The purpose of this research is to better understand the influence emerging media technologies such as MP3 players, cell phones, and social networking sites are having on teachers in public high schools. Through the experiences teachers and staff members shared with us, the reader will gain a better understanding of how teachers and staff members feel student personal media devices (PMDs) and school instructional technologies are influencing their work, both positively and negatively.

A case study approach was the primary research methodology used to collect information for this study. Data were collected by a research team through teacher and student interviews, classroom observations, and student shadowing opportunities. Teachers and staff members who participated in this study volunteered because of their interest in this topic, and students were recommended by teachers because of their interest in technology. A standardized interview protocol was utilized in both the teacher and student interviews to ensure higher levels of validity and trustworthiness.

The data collected were analyzed and common themes surfaced to demonstrate how teachers and staff members perceive emerging media technologies are influencing their role as educators. Results from the analysis show that teachers and staff members believe there are both positive and negative outcomes stemming from technology. Overwhelmingly, teachers feel student PMDs are negatively influencing their work. The data results suggest that teachers are using the instructional technologies available to them to support their existing teaching methods. However, there is some evidence that

points to teachers beginning to allow students to use technology in new ways that support engagement.

EXPLORING THE INFLUENCE OF EMERGING MEDIA TECHNOLOGIES
ON PUBLIC HIGH SCHOOL TEACHERS

by

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CHAPTER I

INTRODUCTION

I believe that the motion picture is destined to revolutionize our educational system and that in a few years, it will supplant largely, if not entirely, the use of textbooks. I should say that on the average we get about two-percent efficiency out of schoolbooks as they are written today. The education of the future, as I see it, will be conducted through the medium of the motion picture . . . where it should be possible to obtain one hundred percent efficiency. (Thomas Edison, 1922, as cited in Cuban, 1986)

For more than a century, technology has become an increasingly larger and more important part of human existence. Thomas Edison, and many like him, believed that the motion picture was a tool that would take education to new heights. Since that time, many technological inventions have been said to be the next tool to improve the methods that schools use to educate our students. For one reason or another, technology has not had the impact in many of the schools that was believed to one day occur. Today, more than ever, educators are faced with both opportunities and challenges of integrating technology into classroom instruction (Wald, 2004). A project conducted by the International Society for Technology in Education (ISTE, 2000) reported that “traditional educational practices no longer provide students with all the necessary skills for economic survival in today’s world” (p. 5). This study leads me to believe that if schools are not able to upgrade teaching practices from the nineteenth and twentieth century methods to meet the needs of the twenty-first century student, we will not be preparing them for the global job market.

Rationale and Perspectives of the Researcher

I am currently serving in a senior leadership role in the school district to which Newlands High School belongs. It is my job to supervise high school principals and monitor the student achievement data coming from their schools. I have been a high school principal, a K-8 assistant principal, and an elementary school teacher. In the past few years, I have had the opportunity to see firsthand how cell phone and MP3 players have changed how school teachers and administrators work with their students. I have also been able to witness how students seem to be disengaged in their classrooms because of the lecture-based approach many teachers use to deliver their curriculum.

It is my intention to use my experiences as an educator along with the review of literature and the data the research team and I gathered through our research to demonstrate how the work of teachers has been influenced by emerging media technology. I have used the data to reveal implications that need to be considered as well as recommendations I believe may provide teachers the assistance they need to effectively use technology as an instructional tool.

Problem Statement

We are in the midst of a global technological boom that has, in the words of Thomas Freidman (2007), “flattened the world.” Because of this “flattening,” we are able to connect to people and places all over the world. Students and teachers alike are now able to get instant information about happenings all over the world, which is a far cry from simply relying on information that was printed in textbooks years ago.

Many young people today have become masters of manipulating technology that far surpasses the knowledge of most adults. Students have learned how to type papers while listening to MP3 players while they also text-message friends on their cell phones. Many students have been exposed to the world of technology at an early age. Secondary administrators and teachers now face the challenge of students using technological devices to record teachers as they deal with difficult situations in their classrooms. These recordings can either be posted on social websites such as YouTube, Facebook and MySpace, or simply submitted to the press (Peck & Mullen, 2008). Peck and Mullen suggest that “video sharing areas like YouTube provide for dissemination of student-created content, ensuring students play an ongoing, though unsanctioned, school public relations role” (p. 2). Yet, when students come to school, they are often forced to sit in rows and columns so that they can “receive” information from their teachers.

Purpose of Research

I was fortunate to be a member of a research team that consisted of Drs. Craig Peck, Carl Lashley, and Carol Mullen. Our intent was to look into the effects emerging media technologies are having on high school teachers and students. We did this by interviewing students and staff members at two different high schools in a large school district in the Southeastern region of the United States. We gave these schools the fictitious names of Newlands and Downtown High. We also shadowed the participating students and observed in the classrooms of the teachers who were in our study. My role on this team was heavily involved in one of the schools, and most of my interactions were with staff member interviews and observations. However, since I was a part of the

larger study, there are instances in this study where I have used student data to support my findings.

The purpose of my research was to conduct a study which examined how emerging media technology is influencing staff members and their instructional practices at Newlands High School. Emerging media technology, in this study, is defined as any technology emerging in the late twentieth and early twenty-first centuries. Examples of this technology may include, but are not limited to, MP3 players, laptop computers, Personal Media Devices (PMDs), cell phones, and social networking sites found on the Internet. These emerging technologies have quickly become an important factor in the lives of people all over the world.

I became interested in researching this topic after watching a video aimed at helping educators calibrate rigor in their classrooms. Once this video of a high school social studies lesson concluded, the presenter asked a question which initially left many of us scratching our heads. She asked, “When do you think this video was filmed?” Struggling to figure out why this mattered, one participant said he believed it was filmed last school year. The presenter let us know the video had been recorded in 1986. Even though public education began long before 1986, the presenter’s point was that nothing has really changed with regard to teaching and learning in most public high school classrooms. Teachers are still delivering information, for the most part, and students are still expected to receive it and regurgitate it at a later date. As I was conducting classroom visits, I rarely noticed any instructional practices that involved technology. Many principals and teachers were becoming alarmed at the large number of phones and MP3

players that were being confiscated by the school because students were violating the district electronic device policy.

At this point, I wanted to know more about how emerging media technology was influencing the high school experience. Because of my role as an educator, I became particularly interested in how the job of a teacher was being influenced by all of the available technologies. That being said, this study was guided by the following questions: What influence are emerging media technologies having on secondary teachers and their classroom instruction and professional preparation? What challenges do high school teachers face with regard to integrating instructional technology into school curricula while they also enforce school policies managing the use of Personal Media Devices (PMDs)? What are the implications to consider with regard to educational technology reform efforts? My findings from the interviews and observations I conducted are intended to answer questions such as these and provide insight for school leaders to consider if they are moving toward integrating technology into their school curricula.

Research Background

I was part of a research team that consisted of Professors Drs. Carl Lashley, Carol Mullen, and Craig Peck. We were interested in investigating how emerging media technology devices are influencing instructional practices, administrative policy, student perceptions of their schools, and the day-to-day operations of high schools in the twenty-first century. Two high schools, which have been given the pseudonyms of Newlands High and Downtown High, were the focus of our work. There were four key steps

involved in gathering our data: (a) teacher interviews, (b) classroom observations, (c) student interviews, and (d) shadowing of students.

The teacher and student interviews were conducted and recorded by Dr. Peck, graduate student Ty-Ron Douglas and me and were later transcribed and coded. The classroom observations and student shadowing activities were recorded on forms the team created, which had been approved by the IRB committee from November 25, 2008 to March 30, 2009. While we were involved in conducting research in two schools, most of my work occurred at Newlands High school. Therefore, I have presented a case study of Newlands High, use the data to display my findings in Chapter IV, and interpret the data in Chapter V to support these findings and add a deeper perspective to the challenges high school teachers face with regard to emerging media technology in the twenty-first century.

Description of Key Terms and Variables

The intention of my study is to better understand how emerging media, or emerging, technologies are influencing the practices of teachers in today's public high school settings. What are emerging technologies and how do they relate to student engagement? BusinessDictionary.com (2009) defines emerging technologies as:

new technologies that are currently developing or will be developed over the next five to ten years, and which will substantially alter the business and social environment. These include informational technologies, wireless data-communications, man-machine communication, on demand printing, bio-technologies, and advanced robotics. (BusinessDictionary, 2009)

Put simply, emerging technologies are any developing technologies whose science or basic principles are understood and at least some of their useful applications are recognized. However, these technologies can be misunderstood or can be at odds with existing processes, which can cause them to become disruptive to the set norm.

Throughout the data collection phase of this research, we used various terms to describe the media devices the teacher and students were either using or describing. For the purposes of this study, it is important to draw some distinctions between a few of the terms I have used in this study. The overarching term that we used was emerging media technology, and was defined above. Another technology term we used to describe technology is Personal Media Devices, or PMDs. Devices we considered PMDs were, but are not limited to cell phones, digital cameras, laptop computers, and MP3 players. All of these devices belong to the participants and are not the property of the school.

PMDs influenced the teachers in different ways depending on the circumstances. For example, a teacher may allow students to use their MP3 players during the independent practice phase of the instructional period. In this case, the teacher may feel the PMDs belonging to the students are helpful or may enrich the learning environment for the students. However, in another example, a teacher may have been forced to confiscate a cell phone from a student during class time because he/she was texting. In this situation, the teacher had to interrupt class to confiscate a phone, knowing the student may or may not cooperate with his/her demands, which deepens the disruption of the PMD.

These two examples describe what this research team refers to as the technology confliction facing public high school teachers of the twenty-first century. For the purposes of this research, being conflicted about technology can be defined as the conflict, or dichotomy, educators face as they work to infuse technology into their instructional plans while they also enforce school/district policies aimed at limiting student access to PMDs and internet access. While most staff members interviewed understood technology is going to play a large role in the lives of twenty-first-century students, they also understand there are inappropriate ways in which students can use this technology. This being said, the staff members are torn between appropriate and inappropriate use of technology, which is why I believe they are conflicted about technology.

The other type of technology we referred to in our study was instructional technology. This is the technology that is owned and supported by the school and the school system. This technology may include, but is not limited to, interactive white boards, portable document cameras, computers, laptops, Internet devices, and digital projectors. Interactive white boards is a broad name for devices that, when used with a computer and some type of video display, makes the surface of the display become touch sensitive in some manner and allows it to be used to control the computer. I have also talked about digital tablets, which are hand-held, interactive boards that wirelessly project hand-written information to a larger screen. Teachers use these devices to give notes, or to create problems for students to work on as they walk around the room and check for progress. A portable document camera is basically a high resolution web-camera that is

used much like an overhead projector. Someone using a document camera is able to project a real-time image of a document, such as a page in a book, to a large audience.

There are a number of emerging media technologies referenced in this study. The first set is known as social networking sites. These are sites where mass numbers of people gather to communicate electronically using the Internet. Some of the more popular sites are, but are not limited to, Facebook, MySpace, Twitter, and YouTube. One teacher participating in the interviews referenced a site we had not heard of before called CouchSurfers, which is one more example of how social networking sites have been created for nearly any interest area.

Summary

As I mentioned earlier in this chapter, it is my intention to explore the influence emerging media technologies are having on high school teachers. This study introduced teachers who belong to a high school in a large school district. Their words and actions have been captured and provide an example of what happens in a school when instructional and personal technologies become a part of the everyday culture.

In Chapter II, I have conducted a thorough review of the literature as it pertains to emerging media technologies and their influence on teachers and the schools in which they work. I focused on how teachers appear to be conflicted about the role technology plays in schools. A review of the barriers teachers and schools face as they seek to find ways to effectively implement instructional technology was conducted. Then I concluded with a review of what the literature has to say with regard to the opportunities and challenges emerging media and instructional technologies bring to schools.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

A comprehensive review of the literature pertaining to emerging media technologies and their influence on public high schools was conducted. Online databases such as EBSCO Premiere, ProQuest, and LexisNexis Academic were used in conjunction with journal articles and books that focused on pre-existing research in this area. This literature review is meant to provide the reader with a larger perspective of the challenges facing public high school teachers with regard to emerging media technologies. How are personal media devices (PMDs) and other emerging media devices influencing the instructional day in public high school? What are the barriers keeping schools from successfully infusing technology in the classroom? The following review of the literature will help the reader construct a framework to better understand the data that is shared in Chapter IV.

The Influence of Emerging Media Technology

Technology is rapidly emerging as a source of power enabling one to be successful and compete in a global society. Students come to school with a wide range of abilities related to the access of emerging technologies. They can access the Web whenever and wherever they want (March, 2005), but there are those students who have not been afforded that same opportunity. This may be related to socioeconomic, racial, or

gender factors, but it is clear many of these students and their families are relying on schools to prepare them to be globally competitive. To support this expectation, most state Boards of Education, including the North Carolina Board of Education, are now including technology implementation language as they publicize goals for their schools (NCDPI, 2007).

As I reviewed the literature and thought about the research our team conducted, three themes emerged: (a) the existence of a technology conflict, (b) teacher reluctance and other barriers to technology infusion, and (c) other opportunities and challenges that exist for educators as it relates to emerging media technologies.

The Technological Conflict

One of the issues facing the teachers with regard to technology is the dichotomy of enforcing policies meant to limit student use of personal technology devices as they also seek to find ways to support technology usage in their lesson. As a research team, we refer to this dichotomy as technological conflict. Do staff members feel that they are prepared to use emerging technology to support, even drive teaching and learning? Do they believe emerging media technologies are a relevant and important tool that can enhance the curriculum of the twenty-first century? Do staff members believe technology is helping or hindering the public school mission of educating all students? While these are not questions I used to guide my research, they were on my mind as I reviewed relevant literature.

As referenced by Peck and Mullen (2008), many reports exist across the country regarding school “electronic device” policies meant to dissuade students from bringing

such items to school. For example, a student government meeting in a Florida school district approached school board members demanding cell phones be allowed in their schools during lunch time and between class changes. Teachers and students alike were not pleased with this recommendation citing incidents of cheating and pictures of fights occurring in school that end up on MySpace pages. When asked about phone usage in her school, one student said, “of my seven teachers, there are two—you will get in trouble. The other five are ‘just don’t do it while I’m teaching’” (p. 1). This article highlights the apparent battle existing in high schools each day. Some teachers are overwhelmed with managing the job of teaching their curriculum while policing for texting students.

Technology conflict becomes more accentuated when school district administrators create policies meant to regulate the use of personal “electronic devices,” yet they also are finding innovative ways to improve student access to the advantages of technology. For example, school officials in Scappoose, Oregon have been struggling with the idea of giving all students in the district access to e-mail accounts (Ash, 2008). District leadership felt it necessary to take the step of providing email addresses to all students in order to improve teacher/student communication and to better prepare students for college and the job market. However, an official from the Scappoose district declared, “If the teachers lay down the expectation, the students have to adapt.” But “a lot of teachers aren’t comfortable” using e-mail with their students, and “trying to get them to use [it] has been a bit of a challenge” (as cited in Ash, 2008, p. 4).

Student Comfort vs. Teacher Comfort with Emerging Media Technology

Part of what may be causing the digital conflict could stem from teachers realizing their students are much more familiar with emerging media technology than they are themselves. In 2010, teachers are becoming more aware of technology and are beginning to find new ways to integrate emerging media technology into their lessons. Some are even advocating the enhancement of learning with technology. However, there are still a large number of teachers who are reluctant to recognize the impact technology integration can have in the classroom. Today's students are familiar with web-based activities like blogging, instant messaging, Facebook, and My Space, while many teachers are just now beginning to feel comfortable using email.

A study done by the American Institute for Research entitled the Pew Internet & American Life Project (Levin & Arafeh, 2002) took a deeper look into what they called the "Digital Disconnect." There were many findings which are important for educators to focus on, especially some of the statistics existing with our students and their ability to use the Internet. They reported that 94% of 12- to 17-year-old students using the Internet have used it to perform school research, while 71% used the Internet as the major source for a recent school project. One high school boy was quoted as saying "it is my education. I get all my information off the Internet. I don't even look at books anymore." A female student shared her views when she said:

I think most of us are just accustomed to using it. I mean we just think it's there for us. And, I'm not sure if I'll phrase this right, but it's like we're addicts. We need it and when you take it away it's not . . . it's a little bit harder to live without it. (Levin & Arafeh, 2002, p. 4)

Barriers Preventing Technology Infusion

Through my research and the review of literature, barriers to technology infusion began to surface. Time, lack of training, budget implication, and other issues are common. As you will see in Chapters IV and V, the lack of time and training weigh heavily on the staff who participated in our study. The literature suggests the frustration educators feel when attempting to deliver their curriculum effectively, while they also are told they are to use technology to prepare students for the twenty-first century.

Teacher Apprehension

Teachers, like most people, are often reluctant to change, but when the change involves technology, fear and misunderstanding can also enter the fray. Linsky and Heifetz (2002) refer to two specific types of challenges people face when dealing with change: technical and adaptive. A technical challenge is the type of change that involves using information that already exists and is often controlled by the people in charge. For example, if the lunch schedule is not working out because there are too many students in one of the lunch periods the principal will switch some of the classes around to balance things out. An adaptive challenge requires people to learn new ways of doing things. The only way to make this happen is to change the hearts and minds of those who need to make the change, so they will see the need. Asking teachers to implement technology into their instruction is an adaptive challenge (Linsky & Heifetz, 2002).

It is important to note that it is difficult to force this type of change from the central office or the office of the principal (Yang & Huang, 2007). There are several questions which must be answered before teachers are willing to make small changes in

their classrooms, which may explain why there has been such difficulty in making technology a viable part of the curriculum. A teacher who participated in a case study with McNierney (2004) summed up this feeling when she said, “When technology is used in the classroom, it needs to work and not interfere with the instruction” (p. 66). The apprehensiveness that the impact technology integration has on classrooms was captured when another teacher stated:

As with any new educational innovation, the impact of the changes that accompany the introduction of technology on all the stakeholders needs to be considered. In a technology-enhanced classroom, where teaching and learning may be dramatically changing, the voice of those affected most . . . must be heard (Li, 2007, p. 377)

Teacher Training

Most educators will agree that as with most new initiatives, “the implementation of technology requires changes, is cumbersome and cannot be forced from the top” (Yang & Huang, 2007, p. 1086). However, Tapscott (2009) believes teachers and other educators need to take note of the changing times and prepare to make changes in their instructional methods to meet the needs of their students. He continues to say, “The current model of pedagogy is teacher focused, one-way, one size fits all. It isolates the students in the learning process. Net Geners learn more by collaborating—both with their teacher and with others” (Tapscott, 2009, p. 91). Tapscott believes students will respond to new models of teaching and learning, many of which are beginning to surface today.

Preparing teachers to utilize the technology they are expected to use is an essential step toward successful implementation of technology. Furthermore, when

teachers feel comfortable with technology, or they feel the technology will help them perform their jobs more effectively, they are more likely to integrate the technology. To support this assertion, Ma, Andersson, and Streith (2005) said, “Teachers need the necessary knowledge and competence in order to use computer technology effectively (p. 7).

Thompson (2005) recommends through her research that there is a need to focus on more “scientifically-based research” on the effects of technology in teacher education. Her findings highlight six key components:

1. Robust theoretical frameworks and models
2. Clear and important questions
3. Clearly defined rigorous methods
4. Well designed instruments validated purposes
5. Possibility for replication
6. Relevant predictions and careful generalizations

Thompson’s (2005) study suggests that in order to expect teachers to begin “integrating technology,” there is a need to “contribute to knowledge of the effects of teacher preparation programs on teacher performance and student achievement” (p. 337). Other literature suggests that teachers realize three major obstacles to the successful integration of technology: (a) material conditions (including too few computers and insufficient technology experience amongst the teachers), (b) difficulty integrating technology into the regular curriculum, and (c) lack of supervisory and technical staff (Li, 2007). The researchers in the Li (2007) study felt there were ample numbers of computers available in all the schools, but they were not being used by the teachers.

Problems with the Technology

Peck, Cuban, and Kirkpatrick (2002) also describe two other barriers keeping teachers from fully committing to technology infusion, which were time constraints and defects in the technology. They noted that teachers were already being burdened by large student loads, lesson planning, and their reliance on teaching methods that have worked for them in the past as a few of the reasons for not infusing technology. If this was not enough, crashing servers and technical malfunctions have hampered lessons enough to make them stick to a more familiar routine (Peck et al., 2002).

Administrative Support

School administrators are also responsible for setting the tone and assisting with closing the gap which generally exists between teachers and students in their schools. Administrators' understanding of technology-related issues may affect school policies. These policies can in turn influence the integration of technology in schools that will help change the culture and environment. Another barrier referred to lack of administrative support when implementing a technology program, so, as Yang and Huang (2007) stated, "Collateral support from administration or other teachers, and access to a network of users to support and sustain effective computer learning" is essential (p. 1100). On the other hand, some teachers feel it is their responsibility to integrate technology into their lessons. Coppola (2004) refers to technology integration as an "elusive process" (p. 118). She believes teachers should be learning to utilize technology effectively while they are also learning to refine their curriculum and teaching practices. This would enable teachers to see that technology and curriculum do not need to be separate entities.

One other interesting piece of information taken from this article addressed one of the barriers I noted for teachers. Li's (2007) research noted, "no student reported that they preferred to learn science exclusively through the use of computers . . . in other words, students viewed technology as an enhancement to the learning process rather than a substitute for it" (p. 380). This is important to note, because through interviews I have performed and through my readings, teachers feel their role will be limited, if not unnecessary, in the education of their students because computers will do the majority of the work.

Support from Higher Education Programs

One issue that may need to be addressed if there is to ever be a successful integration of technology into our schools lies in the hands of schools of higher education. Teachers who are graduating from our colleges and universities in this era have grown up with technology, yet it appears they are uncomfortable using in their classrooms. Lessen and Sorensen (2006) wrote an article supporting the notion that schools and departments of education have a duty to prepare teachers for the classroom. In order for this to happen, they cited four areas that must be addressed: (a) Setting priorities—the importance of leadership, (b) infrastructure—the importance of the environment, (c) development—the importance of building a resource base, and (d) training and support—the importance of supporting people (Lessen & Sorensen, 2006). It is their belief that Deans of Education must lead the way so their faculty members see the need to prepare teachers to utilize technology in their profession.

Gender, Racial, and Socio-Economic Gap

The question that begs to be answered is “How does the equity to access to emerging media technology for certain students impact the education of all students for the twenty-first century?” While this is not one of the main questions I intend to answer in this study, it was important for me to consider because we are in an era where the internet has become an important source of communication and information. Those who are unable to access the internet could fall victim to the “digital divide,” which could place a large portion of the U. S. population at risk of falling behind socially, economically, and educationally (Mullen, Kealy, & Sullivan, 2004). Student achievement has been linked to student usage of technology as well. Mullen et al. (2004) stated:

Poorer school districts continue to lag due to reduced access to technology. As technologies grow in sophistication, so too do the requirements of children and families to stay on top. The growing emphasis and excitement about the use of laptops and wired campuses can only exacerbate the digital divide. (p. 356)

Tapscott (2009) also believes the digital divide gaps are very pronounced and getting worse. While he notes we are in the early days of a growing “global generation” (p. 27), he asserts that technologies are not distributed equally or equitably. Some of these divides are due to economics, but Tapscott also believes there is a social divide that is emerging as well.

Opportunities and Challenges for Educators

Teachers face many opportunities and challenges in their professional lives as they work to become masters of their content so they can help improve student achievement. While there are teachers who welcome the challenge of integrating

technology into their lessons, there are also teachers who are anxious about accepting the idea that this change is going to be helpful. The review of literature exposes both the opportunities and challenges educators face as they live in the world of traditional educational methods and the rush of the twenty-first century technological train.

Teacher Preparation Opportunities

As with any new program or initiative, one must possess the necessary resources and have examples of success against which to benchmark. The review of literature suggests that while the implementation of technology can be a formidable task, there are examples of success from which to learn. The last few decades have shown an increase in the desire to find ways to help schools integrate technology into the classroom.

The U.S. Department of Education (U.S. DOE) started a project entitled Preparing Tomorrow's Teachers to Use Technology (PT³) in 1998 that was designed to find a way to get schools to infuse technology into classrooms. The DOE awarded grants to support programs which transformed teaching and learning through (a) faculty development, (b) course restructuring, (c) certification policy changes, (d) on-line preparation, (e) enriched-Networked-Virtual, (f) video case studies, (g) electronic portfolios, (h) mentoring triads, and (i) embedded assessments (Thompson, 2005).

The National Center for Education Statistics, with the support of the U.S. Department of Education, released a report in November of 2002 that focused on technology in schools. The primary goal of this report was to provide "a wide range of options and suggestions for technology administrators to adapt assessment to their school's situation and needs" (U.S. DOE, 2002, p. xvi). The report focused on seven key

areas which were: (a) technology planning and policies, (b) finance, (c) equipment and infrastructure, (d) maintenance and support, (e) technology applications (software and systems), (f) professional development and training, and (g) technology integration. All seven of these key areas have been noted as barriers to the successful implementation of technology integration, as I noted earlier in this review of existing literature. The basic structure and premise of this report is to provide schools and school systems with a tool that will help them assess their readiness to adopt a technology integration plan.

Administrator and Teacher Needs

When a school has found it is ready and able to start a program, there are still questions as to how administrators and teachers prepare themselves for the technological world that has been in existence. Richardson (2006) wrote a resource book for teachers to use which will help familiarize them with the new technological terms that students frequently use as they socialize and do work on the Internet. He asserts the book is about how the Web has allowed people to create connections, collaborations, and conversations online. The language used to describe activities on the Web, like blogs, wikis, and Podcasts, is less important than the educators behind them who are trying to creatively motivate students to learn more deeply and contribute what they know about the body of knowledge that is the World Wide Web (Richardson, 2006).

It is also important to note that Richardson found a way to simplify very technical terms and tools in a way that allows teachers to feel comfortable enough to experiment with his suggestions. For example, Richardson (2006) documents a web page a math teacher by the name of James Tubbs uses to create writing prompts and examples of

mathematical concepts. Through the use of technology, this math teacher is integrating writing prompts the students are answering in social groups.

Student Motivation/Engagement

One basic premise which exists in the literature spoke to the impact technology has on student motivation. There are examples from several readings that display how student motivation can be influenced through the use of technology. Li (2007) refers to a study done with five middle school science teachers who used the Web as a part of their instruction. Li (2007) notes the teachers perceived that using Web resources made students' learning more dynamic and active, which also motivated them to be more active in the learning process. The most important piece of information to note about Li's study is that the new environment in these classrooms forced the teachers to change their role from the knowledge dispenser to knowledge facilitator.

Prensky (2005) sees the issue of student engagement as an issue many teachers are not prepared to tackle because they do not fully understand what is really happening. He states there are three groups of students: the self-motivated, those just going through the motions, and those who have "tuned us out" (p. 60). The group providing teachers with the most challenge is the "tuned us out" group, because very few educators have found a successful way to bring these students back on board. Prensky admits these three groups of students have always existed, but the "tuned out" students have become more challenging because of the increase in technology that engages them outside the classroom.

Today's students are exposed to high quality video games, MP3 players, online social networks, and many more devices that were not in existence for much of the last century. Prensky feels the "tuned out" students have become enraged and frustrated by an educational system that has been unable to find meaningful ways to acknowledge their need for this type of technology by finding ways to work it into the curriculum and classroom. In fact, students often see schools as places where those devices are confiscated and banned. Prensky (2005) also feels that relevance is not what is lacking for this generation, its engagement. If Prensky is correct, the question for us is, "What needs to happen to better equip teachers with the tools they will need to be prepared for the 'tuned out' students?"

Levin and Arafeh (2002) studied how students perceive the purpose of the Internet as it pertains to school. Many of the students view the Internet in five categories: (a) as a virtual textbook and reference library, (b) as a virtual tutor and study shortcut, (c) as a virtual study group, (d) as a virtual guidance counselor, and (e) as a virtual locker, backpack, and notebook.

Students see the Internet as the reference library of choice because the school and local library have limited resources, while the Internet has an unlimited amount of information from which to choose. They have become proficient users of the cut-and-paste method as they pull pictures, charts, and even movie clips into their reports and projects. Most importantly, they don't even need to leave their homes to perform these tasks. However, there are frustrations because students often encounter sites that don't guarantee trustworthiness or require payment to enter.

Students in this study also reported that the Internet allows them to pursue areas of interest in more depth than they receive in class. Students often meet in online chat rooms and ask questions and debate over correct answers to questions. The downside to this activity is that most students reported they see this practice as a shortcut for getting assignments done quickly. Many middle school and high school students are now taking advantage of the Internet by creating online study groups. I have witnessed students in coffee shops with their laptops as they prepare for exams, presentations, or even to simply finish homework together. Students who are required to work on projects together find that it can be difficult to get together, but if both have access to the web, they are able to meet virtually any time they want. The students of today's generation are also involved in many activities such as sports, work, clubs, or other extracurricular opportunities. Virtual study groups allow them to manage their time more efficiently by allowing them to schedule online meetings after they settle in at night.

The final comparison that students liken the Internet to is that of a virtual locker. Students have become proficient using email and bookmarks to help them manage homework, syllabi, and other important school documents. They are keeping up with their grades, attendance, and class schedules online as well.

Successful Technology Integration

An interesting idea I discovered involved the use of electronic portfolios as a way to successfully integrate technology into educational programming, which would help demonstrate student growth in achievement. Stansberry and Kymes (2007) performed a study on how electronic portfolios can foster teacher beliefs. The results of their study

showed teacher collaboration increased and students felt they were “part of a community of learners who are working on the same problems and speak a common language” (p. 494). The most important outcome of this study was that teachers found a way to infuse technology into their classrooms that did not infringe upon the curriculum and allowed them to collaborate with their fellow teachers and dialogue with their students while electronically keeping track of progress. All of these outcomes address the barriers that teachers have expressed as concerns when thinking about integrating technology into their lessons.

Technology is also finding a new role in schools working with struggling students who may need individualized attention. There are advantages and disadvantages to this approach, so I believe it is important to mention both in the literature. Sarrafzadeh, Alexander, Dadgostar, Fan, and Bigdeli (2008) note that intelligent tutorial systems offer many advantages over traditional classroom scenarios because “they are always available, non-judgmental, and provide tailored feedback” (p. 1343). The researchers also stated the teacher shortage exists in many of our rural and urban schools; intelligent tutorial systems can help fill the needs these schools have to provide students with individualized attention modeling the knowledge state of the student, as well as their cognitive and emotional state.

One of the most important measures we can examine when measuring the success of any initiative is its impact on student achievement. In order to determine if technology has had a positive impact on the education of students, one must look at the data. Foltos (2002) reported that organizations like Edutopia and the Center for Applied Research in

Educational Technology are starting to find research that is beginning to link technology use to increased student achievement.

Blanding (2009) believes educators have failed to see the value in social networking sites as an extension of the classroom. It is his assertion that students are doing it without their teachers, regardless of their teachers' inability to understand how important it has become to them. Christine Greenhow, a postdoctoral associate at the University of Minnesota, commented: "The question is, can we harness this interest and passion in their online lives for educational purposes?" (Blanding, 2009, p. 30).

Unsuccessful Technology Integration

The counter-argument to the study done by Sarrafzadeh and colleagues (2008) was noted in a study done by Lehman, Douglas, White, Horn, and Bruning (2001). This research group pointed to two specific concerns that surfaced during their study using technology to foster the education of "at-risk" students. First, at-risk students became disengaged from their work because of the lack of attention they received from the online instructor and the on-site facilitator. The second was the pressure that the online teachers felt as they attempted to interact with multiple students in the online environment. In fact, many of the teachers felt that the only contact they had with the students came when they exchanged assignments and grades. The final impression of the research group was that "at-risk students, in particular, needed more substantive interaction with the online teacher" (Lehman et al., 2001, p. 2).

There are limited data measuring the effectiveness of technology integration, but Johnson (2000) conducted a study that yielded four ways computers can be used to

improve student achievement: (a) learning facts and skills through drill and practice instruction, (b) providing additional remediation or enrichment through tutorial lessons, (c) developing concepts, generalizations, and thinking skills through the use of simulations, and (d) using the factual information in databases to develop concepts and generalizations to promote thinking skills (Johnson, 2000). Mason et al. (2000) also created five steps to follow for the successful implementation of technology into classroom instruction.

In order for technology to be implemented successfully, schools must (a) extend learning beyond what could be done without technology; (b) introduce technology in context of what is being taught; (c) include opportunities for students to study the relationships between science, technology, and society; (d) foster the development of the skill, knowledge and participation as good citizens in a democratic society; and (e) contribute to the research and evaluation of the subject matter and technology (Mason et al., 2000).

Cuban (2001) has spent years researching the impact emerging media technology has had on student achievement in schools. He writes:

what should be clear to impartial observers of new technology in American schools is that after twenty years of heavy promotion, serious investment of funds, and unswerving support from disparate coalition of parents, corporate executives, public officials, and educators, computers are ubiquitous in schools. (Cuban, 2001, p. 182)

Summary

One significant issue that seemed to weave throughout each of the reviewed literature selections was the vast opportunity technology can bring to the table for public school teachers and students. However, there is much work to be done to align the resources needed to help teachers find new ways of integrating technology in a manner that supports teaching and learning. Without this alignment, teachers seem to use technology to simply enhance their current teaching practices. Ann Davis (2009) did extensive research to identify the basic leadership skills and teacher training required to help schools successfully implement technology to meet the needs of the twenty-first century learner (Davis, 2009). In Chapter III, I have introduced Newlands High School and the students and staff members who participated in our research project. I have also discussed how the research was conducted during each phase of the study.

CHAPTER III

RESEARCH METHODS

Introduction

During my time as a principal, I had several opportunities to deal with discipline issues stemming from teachers who confiscated cell phones and MP3 players from students who had them out in the hall or in the classroom. I am interested in learning more about what teachers feel they need in order to be more prepared for better utilizing the technology tools they have in their classrooms and schools. As I mentioned in Chapter II, in order to expect teachers to begin “integrating technology,” there is a need to “contribute to knowledge of the effects of teacher preparation programs on teacher performance and student achievement” (Thompson, 2005, p. 337).

Research Questions

This study is guided by the following questions:

1. What influence are emerging media technologies having on secondary teachers and their classroom instruction and professional preparation?
2. What challenges do high school teachers face with regard to integrating instructional technology into school curricula while they also enforce school policies managing the use of Personal Media Devices (PMDs)?
3. What are the implications to consider with regard to educational technology reform efforts?

Staff members are faced with enforcing school policies regarding PMDs belonging to the students. The second research question is important to answer because, at this point, it seems most staff members are unsure how to do this, while also trying to find new ways to integrate technology into their instructional practices. Answering questions one and two would greatly enhance my ability to answer the third question. It is my intention to make recommendations about preparing teachers for the conflict they will face as they enter the teaching profession.

Research Design

The investigation from which this study is drawn took place in a school district in the Southeastern region of the United States. The school involved was given the fictitious name of Newlands High School. An IRB application was submitted and approved to conduct this research. All data collected and recorded interviews are being maintained as written in the IRB application.

The design of this study is qualitative in nature and involved an in-depth case study of Newlands High School. Creswell (2007) defines a case study as “research involving the study of an issue explored through one or more cases within a bounded system” (p. 73). As mentioned in earlier, I was part of a research team that was seeking to shed light on the influence emerging media technologies have had on high schools. While the larger study looked at how emerging media technologies have influenced the school experience for both students and staff members at two different schools, my focus for this paper was Newlands High School staff members. This focus came from the fact that most of my work for the larger project was with the staff members at Newlands.

There were four key methods used to collect data from the schools in the larger study: (a) teacher interviews, (b) classroom observations, (c) student interviews, and (d) shadowing of students. My research explored the teachers' interviews and classroom observations, but I have used some of the student shadowing data to support my findings in Chapters IV and V.

Research Phases

During the first phase of the study, the interview team and I interviewed eight classroom teachers and one other certified staff member along with eight students at Newlands High. When I share my findings in Chapter IV, I was careful to identify when I used quotes from the certified staff member. While this study focuses primarily on teachers, this certified staff member had some interesting insights which helped to inform our findings. Protocols were developed for the each of the different interviews (see Appendixes A and B).

The participants for this study were selected because they had expressed an interest in speaking about the influence emerging media technology has had in their schools. The teacher interviews took place in their classrooms or in the office of the certified faculty member before and after school or during their planning periods. The student interviews took place in the media center or in an area convenient for the student being interviewed before, during, and after school. Each of the interviews was approximately one hour in length and was recorded on a digital recorder so we could create a transcription at a later date.

Phase two occurred once we had the opportunity to review the transcripts. I returned to the school and met with the teachers to ask if they had anything they wished to share and to also find out if anything had changed since the initial interview. None of the participants had anything they wanted to add, but the teachers at Newlands High did mention there had been a change in the electronic device policy, which was prompted by the new administration.

After I checked in with the participants, I selected three teachers and asked if I could come observe them in their classrooms. I was intentional with my selection because I had sorted the entire group of teachers into three categories based on their responses to how comfortable they felt using technology: (a) the digital native, (b) the dedicated user, and (c) the conflicted user. During this phase, the research team also conducted the student shadowing exercise. This gave us an opportunity to see if the teachers were giving the students the opportunity to utilize educational technology. It also gave us the opportunity to see how the students were using the PMDs during and between each of their classes.

Research Setting

Newlands High School

Newlands High is found in a rural setting and is now in its third year of operation in a new, state-of-the-art facility. The school was designed to be technology-ready. Each of the classrooms is equipped with a voice amplifier system, which allows the teacher to strap a mechanism around his/her throat to send their voice through a set of speakers.

Newlands High opened its doors with a policy allowing students to utilize their own

personal emerging media devices (i.e. MP3 players, cell phones, digital cameras, etc.) as long as there is no interference with instruction. This usually means that students can use these devices before and after school, during class changes, and during lunch, but there are times when individual teachers will allow students to use the personal devices in their classrooms. This set the school apart from every other school in the district because there is an electronic devices policy found in the district student handbook. There is more information about this in Chapter IV of this study because teachers at Newlands High referenced this policy during their interviews.

Newlands High is considered to be a “traditional” high school, meaning a standard state-approved curriculum is offered to the students in six, 55-minute periods. The building design is one of the first to incorporate “green” elements in its structure.

The School District

Newlands High and Downtown High belong to a large school district in the southeastern portion of the United States. This school district serves over 71,000 students and employs more than 10,000 full- and part-time staff members. There are 68 elementary schools serving grades pre-K through fifth grade. There are also 21 middle schools (grades six through eight), and 25 high schools (grades nine through 12).

Research Participants

As was noted earlier, there were nine certified faculty members and eight students involved in this study. Each participant was interviewed using the same interview protocol, which took about an hour in length (see Appendices A and B). Their individual stories speak to both the positive and the negative perceptions they have about emerging

media technologies in their high schools. The school has been given a fictitious name and the location has been masked. I have kept participant identities from this study strictly confidential unless disclosure is required by law.

The following tables provide background information on each of the participants. This information is intended to provide the reader with some insight into the different experiences and perspectives each participant brings to the study (see Table 1 and Table 2).

Table 1

Newlands High School Staff Members' (NST-Newlands Staff) Subject(s) Taught, Number of Years in Education, and Number of Years at Newlands

Name	Subject Taught	Number of Years in Education	Number of Years at Newlands
NST1	Science (AP Environmental)	2	2
NST2	Computer Engineering	5	1
NST3	French, Latin	15	2
NST4	Math	14	2
NST5	Social Studies	1	1
NST6	English	24	2
NST7	English	1	1
NST8	Licensed Staff Member	22	2
NST9	Math	21	2

Table 2***Grade Level of Newlands High Student Participants***

Name	Grade Level
NStudent 1	10 th grade
NStudent 2	11 th grade
NStudent 3	9 th grade
NStudent 4	10 th grade
NStudent 5	11 th grade
NStudent 6	10 th grade
NStudent 7	11 th grade
NStudent 8	10 th grade

Research Data Collection

The research team used four methods to collect the empirical information for this study: (a) teacher interviews, (b) classroom observations, (c) student interviews, and (d) shadowing of students. Notes were taken during the interviews, and all interviews were recorded on a digital recorder and later transcribed. A classroom observation protocol was used to record student and teacher behaviors during the classroom observations (see Appendix C).

The last two data collection approaches that occurred were observing the teachers in their classrooms as they were teaching and shadowing students throughout their normal daily schedules. The research team looked to see if and when teachers used technology in the classroom and how the usage related to what was said in the original interview. Using the observation protocol, we kept track of the time, location, and level

of usage that occurred if, and when, the teacher being observed used some form of technology (this could include calculators, cell phones, MP3 players, etc.).

We also noted whether students were using personal devices such as cell phones for texting, while the teacher was instructing the class or the students were involved in some instructional activity. After all data were collected we then coded the transcripts and protocols and organized and discussed emerging themes. As Glesne (2006) states, this is an important step in preparing your data and for reporting it . . . Coding can help you to develop a more specific focus or more relevant questions” (Glesne, 2006, p. 150). We also looked for comparisons/contrasts between what was said in the individual interviews and what we saw during the observations and shadowing opportunities.

Data Analysis

Analyzing data was an ongoing process during the data collection process and the review. During the observations we used a tracking protocol that enabled us to record where the students were during the observation and what they were doing during the instructional presentation.

Researcher Subjectivities

Subjectivity is an inevitable fact for us as human beings as we look to study and better understand situations. It is my responsibility as researcher to pay close attention to the subjectivity that I bring to this study. My position as an educational administrator working with teachers may impact the types of responses I receive during interviews if I am not careful to be up front with the teacher participants about the purpose of this study. It is also important to note that I am in a position of authority in this school district. It is

my professional responsibility to evaluate principals and work with them to do what is necessary to improve student achievement. I have been careful to choose a school I do not supervise to diminish the amount of subjectivity and positionality I might bring into the building as I conduct this study.

I would also like to acknowledge that I am a strong proponent of infusing technology into school curriculum in a meaningful way that supports student achievement. It is my assumption that emerging technologies have captured the attention of today's young people and has motivated them to learn as much about these technologies as they possibly can. It is also my belief that if we found a way to infuse that in our classrooms, we would see higher levels of student engagement, which would increase student achievement.

The last subjectivity that I would like to mention that I believe could impact my interpretation of the data if it goes unchecked is the belief that policies and educators have intentionally and unintentionally created barriers impeding the successful implementation of technology in the schools. I believe there are several reasons why teachers are reluctant to include technology in the classroom. The first reason is because many teachers are concerned that their students know more about technology than they do, which could be embarrassing should it become apparent during a lesson.

The second reason is that the adults are not willing to give up class time to infuse technology in lessons because of the demands placed on them due to high stakes standardized tests. Teachers are not willing to sacrifice time experimenting with technology because they will lose time that could have been used preparing students for

the End of Course (EOC) exams. The state in which Newlands High is located has implemented a testing program that measures the proficiency of certain high school courses through EOC exams. Students not only need to pass the course, they must also score a set proficiency score to meet state exit standards. The pressure created by this system is often strong enough to force teachers to dominate class time with lecture-based activities, as they feel the need to ensure themselves their students have been exposed to the curriculum.

The final reason that might explain why adults are reluctant to use technology in the classroom is that they do not trust the students to do the right thing with either the school or their personal technology. For example, teachers may fear pictures and/or videos will be circulated if they lose their temper due to an unruly class, or teachers may think that students will text message answers to test questions to other students in the classroom. I am not saying these are not valid concerns, but they are certainly not situations that cannot be controlled or dealt with, and should not be what keeps students from capitalizing on technological advancements.

Trustworthiness

It was important for me to address trustworthiness throughout the process of this study. We worked with teachers in their settings as much as possible. We conducted all interviews and observations in their own classrooms. This was essential as we looked to get as much honest feedback from them as possible.

We collected multiple forms of data, such as interview transcripts, field notes, and journals, so we made every effort to triangulate the data in order to once again focus on

accuracy of the interpretations we made from the information that was gathered. All transcripts, recordings, field notes, and journals were kept in the location approved on the IRB application and can be made available if necessary.

Summary

This case study examines how the educational practices of nine high school staff members have been influenced by the wave of emerging media technologies of the twenty-first century, which include the school-provided technologies as well as the personal media devices (PMDs) owned by themselves and the students. The research provided a picture of the challenges and the promise these media devices bring to schools each day. Chapter IV provides a real perspective of how actual teachers at Newlands High have been influenced by emerging media devices.

CHAPTER IV

DESCRIPTION OF STUDY SITE AND FINDINGS

Introduction

As mentioned in Chapter III, there were three research questions that guided this study. The first question focuses on identifying the influences emerging media technologies are having on secondary teachers' classroom instruction and professional preparation. I then exposed the challenges high school teachers face in regard to integrating emerging media technology into school curricula while they also attempt to enforce school policies meant to manage the use of PMDs. The last area focused on was the implications that we as educators need to consider with regard to educational technology reform efforts.

There are five sections in this chapter which are meant to help organize the information for the reader. In the first section, I spent some time describing Newlands High School because it is important for the reader to have a mental picture of the environment the students and teachers are part of each day.

The second section begins the study of the research findings, starting with the staff interviews. Each of the teacher participants was asked a series of 16 questions stemming from an interview protocol created by the research team (see Appendix A). I have shared sample quotes from each of the teachers for each of the questions in order to create themes that are further explored in Chapter V. The questions from the interview

focused on both the teachers' personal and professional comfort and use of emerging media technology.

In the next section I shared the findings from the student interviews we conducted using an interview protocol similar to the one used for the teachers. While there were several questions asked during the interview, I focused only on the two that were related specifically to teacher practices at the school. Since the focus of my study is to examine the influence emerging media technology is having on high school teachers, it is helpful to consider the perspective of the students. Questions two and three from the second section of the student interview protocol (see Appendix B) ask the students to comment on how the teachers use technology in the classroom. Their feedback can be compared to how the teachers feel technology is integrated in their lessons.

The fourth section pulls information collected from classroom observations and student shadowing exercises. The classroom observations were conducted to see what types technology, if any, are being used in the classroom. Technology use could vary from a student texting on a cell phone during instruction to the teacher using Promethean Boards with the students. During the student shadowing phase, research team members followed student participants throughout their daily schedule. Team members made note of when the students used either PMDs or school technology. In both cases, a recording document was used to capture the information (see Appendix C). Like the student survey data, this information can be compared to teacher responses during the survey, which help to draw conclusions and help to answer the research questions.

The last section includes three in-depth teacher interviews designed to allow the reader to observe the types of responses provided by teachers from various ranges of technological backgrounds. These three stories are shared in further detail in Chapter V because they are a part of the themes that emerged from our data, and help inform some of the recommendations I have for addressing the challenge emerging media technology has brought to high school teachers. All of the information presented in this chapter has set the stage for the various themes that were analyzed and interpreted in the final chapter.

Site Description: Newlands High School

Newlands High was opened for students in 2006 in a rural portion of a fairly large and growing urban school system in the southeastern part of the United States. The school opened in January 2008, welcoming a cohort of over 450 ninth- and tenth-grade students who had started the year housed in other district high schools as Newlands was under construction. The grade level phase-in continued during the 2008-2009 school year as a new ninth-grade class joined new and returning students in the tenth and eleventh grades, which raised the total population to approximately 800. Student demographics that year were reported as 71% White and 29% students of color, who were predominantly African-American. In the current 2009-2010 school year, the school has added a 12th grade and grown to a student population of over 1,150.

The building has universal wireless Internet access, and the teachers have access to laptop computers and desktop computers, if needed. Though students do not have one-to-one access to laptop computers, Newlands High has over 50 computers deployed in the

media center, and classrooms intended for technology-related elective courses have desktop units available for all students. Teachers submit attendance and grades online, and most administrator messages to staff are distributed electronically via email.

During the initial planning phase of Newlands, the administration was intentional about establishing the student code of conduct. A controversial decision was made to allow students the opportunity to utilize personal media devices (PMDs) at various times during the school day, which became known as the “appropriate-use policy.” The county district student code of conduct has a specific policy banning the use of electronic devices during the school day.

The Newlands High administration worked with teachers and parents to establish this policy because of a variety of issues, but mainly to address one major concern. Students were going to continue to bring technological change and challenge to school on a daily basis because, according to students and staff alike, PMDs such as MP3 players, cell phones, and mobile Internet devices are common possessions of the Newlands High student body. Therefore, instead of focusing on the disruptive nature PMDs can play in a school as teachers continually remind students to put the devices away, or by confiscating them, the staff would focus their efforts on improving the academic programs. Under the policy, students can use their devices between classes and during lunch. Individual teachers have discretion over whether students can use PMDs in their classrooms and, if so, under what circumstances. It is common to see students in classrooms listening to headphones after they complete individual work or wait for classmates to finish a test.

Description of Findings

The next three sections of this study give the reader an opportunity to see the data we collected from the participants at Newlands High School. Data were collected in four ways: (a) teacher interviews, (b) classroom observations, (c) students interviews, and (d) shadowing of students. Themes surfaced when we began to describe the findings of our research, but I only intend to present the data in this chapter in order to set the stage for analysis in Chapter V. At that time, I interpreted the data in order to identify general trends implications.

Teacher Interviews

The teacher participants were asked a series of 16 questions about their personal and professional use of emerging media technology. The research team used an interview protocol (see Appendix A) to help guide the discussions. There were opportunities to ask follow-up questions not found on the protocol based on the responses given. However, each of the participants was asked all 16 questions throughout the course of the interview. I am going to share data points and individual quotes from the interviews to help the reader better understand what the teachers had to say with regard to emerging media technology and the influence such devices have played with regard to their teaching practices.

What is their personal comfort with technology?

The first question asked the teachers to share their personal comfort level with emerging media technology. Most of the staff members said they were either comfortable or very comfortable, while none of the nine expressed feeling uncomfortable. The other

staff members were neutral—neither comfortable nor uncomfortable. Each of the teachers was asked to go into more detail and provide examples as to why they responded the way they did. One of the participants who responded ‘very comfortable’ said,

The only reason I don’t want to die is that I’ll miss out on the new technology. I can sum it up. I’ve dealt with computers and new technology since I was 8 years old. I built my first computer then and, ever since then, I’ve been inundated with any technology I can get my hands on.

One of the teachers who responded ‘neither comfortable nor uncomfortable’ said,

Well, it just depends on the technology and how much practice I’ve had with it. I’ll say I feel pretty comfortable with my computer, with Microsoft Word and things like that. But when I go beyond that, then my level of training varies considerably and, if I’ve had time to practice with it and learn the ropes, then I feel OK with it. Otherwise, not so much.

How long has Staff been using technology?

The second question asked the teachers to think about how long they had been using technology like the Internet and cell phones. Most of the teachers had been using both for quite some time but in varying degrees. For example, one teacher said that computer use took a while to become a habit. She explained by saying, “At first it was sort of a luxury and I used it for email primarily. But now I’ve gotten used to it and the more popular the Internet has become, you can’t live without it.” Another teacher said, “Since 1991 when IRC was a big deal. Way before you had www. All the hacker nets you call them. The F net, and US net. So I was hanging out in those and that was where I was learning the darker side of eh net because these were where the elite hung out.”

Most of the teachers reported their first experience with technology came through the use of email. One of the teachers said:

I guess, gosh, um, I guess maybe my first experience was probably with email. Um, before, before kind of going to the internet it was with email. And that was probably 8 or 9 years ago, 10 something like that. And I remember thinking it was cumbersome and I didn't know why people really wanted to use it. But then it got easier I guess.

Do they have any positive or negative experiences with personal technology?

The next two questions asked the teacher to reflect on any positive or negative experiences they could remember with regard to the personal use of emerging media technology. Most of the teachers had something to say about how easy it was to communicate to family and friends through the use of their cell phones and email. One teacher in particular became excited about the portable document camera device used in his classroom, saying:

I love that [portable document camera]. That thing is great. 'Cause, with the overheads, you know, you had to write on the clear paper and all that. You have a book and you just open up and "Hey, we're going to read a Blessing today." A poem the Blessing. And you have it right here. If the kids don't have their books, it's up on the screen. Now they're supposed to have their books, but if they don't, you don't have to worry about it. And if you need to write on it real quick, or it's already written on. It can be something you've already typed up. And that's great. And also the fact that I can just pull something up from my computer. Something I've already typed up. I can, and again, I can put it right up there. It just feeds in. And I love that. So that's been wonderful. And this (InterWrite) would be wonderful if I just had time to play with it. I mean, I really think this is the way to go if I just had time to play with it. I just haven't had time yet.

Reflecting on the negative experiences the teachers had encountered, several of them expressed concerns about the trouble caused by technical difficulties. Teachers

spoke of not being able to access certain online sites like YouTube and Facebook, while others were frustrated when digital projectors and document cameras failed to work properly. One of the participants referred to tools used at his school by saying:

Well, those disks that they used to give us, those floppy disks, they were always crashing. So eventually I caught on and would have two or three different backups. But when you save it on a disk, it would always crash. And if your computer crashed, you know, you were really up the creek. Now we have flash drives, I have a backup on the flash drive; I have a backup on the hard drive. And so that would be really, really frustrating because I spent all this time punching the information in and then I'd save it and it would disappear. And so, just ignorance on my part when it comes to technology. If I don't like it, the technology, it's usually because I don't feel comfortable with it. And technology is great until you don't know how to do something or something goes wrong. And, you know, if my computer goes down, I'm out of luck. There's nothing that I can do. And it's amazing. I've been in school...I started teaching when there were no computers and then (at another school) every teacher in my building shared one computer in one little office, and then we all got our own computers. So I've gone through the, you know, I've gone through it all. And I much prefer having my own computer. I love having a computer. In terms of negatives, I haven't experienced – because as I said, I don't go to YouTube that often or things like that. But I know that sometimes there's good things that you'd like to show your kids, but because of the filters. . . . and I certainly understand why we have filters. But sometimes the filters keep you from using something that would be really valuable in class. But that's not a personal experience. That's just what I've heard other teachers talk about.

One teacher was concerned about how easy it was for anyone to access her personal information. She said, “You know, I can go online and probably find anybody's Facebook page and I can get their cell phone number and then I've got their address and I can contact them. That makes me nervous. I don't like that I'm so accessible, I guess.”

Some of the negative experiences the teachers reported seemed to impact them in the classroom. One teacher mentioned the frustration of the technical difficulties caused by technology. She said, “I think, just when it doesn't work the way I want it to. I think

more technical difficulties—user error.” Another said this about going to the computer lab:

When you're in the computer lab with the kids, you really have to watch what they're doing. 'Cause they can be on to something else in a heartbeat. And they're quick about minimizing it, making it go away. And I've learned now that you can block the internet when we go to the computer lab. So we will be blocking the Internet when we go, we do that.

One other teacher had this to say about the Internet:

But I have a 16 year old boy. And, yes, I'll say it. He was looking at some porn sites and I had to filter that and block it and everything else and had to take it and put it in a public place that—if you go on, everyone's going to see—and also learn how to check the history so that I know exactly where he's going so in modifying that. More so in MySpace. When I think of negatives with the personal life, I think of it in terms of raising my children.

When speaking of the Internet, some of the teachers felt the need for a separation between what they and the students have access to. For example, this teacher said:

I wish there were, I wish that it was like that, that teachers had access to certain websites because some certain websites I'm looking for, it's blocked and I have no reason why. And um, but I completely understand why students shouldn't have access to it, um, on campus. But at the same time, students have already found ways, using the proxies and everything like that, to get around it.

Some of the teachers commented on how the students use their cell phones during class time. One said, “Cell phones in the class. I mean you kind of fight that battle. I mean, even today after the kid . . . The kid had finished her exam, but she had gotten her cell phone and was using it, so I had to take it from her.” Another teacher said:

Every day, every single day I have to ask someone to put their cell phone away. Every day. And I feel like I am a pretty good disciplinarian. I run a tight ship in my classroom, but every day I have to fight the battle with the cell phone. Someone will have it out texting or doing something, and you have to get into the ‘I’m going to take it and not give it back to you until the end of the day’ type of thing. And in the hallway, they will walk up and down the hallway talking on the darn things.

One participant said this about cell phones:

But I definitely know, I mean I walk into another teacher’s class—another teacher and I have connecting rooms—so when I walk into her room it’s from the back. And she can’t see the people in the very back. And I’ve caught a couple of kids, when I’ve just come to tell her something, in the back row and I’ll just grab the phone as I’m going by and say “Thanks.”

There was one last comment regarding cell phones and how they seemed to be influencing teacher decision making. The teacher had this to say:

Yeah. I think it’s pretty understood. I think, they get upset. I mean it’s our policy that if you take their cell phone away, then their parent has to come pick it up. And I’ve had students, I only had to do that, actually I’ve never actually turned one into the office. This last time, it was a midterm. They were finished with their midterm and I had their tests, so nothing was, you know, sketchy. I took their phone and instead of turning it into the office which I completely intended to do, I had taped it with masking tape and written their name on it and everything already. They explained that they were going out of town and on a train and their mom wasn’t going to be home and I knew the student and I said, “OK, let’s call your mom right now” and I confirmed the story and I said, “This is just out of the goodness of my heart that I’m not taking it right now and I would really not like to have a repeat of this.

What types of technology are used in personal lives?

Continuing with the interview, we asked the teachers to share the types of technology they use in their personal lives. Several of the teachers referred to the devices

they use at their school in their classrooms. For example, one teacher spoke of how a microphone system helps him keep students on task in his room. He said,

Well, for this class the microphone has helped in many ways. We use a microphone system; the speaker system goes throughout the course. So I don't have to raise my voice as much. It also, they (some doctor somewhere) proved that it helps with male students to have that loud voice and it's all around them. So the speaker system really helps. It's easier for me to get their attention. I already have a naturally loud voice, so when you amplify that, I can get their attention real fast.

Almost all of the teachers spoke of using their computers and their cell phones on a daily basis to take pictures, send text messages, and make phone calls. We then asked each of the participants to speak to us about the types of emerging media devices they had used in the last week, prior to the interview. See Table 3 for a visual representation of how each of the teachers responded.

Technology use in the school

The second section of the teacher interview addressed the use of emerging media devices in their school. While the research team did differentiate between personal and instructional technology, many of the teachers often spoke of both as they discussed how technology was being used by the students and themselves. Our purpose with this section of the interview was to hear what the teachers thought about technology usage.

How often do teachers integrate technology in their classrooms?

The next question asked the teachers to talk about how often they integrate computer technology in their classrooms. Six of the nine teachers said they integrated technology very often, while one said often, another said sometimes, and one said rarely.

Table 3*Personal Electronic Device Usage: Yes or No (NST-Newlands Staff)*

Emerging media Device	NST1	NST2	NST3	NST4	NST5	NST6	NST7	NST8	NST9
Cellular Phone	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Digital Camera	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Mobile Internet Device	No	No	Yes	No	No	No	No	Yes	Yes
MP3 player	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No
Video sites like "YouTube"	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Networking sites like "MySpace"	Yes	Yes	No	No	Yes	No	Yes	Yes	No
Search engines like "Google"	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Email	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Text Message	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes

We asked the teachers to elaborate with regard to how they and the students use the technology during the lessons. One teacher that teaches computer-based courses said:

The students can go as fast as they want. I already have one student who is going to be ready to take the final exam by this semester. Some students perform better at a faster pace. I'm the same way. If it takes too long, I get bored, I start to drop off. The opposite is true. It gives them more time to complete the course at their pace, at their abilities. So I can work as a facilitator to really help students understand and I can do a lot more one on one than most core teachers can. The world is getting smaller because of technology. If students aren't on board with technology, they're going to be left behind. When the conceptual age is the new revolution for the world, they're not going to be able to compete on the world market.

Another teacher explained how technology is included into her lessons by saying:

I would say I show PowerPoints probably twice a week. I guess that's for each class, I'm thinking about. I probably show some sort of video once a week, whether it's a video clip or a full length video. I do review games, so every two weeks probably; I use the computer for a review game. Students use my computer to give presentations. You know, if they create a PowerPoint or if they make a video of their own to show. That's probably more like once a month. I use my Portable document camera to project instead of having a projector. I use my Portable document camera. I probably use that once a week.

As we continued to interview the teachers and ask them how often they use technology in their classroom, we heard about portable document cameras and video projectors, PowerPoint presentations, and InterWrite Boards. A few of the responses we received from teachers prompted us to ask if the teachers would rather have computers in their rooms instead of going to the computer labs. While you may think teachers would say yes to this opportunity because of saved instructional time and other possible advantages, one teacher in particular felt differently. When she was asked about the opportunity to access computers in her classroom, she said:

Well, honestly part of it, for me, it's kind of an event to go to the computer lab and be in a separate setting. I think it's good for kids and I know my mom teaches at a school where they have all their own laptops and she has a lot of issues with them getting distracted by other things on the computers. And personally, I don't learn as well typing notes. I like writing notes and maybe if I typed them out later . . . So just from all of those personal experiences, I would prefer not to. But that's just me.

The thought of going to the computer lab as an "event" was an interesting perspective. I talked more of this comment in Chapter V, because I believe this to be an excellent example of the conflict facing teachers.

How often do other teachers in the building integrate technology?

The next question in section two of the interview asked teachers to think about how often their colleagues integrate computer technology in their classroom instruction. This question could reveal what types of staff development have occurred in the school with regard to instructional technology. It could help us identify collaborative planning intended to integrate technology into lessons. However, it could reveal the fact that instructional technology integration is not a focus for the school and occurs in pockets of the school. I brought this point to light again when student interviews are discussed later in this chapter.

The responses to the question pertaining to how often other teachers in their building integrate technology in their classrooms varied. Four of the nine teachers said their colleagues would sometimes integrate technology, while two said often, two said rarely, and one said very often. With such a wide range of responses, it is important to hear what the individual teachers had to say when they elaborated on this question. One of the teachers felt teachers know how important it is for students to be exposed to technology integration, but realizes some resist the idea. This teacher said the following:

I would want to say that they would want to integrate; I mean that they would want to use it as much as possible. But I've known some teachers who refuse. A simple thing such as using a projector. I've seen some teachers say, I don't know how to use it. I just don't want to. OK. Alright. You'll be left behind, but OK. I think it's important.

This teacher expressed his concern about teachers being left behind because of their unwillingness to learn about the technology. One teacher went as far as asking her

students how often the InterWrite pads were used in other classes. She stated, “from what I hear from just talking to people and talking to the kids, I would say rarely. ‘Cause I’ve asked my kids like, ‘Who else is using the InterWrite Board?’ and they’re like, ‘Only you.’”

There are also teachers who feel there are plenty of resources available with regard to instructional technology, but there has been little training to help teachers feel comfortable using it. She expressed the concern of losing class time and control of the students. Because of these feelings, she says she and her colleagues are not comfortable with the technology. She went on to say:

I feel like we have a lot of tools. Like we have, not the SmartBoard, we have the InterWrite pad. We have a lot of things. We have the Portable document cameras. But the training has been spotty. And a lot of people feel uncomfortable with them. And if you try it and it doesn’t work, it can suck a lot of class time while you try to fix the technology. If you’re not really comfortable with it, you’re afraid it’s not going to work and the kids will be going rampant in the room while you’re trying to play with the technology, so they kind of avoid using it. We’ve had a lot of—we’ve talked about this at leadership team—trying to get better training especially on that InterWrite. And we have like a planning period. This is what it is. Plug it in.

Another teacher spoke of the generational gap she believes exists and may be keeping certain teachers from using technology. She said:

I know that the seasoned teachers, to be nice about it, they’re not as comfortable with technology, you know, so they don’t use it. I know my mentor is all of the time asking me his technology questions and I know he made the joke with you the other day. I had to buy him Microsoft Office for Dummies last year for him when I left.

The final quote I want to share in this portion of the paper speaks to the perception a staff member has with regard to other teachers who are not integrating technology in the classroom. He described his concern this way:

Some of the harder, I don't know what to say, the hard sciences like core, I don't know. If you say like English, you've really got to look at what are you presenting? You know, if . . . this is confidential, right? If you stand up and you lecture for an hour, all you're doing is allowing those students to go brain dead. They can sit there and they can put the best face on, but they're thinking about the game on Friday night, dinner on Saturday, their parents yelling at them earlier that day, all these other things. And when you go, "what's the answer?" you shock them back to reality for that brief 30 seconds that they're embarrassed because they weren't paying attention. So in this, the responsibility mantle has been placed on their shoulders. They have to study. They have to be actively studying and engaged in the material. So, yeah, you kind of think, at first I started to question. What do you need me for? If these guys just sit here and read the material, what do you need me for? And then I found where I get enveloped in the situation when kids don't understand. You're able to guide them. You're able to help guide them to where they're supposed to be. When it gets to the hands on stuff, the practical application, that's really where it's going to be useful to them outside of high school, is learning practical application. And that's where you really need someone to guide them. So I find myself more here in the labs than I do over here. Until this starts getting into, now we're into networking, more of the advanced material. And now I find that they're really not able to grasp the concepts. And that's where I just nudge them here and there. I don't want to do for them. That's the other thing. Even though I say one on one instruction, I still get them to question. They're saying, "I don't really understand this." So I'll say, "How did you get that?" I still want them to do for themselves which I think will help. They'll be able to stand on their own feet more, which is what I'm really trying to go for.

Do teachers bring personal technology to school?

The next question to which we asked the teachers to respond concerned the types of personal technology they bring to school. Most of the teachers spoke of bringing their cell phones to school. While they admitted to making calls or sending text messages during the school day, most also said they did not use them while the students were

present. The reason given for not using cell phones in front of the students often brought the teachers back to the electronic device policy which prohibits students from using cell phones during class. One teacher put it like this:

They're not allowed to use it in class. I don't think it's fair for a teacher to . . . I don't want to be a hypocrite, so I won't do it either. Now there's, if my wife text messages, she knows there's a code, text messages a code, I'll know it's important. I'll pick up the classroom phone and I'll call her. But I don't think it's fair to do that.

Another teacher echoed this by saying:

They're not allowed to, and I'm not allowed to. If they have to have emergency calls, I let them use my phone. That's another helpful thing with text messages. So I don't need to use my phone, but if somebody needs to give me a message, I can check my text message and it takes two seconds and I don't have to be on the phone.

Another device some of the teachers mentioned bringing from home to use in class was their MP3 players. Because the classrooms are equipped with speaker systems wired for microphones teachers use during instruction, teachers are able to hook their MP3 players to this system to play music for the students. Some teachers allowed their students to use their own MP3 players during individual seat work, while others would play their own music over the speaker system. It was interesting to hear the teachers talk about doing this to maintain classroom discipline and to keep the students on task. For example, one teacher said:

If we are doing work, they know to ask me. Like it's never a policy that, "OK, you've got free reign to use [MP3 players] in my room." But, if they're doing independent work, and no need to converse with anybody, and they've got the full

assignment for the period, then I let them. Just 'cause I feel like it really helps with behavior.

Do students use personal media devices during school?

The teachers were then asked about how many students in the school use emerging media technology during the day. Six of the nine teachers said most, and three of the nine said all of the students use technology during the school day. Some referred to instructional technology, but most of the teachers talked about the students using their own PMDs to send text messages, or using MP3 players to listen to music. The following comments are a few examples of what teachers had to say about how students use technology during the school day.

Many of the teachers spoke of how students are constantly bringing cell phones into the classroom. These phones are often phones that not only allow students to text one another, but are also able to access the Internet. One teacher spoke of SmartPhones being used by saying:

Um-hum. But I do have a few kids with iPhones and I've caught them searching the web. And not at an inappropriate time, but I just notice that's what they're doing. They shouldn't be doing it anyway. I mean at the end of the day, and leaving class.

Another teacher recognizes his students are bringing their cell phones into his classroom, and are often using them. He says:

That's right. I still see the quick text message. But it's nice because you see it down by their leg and it's quick and it's away. As long as it's, I think personally, as long as it's not getting in the way of your instruction, if it's not hindering your instruction or anyone else around you, as long as you're not spending all your

time doing this—personally I don't really mind. You can't take technology; you can't take communication away from us since it's so ingratiated in our culture now. It is so a part of who we are; point out a person without a cell phone on their hip nowadays. And I'll show you a guy who doesn't have a job.

The next teacher has found a way to allow the students to use technology in a way meant to make her course more interesting. She explains this by saying:

Sometimes they'll find music or videos. Like they'll research them and they'll just bring them in to me—especially my French kids. Cause they're very interested in hearing other people. And that's part of my impetus for it. Because I feel like, if I just speak French to them, then they only hear me. What an opportunity. They can go online and hear other people, they can hear native people speaking, and they can see native people speaking. Sometimes they're just interested, sometimes they're going to my website and looking, like if they've lost their assignment and they're looking for assignments. Before quizzes, I have practice exercises before quizzes and they're encouraged to go there and I offer them extra credit if they do that. And I can look at the counter and I can see . . . I can see if . . . they have to sign in so I can see if they've been there or not.

Are there positive effects of emerging media technology?

Most of the other comments shared by the teachers with regard to student use of technology in school were similar to what has been shared already. Therefore, I moved to the next question, which asked the teachers to consider if student use of emerging media technology during school was having a positive effect on their school. Only a few of the teachers felt there were any positive effects, while others were not so sure. As with the other questions, we asked the teachers to provide more detail to support their responses. Again, it was interesting to see the teachers focusing on how technology helps control student behaviors and actions. One of the teachers said the following:

I think it probably gives the students a better sense of freedom. I mean, I think we're really lenient about it. I mean, we couldn't even use our cell phones at all when I was in high school. You had to be outside. So, I mean, they can call their parents. I think that's actually a big thing, too. I think it's nice that they cannot have to go to the office to call mom and say "I don't feel good" or to say "mom, I just flunked this test and I'm upset. Give me some pep talk to make it through my next class." Or just to arrange plans.

Another teacher had this to say, with regard to positive effects due to emerging media technology:

I like it because it keeps them quiet when they're supposed to be on task. But, you know, in their generation. I think when I was younger, I did it too, although I didn't have as many different things to do at one time, but their generation is used to, you know, listening to music, watching TV, doing their homework, talking on the phone. They're used to doing all those things together and some of them, I think, actually function pretty well when they can listen to their music and they're given a task.

The next two teachers seemed to have similar views of the positive effects emerging media technology has had on students. The teachers are referring to students using their MP3 players during instructional time, which they recognize could be seen as a violation of the acceptable use policy at Newlands High. The first teacher said:

I think that the [MP3 players] are having a good effect in my room. Just getting students to focus on writing. You know, we do a lot of writing in English, obviously. And when we're doing writing assignments, that's helped a lot. And it's also helped to just control the classroom. You know, when they're—as a first year teacher, classroom management's a big concern. And it's a lot easier for me sometimes to let them listen to their [MP3 players] on an assignment because they manage themselves. They're listening to music, they're not talking to their neighbor, you know, screaming across the room at someone.

The next teacher agreed by saying:

I like it because it keeps them quiet when they're supposed to be on task. But, you know, in their generation. I think when I was younger, I did it too, although I didn't have as many different things to do at one time, but their generation is used to, you know, listening to music, watching TV, doing their homework, talking on the phone. They're used to doing all those things together and some of them, I think, actually function pretty well when they can listen to their music and they're given a task.

Another teacher spoke about the freedom students have that she did not have as a student. She said:

I think it probably gives the students a better sense of freedom. I mean, I think we're really lenient about it. I mean, we couldn't even use our cell phones at all when I was in high school. You had to be outside. So, I mean, they can call their parents. I think that's actually a big thing, too. I think it's nice that they cannot have to go to the office to call mom and say "I don't feel good" or to say "mom, I just flunked this test and I'm upset. Give me some pep talk to make it through my next class." Or just to arrange plans.

One of the teachers made a comment about the positive effects emerging media technology has had on the academic program at Newlands High. She stated, "I think, when they use it for academics, yes. I mean it broadens their worlds, what they can see, what they understand is in the world. And it gives them access to a huge amount of information." She went on to talk about how she uses a document camera and electronic voting device to save paper for the school and engage the students in a way that provides instant feedback. Here is what she had to say:

We were, at the beginning of the year, we did a lot with word problems. We'd take the word problems, put it on Elmo, display it, and we would talk about it. We use it to conserve paper. Help with that. It's easier for them to see, a lot of times to go up. If it's on the, with the computer, I can get a website, I can take my Word document, put it on the Promethium Board and then the kids can come up, highlight, circle, clear it out and it's gone for the next class. They can engage with

that problem like it's a page in the book and I can use the resources from Prentice Hall, do online little checks...the computer, and not only that, once you activate the active board, they can pull it down and here we go. We have the clicker system, I want to say CPS, I believe that's what it's called. And we have the clicker system. We can enter our own question, and they can click and vote.

While this teacher is excited about how she has been able to utilize the document camera and implement the "clicker system," she also talked about some of the technical glitches she has had with this system:

We have the kids assigned to a clicker. And we figured out how to get the questions from Exam Pro in there and we know how to type new questions in there. What we haven't been able to do now is get the clicker to work with the CPS system. So I've got to get the technology or somebody to do that. I can get it to work with myself, but I can't get my clickers to work with the CPS. So I don't know if we're missing some software or if there's a piece I don't know.

This situation, and others like it, will be discussed in further detail in Chapter V, but is a good transition to the next section of the interview which deals with the negative effects of emerging media technology.

Are there negative effects from using emerging media technology?

After asking the teachers to give us some feedback about how emerging media technology has had a positive effect on the students and their school, we asked the teachers to tell us about any negative effects they have seen. Most of the comments received from the teachers had to do with cell phones and other electronic devices interrupting class time.

One teacher talked about how students are distracted by their media devices and how they are often using them in negative ways. She commented by saying:

It's probably a big distraction. And I think that with that freedom of communication, there are also times where I'm noticing that probably there's some little fight going on and the text messaging hasn't helped with that kind of communication where it's not face to face.

One of the quotes I wanted to share regarding the negative effects emerging media technology has had on students, as reported by the teachers in this study, conflicts with some of the statements teachers made regarding the positive effects of emerging media technology. As you will recall, a few of the teachers felt MP3 players have helped to keep students focused and quiet during individual work in their classrooms. This teacher obviously feels differently about this, because she said:

One of the negatives to letting them listen to music is sometimes I find that they're spending more time trying to find their song than they are doing the task. And that was when I say, "yes, you may listen to music," that's never what I intended was for them to spend the period trying to find their song.

Some of the participants felt there were students who have figured out ways to use technology to cheat on their work. This teacher said, "Taking the pictures of tests and texting them to other people, I find a little perturbing. But, you know, a lot of times you see kids like this . . . and you know that they're texting."

Are there any suggestions from teachers to the community regarding emerging media technology?

Once we had given the research participants the opportunity to reflect on the influence emerging media technology has had on their schools, we asked them if they had any suggestions for their school community that they felt might effectively address increased student use of emerging media technology during the school day. There were a

wide array of recommendations shared with us, many of which I am going to share with the reader because I believe their words speak to how emerging media technologies are influencing their work. I also believe some of their comments speak to the assistance they feel is needed to address their concerns. For example, one teacher said:

I just feel like it should be available, but teaching is such an individual thing that it shouldn't be forced upon everybody. I know a lot of traditional style teachers, my teachers in high school were great, and I didn't feel like I lacked anything for their lack of technology use. So maybe just offering it, but really keeping the freedom for teachers to teach how they wish. And I think just seeing how one teacher has done things on her website, which sometimes encourages me to want to use it more. So not necessarily, directions to use it, but just seeing how to use it. You have to see it before you incorporate it into your own practice.

In other words, this teacher does not feel teachers should be forced to work with technology if they are not comfortable using it. She believes that teachers will utilize technology when they see it work for someone else, or if they are given instructions on how to use it. As you see, there is no mention of what the students may need to be successful in their learning.

Another teacher had this recommendation for her school community to consider:

It's a training issue, yes. People are afraid of it. And, although I've been kind of harsh on the [MP3 players], I mean, I'm really interested in Pod Casting and I think that would be a great use of technology. But we don't have the ability here yet. I don't understand why, but having that available to the kids. I mean, we've been waiting almost a year and half for media casts that we can broadcast like TV shows. It just seems like the infrastructure's there but we haven't.

Here, the teacher is concerned about the amount and type of training she needs in order to feel comfortable using existing technology. While she seems to be excited about the

technology, and wants to make it a part of what she does in class, she is frustrated by the lack of infrastructure needed to support her technology needs.

This next teacher talked about how technology might be used to help individual students with day-to-day needs. He said:

In my previous school, probably the second year I was there and I was there for five years. We did, I taught Algebra I with the Carnegie System. And part of that was, you went to the computer lab twice a week. And they worked on the computer. And I would say some kids it helped them, but it was a different way of learning. You know, like we have Plato lab here and I don't think Plato is a very strong . . . And some people didn't like Carnegie. It kind of, it has to work for that kid, and what that goal is for that kid. If that kid is going to go on to try to be an engineer, probably Carnegie math is not for him. But for some kids who want to, and you show them kind of the realities of how Algebra is used. In the day to day world.

The next teacher's comments are a bit more conflicted. She sees both the positive and negative side of what technology brings to her school. She expressed this by saying:

I think one of the best things to do would be to, first of all, educate teachers on the negative way. I think a lot of teachers don't even think about the fact that, oh, they're going to go to the bathroom and they can text message or call. They just don't think about it. So, an increased awareness. But also some of the positive side, to increase the knowledge of teachers as far as using it. I mean, there's all kinds of things you can do out there with it to be really . . . A lot of teachers don't know it exists or are uncomfortable with it. If you knew it exists and you're comfortable with it, it's another tool that exists, another thing for you to do to make it that much better because students, the attention span, aren't there. Like, even just a few years ago when I was in school. I can see that from when I was there, even till today, the attention span is not, not what it was.

This teacher believes her colleagues are unaware of what students are doing with their PMDs. In fact, she implies that they are not even thinking about what the students are doing with the technology. Even though this teacher states there may be positive

outcomes in student achievement through the use of instructional technology, many teachers do not know it exists. Furthermore, they are not comfortable using it.

The last quote I used from the teacher interviews is filled with a lot of information that is discussed in the final chapter of this paper. When asked for her recommendations, this teacher said:

I've never understood why schools buy computers rather than lease them and then you can keep upgrading on a regular . . . maybe the cost of the lease is just so extravagant. But it just seems that leasing computers, you could get more computers and update them on a more regular basis and, if you could get more computers, you could have computers if the rooms are large enough. Like at my previous school, I didn't have room to put computers other than the one I had for myself. But it would be nice if we had computers in the room so we could use them there. Um, I always, I never use the computer room here or at my previous school because I never felt comfortable going, it wasn't my room and I never felt comfortable going and logging in and doing all that. I just never felt comfortable. And the kids know so much more about the technology than I do, that that's always been a drawback for me.

She continued by saying:

I think it's just a matter of the teachers needing more time to play with some of this technology. We're so pulled in so many directions, particularly at this school. I mean, there are a lot of expectations. You are on so many committees at this school. You know, just to have the time. And if you're a coach, you have even less time. And, like I said, I coach two seasons out of three, and so my afternoons are shot. So, if they could have more time for training and—I don't know what the term would be, but—re-training. You know, come here and let's train once and then. That would help me a lot with this InterWrite. I've now been to two, so—I went to one when we got the technology. The people did and then I went to another one when we had our day—our early release day? And there were four different that we were supposed to . . . there were six things and we were supposed to sign up for four. I went to—one of mine was the InterWrite. But again, it just was so kind of all over the place, and I needed someone who knew English to tell me how I can use this in English? You know, what can I do and then who can I talk to when I'm in a bind?

As you can see, while this teacher might see some benefit from implementing technology into her lessons, she feels teachers are not given the support and time needed to master using the technology.

The comments shared with you, the reader, from the teacher interviews were intended to expose you to the thoughts and feelings teachers experience on any given day with regard to emerging media technology. It is apparent that they feel there are both positive and negative opportunities available to them, and there is little direction to knowing what needs to be done to improve the situation. In the next section, I have included information our research team gathered from a similar interview, which was conducted with the students.

Student Interviews

In order to build on the perspectives the teachers shared with our research team with regard to emerging media technology and its impact on Newlands High, we felt it important to hear from the students. An interview protocol (see Appendix B) was used to guide the interview process, which was similar to the teacher interview.

At this point, I want to remind the reader of the entire research project we conducted at Newlands High School. The research team is interested in finding out how emerging media technology is influencing education at Newlands High. My portion of this focused primarily on how teachers have been influenced by this technology. However, to strengthen my research, it is important to gain the perspective of the students to see if there is a correlation between what the teachers and students believe about the influence emerging media technology has had on their school. Two of the questions from

the student interview protocol deal directly with how teachers are using technology with the students. The next portion of this chapter explores the comments the students shared with our team regarding this relationship.

How often do teachers integrate technology?

As was mentioned in Chapter III, the research team interviewed a total of eight students who currently attend Newlands High. The students were asked to consider how often teachers in their school integrate computer technology in their classroom instruction. They were given the choices of very often, often, sometimes, rarely, and never. Many of the students said their teachers sometimes integrate computer technology in their instruction, while two said often, and one said rarely.

We asked each of the students to provide us with an explanation of how teachers integrate technology in the instruction. Almost all of the students made reference to their teachers using PowerPoint as a way to organize note-taking. Most of the students who made this comment seemed to appreciate PowerPoint because it helped them stay organized. It was interesting to note that when the students referenced classrooms where technology was integrated, they often mentioned Civics and Economics, Psychology, or English. This is not to say technology is not used in other courses at Newlands High, they simply were not referenced by the students. One of the students had this to say about technology use in the classroom:

I have two classes that use power points every day. Psychology and U. S. History. And my art class, he has examples on his pictures, so he shows those to us. In English, sometimes we use the portable document camera to project our projects onto the screen.

Another student had this to say about technology integration at Newlands High:

The teachers like to use power points and videos are often apprehended because it's not like you can actually go on the Internet and get videos because most of them are just blocked. So it's like, can't really go there, but they do use power points and sometimes they bring like movies in. Like Planet Earth or something and play it through the projectors.

In this case, the student also references the types of technology the teachers are using, but goes one step further. He appears to mention the inability to use the Internet to access certain videos because they are "just blocked." During the teacher interviews, a few of the teachers also mention their frustration of having to go home to access sites like YouTube so they could download videos on a disk to bring to school and share with the students the following day.

Few students said they were actively involved in using technology during the lesson. When asked about having the opportunity to use technology in the classroom, a student said, "Sometimes, if we have a project that requires research, but I haven't had one of those in a while."

Which teachers are integrating technology well?

The next question asked the students to think about a classroom where the teacher does a really good job of integrating technology in the lessons. Again, most of the respondents spoke about Social Studies and English instructors when responding to this question. In fact, some of the staff members the students referred to in this section also participated in the staff interview portion of this paper.

One of the students had this to say about a teacher and her use of technology:

Yeah my APUSH (AP US History) class; she does this PowerPoint. She does a PowerPoint for her notes. Everyone can see it and they'll write down the notes, and she does stories and stuff to make it more interesting. But she's still using the PowerPoint so she can do the stories. If she hands it out you're not writing it, and I've been told by every teacher at this school if you write it, you learn it better. So they're trying to get you to write it. And if she's turned around at the blackboard she's not really freed up to tell her stories and make it interesting because she's writing.

This student is interested in the stories the teacher has to tell and feels the PowerPoint presentation allows her to see the class and tell the story as they copy their notes. Another student also seems to think the use of PowerPoint helps him better understand the lesson.

He said:

In my English, AP US History, and Psychology class, she uses power points to show us things and then she'll elaborate on it afterwards. I don't know I'm more of a visual learner I think so having the power point really helps. The power points have little graphics on them to better explain and sound.

The student interviews did not seem to reveal any significant use of technology on their part to enhance their studies. Beyond PowerPoint and the sharing of videos using the projector, none of the students really got too far into instructional technology use. In fact, when we asked one of the students if he could think of a teacher who was doing a really good job integrating technology in their lessons, all he could say was, "no, not really."

There seems to be some similarity between the students' and the teachers' descriptions of how technology is being utilized at Newlands High; the next section

provided the research team and you, the reader, with a little more information to build a visualization of emerging media technology and its influence on teaching and learning.

Student Shadowing and Classroom Observations

As was mentioned in Chapter III, the students who participated in the interview portion of this research were also shadowed throughout the course of a normally scheduled day. We gained parental consent as well as the consent of the students' individual teachers before conducting this portion of our research. By conducting the student shadowing exercises, we were able to get an up-close view of how students are using technology throughout a normal school day. We utilized a recording instrument (see Appendix C) to document each time the student we were shadowing used technology. By doing this, we were able to record students' use of PMDs in the classroom, during class changes, and at lunch time. We were also able to observe and record the number of times students were exposed to technology use during a teacher's lesson.

Similar to the student shadowing experiences, we asked the staff members who participated in the interview process if we could observe them during a normal lesson. Again, our goal was to see how emerging media technology was being utilized during a normal classroom lesson. The same recording device used during the student shadowing exercise was used to record student and teacher use of technology during the observed lesson.

Student shadowing. Before sharing the information collected from the student shadowing exercise, I would like to remind the reader of the open use policy Newlands

High has with regard to emerging media devices. This policy allows students to use their PMDs during the school day, with classroom instructional time as the exception.

However, teachers seem to have the flexibility to allow the students to use PMDs during class when appropriate. Newlands High is the only school in the district to have such a policy.

Even though the students have the freedom to utilize their PMDs during class change and lunch time, there did not seem to be an overwhelming number of students taking advantage of this situation. In fact, one day during a shadowing exercise in the lunchroom, of 180 students being observed, 173 were not visibly utilizing any sort of PMD. On another occasion, before the beginning of the school day in the student common area, approximately 50 students were observed. Of those, one was seen with a cell phone, while four had dangling headphones around their necks.

When the shadowing exercises moved to the classrooms, we paid particular attention to what the teachers did with the technology, if it was being used. The prevailing technological tools being used appeared to be document readers (i.e. portable document camera), PowerPoint presentations, or video presentations using the projectors mounted in each of the classrooms. We also noted that many of the teachers played music during the course of their instructional period.

There were a few instances where the teacher attempted to integrate technology in the lesson but was unable due to some technical problem. For example, a student teacher attempted to play Jeopardy with students using PowerPoint but was unable to get the program to work. The students ended up doing a worksheet instead. In a math classroom,

a teacher attempted to use the InterWrite pads but was unable to get it to work for two consecutive class periods. When we returned to the same class at a later date, the InterWrite pads were apparently still not working, so the teacher used a dry eraser marker and the white board instead. There was also a visit to the chorus room when the teacher attempted to show a video of a recent concert but is unable to get it to work. Two other adults, the student teacher, and the observer were unable to resolve the problem, so the students simply listened to the audio.

What we found as we continued to shadow students is that most of the lessons they were exposed to were teacher-led, with technology only being used to display information. For example, most teachers used PowerPoint to share notes, or InterWrite boards to do example problems for the students.

We had the opportunity to closely follow five of the student participants. During this time we saw examples of students using PMDs during class, which occasionally resulted in teachers confiscating them. There was more than one occasion when we observed a teacher trying to confiscate a PMD from a student, which resulted in the student being removed from class for being unwilling to give the device to the teacher. However, most students were so quick with their ability to check a text message and send a new message of their own that the teacher was often unaware. These messages were coming from students from inside as well as outside of Newlands High.

It was rare to see a lesson taught by a teacher that involved the students actually using technology. In fact, if the students were using technology, they were normally in a computer course or in a computer lab doing research. There were occasional lessons that

involved the students using calculators and the InterWrite pads, but these opportunities were the exception, not the rule.

Classroom observations. Similar to the student shadowing opportunities, we were able to conduct classroom observations with our teacher participants. Our intent was to observe any use of technology on the part of the teacher to enhance the lesson, as well as monitoring the use of PMDs on the part of the students in the class. For the purposes of this section, I have chosen two teachers who I personally interviewed.

The first classroom I observed was a freshman class. From the perspective of the observer who was looking for integration of technology, this was an extremely interesting lesson. The only use of technology came when the teacher showed the worksheet the students would use for the lesson that day via the portable document camera and projector. However, the basis of the lesson revolved around creating a Facebook page for a Greek god that each student drew out of a plastic bag. The teacher created a Facebook page template for the student to draw a picture of their selected god and fill in other relevant information. What makes this even more interesting is that the teacher rated himself as a low technology user and does not subscribe to any type of social network. He does recognize how important social networking appears to be to his students, so he designed this lesson in an attempt to better engage his students.

While I was in the 60-minute class, I only observed two of the 23 students using a PMD, and that appeared to be when they were checking to see what time it was. Most of the students were highly engaged by the activity and were excited about sharing their work with their fellow students. It was clear to me that the students were familiar with

Facebook, because the language they used and the “postings” they included in their assignments were in line with what one would encounter upon visiting any Facebook page.

The second staff member claimed to be a digital native or someone who grew up using technology. She also had a group of 17 ninth grade English students, but this appeared to be a more challenging group. This teacher took her class of nine females and eight males to the computer lab for her instruction. The class began at 11:00 in her room, and by 11:05, each of the students was assigned to his/her own computer and was starting the activity. The teacher had bookmarked the online resources prior to the lesson, so students were able to start with little direction. The teacher allowed the students to use headphones, because the Internet sites they were using involved sound.

A few of the students had difficulty logging onto their computers, but all students were actively engaged in the lesson by 11:08. At 11:10, one student was removed from his computer and paired with another student for being on a sports webpage instead of the intended site. At 11:13, a female student was called out for texting, so the phone was put away and the student got back to the assignment. By 11:14, the entire class was at the intended site and engaged in the assigned activity for the first time.

The teacher came to me during the lesson and began talking about having to use a program called Gaggle. She stated that “we are expected to do this from ‘the powers that be’ with no training.”

Nearly one hour into the lesson, one out of the nine groups had completed the assignment, while two other groups had been removed from their computers for playing

games. Shortly after this, the bell rang and the students were dismissed without saving their work or turning anything in to the teacher.

Summary

In this chapter, the staff members and students of Newlands High have provided clear examples of how emerging media technologies are influencing the instructional day. It is apparent from what each of the participants had to say that emerging media devices have had both positive and negative effects on the school.

In the final chapter of this study, I began to share with you the themes I believe have emerged from the data shared with you thus far. There are certainly clear representations of how emerging media technologies are influencing the practice of the teachers of Newlands High. One example would be the student use of PMDs during instructional time. How is this influencing the practice of the teachers, and how is it impacting the education of the students? There are also themes emerging that are not so evident. One example may be the lack of training found in teacher preparatory programs found in our higher educational institutions. These themes, as well as others, are explored in Chapter V.

CHAPTER V

ANALYSIS AND INTERPRETATION OF THE DATA

Introduction

In this chapter, I will analyze the data in order to set the stage for the story the participants of this study have told our research team. In Chapter IV, I mentioned there was one staff member who was not a classroom teacher. I referenced some of the data that person brought to this research. However, my recommendations are directed at addressing the impact emerging media technologies are having on classroom teachers.

As the stories unfolded in Chapter IV, themes began to emerge and were further explored in this chapter. Glesne (2006) refers to data analysis as “finding your story” (p. 147). She goes on to say that, “data analysis involves organizing what you have seen, heard, and read so that you can make sense of what you have learned” (p. 147).

I have arranged this chapter into two main categories that have several subheadings. In the first section of this chapter, I delved into what can be learned from the findings shared in Chapter IV. Interpretation, according to Wolcott (1994), “addresses processual questions of meanings and contexts: ‘What does it all mean?’ ‘What is to be made of it all?’” (p. 12). I provided data intended to help inform my three original research questions that were mentioned at the beginning of Chapter III. I have identified four themes I believe are vital to what this study represented. I used the data our research

team collected, along with the literature used to support this study to draw these conclusions.

The second section of this chapter consist of suggestions and recommendations I have in mind for the educational community to consider when trying to find the proper place for emerging media technology infusion. These recommendations are based on insight provided by the participants in this study, and findings that surfaced in my review of existing literature.

What Can Be Learned from this Research?

When thinking about what has been learned from the research that has been conducted, one must ask the question: “What does all of this mean?” I have used all the data to identify four major themes that I believe capture what can be learned as a result of this study. Those themes are:

1. Teachers are conflicted about technology
2. Teachers lack the time and necessary training to use instructional technology effectively
3. Technology typically supports traditional teaching practices
4. Some teachers are beginning to use instructional technology in meaningful ways

During the next portion of this paper, I subtitled the four themes mentioned above and provide evidence from Chapters II and IV to support my claims. Before moving on to numbers three and four, I provided three individual teacher case studies that have been separated into a continuum that I believe is an important discovery that influenced both my recommendations and my conclusion.

Teachers are Conflicted about Technology

Cambridge Online Dictionary (2010) defines the word conflicted as being “confused or worried because you cannot choose between very different ideas, feelings or beliefs and do not know what to do or believe” (Cambridge, 2010). This definition truly outlines the feelings of nearly all of the participants in this study feel about personal and instructional technology. As I began writing this section of the paper, I found myself using the word “frustrated” several times, and struggled with how this emotion factors into the confliction the teachers feel with technology. The frustration they feel seems to stem from trying to manage student PMD usage and random technological glitches while trying to integrate technology in their classrooms. This can often drown out the positive experiences they have in their classrooms.

In this portion of the study I have arranged the words and actions of the participants to help expose this confliction with regard to technology that I believe is occurring in our schools. I have separated this section into two parts, which I believe have helped to demonstrate the conflicted feelings teachers have with technology. I first focused on the negative experiences teachers seem to be having at Newlands High with regard to technology. Some of these experiences are created by problems with instructional technology, but the majority of issues revolve around the students and the PMDs. The second portion deals with the positive experiences and opportunities teachers see with using technology. After sharing both the negative and positive experiences the teachers have shared with our research team, I was able to better display the confliction that exists because of all of these issues.

Negative experiences with technology. For the most part, many of the teachers see the potential of using technology, but they also understand there are problems associated with it. For instance, a staff member attended a conference and went to a session where the presenters suggested using Facebook as a tool to increase student interest. This is what she had to say when reflecting on this experience:

I don't know. I attended a meeting, and they had a whole session on how to integrate Facebook into teaching and had people setting up Facebook pages for Caesar. And I don't know whether that's . . . and that's a media that the kids are so comfortable with, that would really be an assignment that they would love to do. Then there were warnings at the bottom, be careful, don't let them do this, and . . . And I was like, why would you mess in that if you have to be so careful about it?

This teacher attended a meeting and was able to see the impact Facebook can have with increasing student engagement, but because there is some risk involved with the students making poor choices and not using it appropriately, she is conflicted about using it in her classroom.

Another teacher talked about her desire to use YouTube to support her lesson, but was frustrated because the district blocks access to this site. While she is frustrated, she also understands why this has to happen. She said:

Well, I know there's a lot of things on YouTube that wouldn't be appropriate. But I feel like we have a lot of discretion. I mean, we have to use judgment in a lot of things we do. And that's something they're not just allowing us to use our own judgment for. But I don't know if they could just block the student accessible computers. Like obviously the computer lab shouldn't have YouTube or MySpace or Facebook or any of those things. They should be blocked. I understand that. But teachers?

What is interesting about this quote is the staff member's apparent confliction with the district's message of "not trusting" her enough to give her access to the Internet sites she mentioned, yet she understands why the students should be blocked. While this may appear to be a double standard, I would argue this is a strong example of how conflicted the teachers are about when and how students should be able to use technology.

As was mentioned in Chapters III and IV, Newlands High has implemented an open use policy, which allows the students to use their Personal Media Devices (PMDs) devices during non-instructional time. This policy has allowed individual staff members to control when and how students can use their PMDs. In fact, some of the staff members have brought their own MP3 players to school in order to play music while the students do seat work. Again, the teachers then became conflicted about when it is appropriate for students to use the technology. Some of the staff members seem to be comfortable with allowing students to use PMDs during certain parts of the day, while others were concerned about losing class time. Consider the statement made by this staff member:

When I look around sometimes, I have to go . . . because they're spending more time trying to find the song they want to listen to instead of doing what they're supposed to be doing. Now that is a drawback. But they're quieter when I need to discuss things when I need to with students and it's done individually. So that's really good. And the bad thing is, sometimes they don't know the boundary, even though we've tried to establish the boundaries. Like my student teacher came in and she just had to go over the rules again saying—you know, I have kids that walk in—they walk in with the headphones on. Like once class starts, those headphones have to come off. They'll say, "It's off!" But I want them out of your ears. Now, you know, we'll tell you when you can listen. Or you can ask if you want. But, when one of us is up here talking or we're having a class discussion or whatever, some of them still want . . . and they don't want . . . And sometimes they get attitudes, but that's just the way it is.

While this person believes student PMDs can help to keep the students quieter when doing independent work, he also believes they don't know the "boundaries," meaning they do not know when and when not to use their PMDs. Teachers seem to have resolved themselves to believing there is nothing that can be done to stop the students from bringing them to school; they believe this to be an ongoing struggle they will have to endure. In fact, this teacher went so far as to say this about students using their PMDs with regard to Newlands High's open use policy:

It's interesting to see it from a school where none of it was allowed to here where it's tolerated and it's actually at the teacher's discretion. They're gonna do it. They're gonna want to do it. They're hungry to use their technology whether it's a cell phone, an [MP3 player], whatever it is. And they'll do it at the cost of being suspended or getting in trouble. So you can say, it's not allowed, and you'll just punish a bunch of kids. Or you'll put controls in there and give them boundaries. And say, as long as you're in these boundaries, everything's OK.

As I continued to review the data, it became apparent that the teachers were having a difficult time dealing with the PMDs brought to school by their students. As was seen in the literature, this is not an isolated issue. Nationwide, we are beginning to see and hear more about the impact that cell phones, digital recorders, and other emerging media devices are having on our schools (Peck & Mullen, 2008). I believe the teachers were truly frustrated with not only the students who are using their PMDs during the school day, but the policies their school system and their schools have created to hold students accountable. While this frustration exists, schools will continue to deal with disruptions caused by digital devices.

The staff members at Newlands High have all had to confront students who are using their PMDs during the school day. One of the teachers had this to say about how students' PMDs have impacted his profession:

Yeah, they, they will text message in class and not pay attention. They'll try to do stuff like that. It's a fight once you do catch on to . . . You know, you can give me your phone or I can have a police officer take your phone. You know, so I haven't had these conflicts with the students directly. 'Cause most of the time, if I ask them, they'll give it to me. But I know, I've heard other teachers, there's been more of a conflict about things. And that not only keeps that student from learning, but it takes five minutes out of your class. So it can be negative that way. You have to watch students, you know, they'll ask to go to the bathroom during a test and they'll go out in the hall and try to text message their friends. Either get answers or give answers. You have to be wary of things that don't even seem like a big deal. 'Cause everybody carries a cell phone, all the kids want to go to the bathroom, because they can text message one another.

This staff member's frustration with the students and their PMDs is evident, and speaks to why teachers may be conflicted with using technology in school. He speaks of the problem that occurs when teachers ask students to hand over their PMDs after using them during the school day. This is causing students to lose class time and is keeping them from learning. This quote also claims the students are using their phones to text test answers to other students in the school. If this is happening, grades are now being inflated and not demonstrating student mastery of the learning objectives. Other staff members we interviewed claimed the students were also using their phones in ways that lead to student disagreements. One teacher made this comment:

Well, I don't think it would be an advisable policy because the reason for kids not having cell phones, especially in a school like this, um, you know one kid gets mad at another kid. They get on the phone and call their brothers and to come up

here and you know, potentially to start a fight. That's a problem. It's not that we're trying to stop their fun, you know, it's just a problem.

One of the teachers was not only frustrated with students using their phones to text during class, but he was equally frustrated with the technology not working for him during a lesson. He wanted to use technology in a way that would make the lesson more student-centered, but the technology did not work. This, in most cases, would cause teachers to stop using technology as a support. He said:

I mean, they want to text and not pay attention in class. And like I said earlier, it's reading of the flash drives, when they bring their flash drives in; that happened to me last year. At the end of the year they were doing a PowerPoint project for me. They'd bring it in and they couldn't read it or couldn't send it through the email. I'd say, "Well, just email it." Well, that couldn't get done either.

Some of the participants in this study felt that parents were also part of the problem with regard to PMDs disrupting the school day. They seemed to believe that many of the text messages students received, and responded to, originated from the parents of their students. One staff member said it this way:

The parents here are very pro them having it. And if you ever try to take a kid's phone away . . . and the kids will say "It's my mother calling." "It's my mother texting." And sometimes you'll be like, yeah, whatever, and they'll show you, and it is! And so then you're sort of like, well, what can you say? You can't keep a kid from their mother. Well, I guess you could, but . . . And when you take phones away, the parents get very upset. Well, you're having a test and the child has his phone out. "Well, I bought him that phone and I'm paying for the service on that phone." And that's a discussion that we have here often. And the easy way out would be to say, just blanket say, and "No, you can't have it." On the other hand, that's not reality. So I think that we need to work on it a lot more.

Another staff member expressed his concern about how cell phones can be used to record him or fellow staff members in a moment of weakness. He explained his concern by saying:

But I'm fearful that sometime there's going to be a camera on me and I'm not gonna be aware of it. You know, I don't think I would say anything inappropriate or anything like that, but just being videoed when I'm not aware of it—that scares me. And I'm sure that probably happens and I know that last year we had a kid who was showing us this silly little dance that he did—and it was OK with him—but when he did it, everybody pulled out their cell phones to take a picture, you know. And I'm just; I think they're too quick to do that sometimes.

This fear is certainly not unfounded. Anyone with Internet access can go to YouTube.com and search “angry teacher” and come away with several examples where teachers have been recorded by their students. In fact, an incident of a teacher who was recorded by his students occurred in 2006. In this video, the teacher made the students stand quietly by their desks while the national anthem was played. During the video, he became agitated and yelled at times. This entire incident was recorded on a student's cell phone and posted on YouTube (Peck & Mullen, 2008).

Thus far, I have demonstrated the negative feelings and frustrations the teachers expressed with students and their use of PMDs. In fact, what became apparent to me as I read back over the transcripts is the overwhelming sense the teachers have about not being able to control this situation. Many of them have resolved themselves to thinking it is a fight they do not need because they will not win. So, why do I feel the teachers are conflicted about using technology if there is such an overwhelming sense of frustration with using technology in school?

Positive experiences with technology. While there were several examples of how technology can be problematic for the teachers, there was also evidence that there were positive experiences. In Chapter IV, I shared data from the interview our research team did with the Newlands High's staff. One of the questions we asked the staff had to do with the positive effects they felt technology has had in their school. There were examples given that demonstrated the impact technology has had on the students, but the majority of the comments from the teachers had to do with their use of the technology.

Several of the teachers in the study talked about how email has been a valuable tool for them. Teachers spoke of using it as a way to communicate with parents regarding student grades, or upcoming assignments and opportunities in their classrooms. One teacher actually spoke of former students who are now in college who still email her to proofread their papers. Even the teachers who did not seem to be as comfortable with technology felt comfortable with using email as a way to keep in contact with students and parents. I found one particular story remarkable. This teacher relied on email during a difficult time in her professional career. Her school had burned to the ground and all of her work was lost. When she got home and checked her email, several teachers had already sent notes and other teaching aids to help rebuild her toolkit.

Some teachers used a variety of other technologies to communicate with the students. One of the teachers spoke of using Podcasts, while another actually started a Facebook page dedicated to posting future assignments and reminders from home, because the district does not allow the use of this site through their server. All of these

examples demonstrate how the teachers have accepted various forms of technology to help communicate with their student communities.

Teachers are also using computer programs like PowerPoint to help students take notes and stay organized while they present their content. One teacher talked about using PowerPoint to create games meant to help the students with translations. She said:

I make a lot of PowerPoints with cartoon drawings. I scan cartoons that I draw with the translations. Like, I'll show the PowerPoint and the kids will translate out loud the drawings and they're animated. Usually, I'll try to find some music that will go along with it so we'll do something like that. I have like Jeopardy games that I show using the projector.

Though she could merely hand out worksheets and have the students work on translations by themselves at their seats, she has found a way to use technology to support her instruction.

Many of the teachers talked about how they took advantage of the open-use policy by allowing students to use their MP3 players during class time to help them stay quiet and focused on their work. While they were not permitted to use them whenever they wanted, the teachers had the flexibility to allow students to listen to their music. Some teachers even used the speaker systems in their classrooms to broadcast their own selection of music during independent work.

Teachers talked about letting the students use technology to work on projects. Since most of the classrooms only had one computer, if the teachers wanted the students to use computers they had to go to either one of the small computer rooms on their hall or the media center. During the interview we asked teachers if they would like to have

laptop computers for all the students so they would not have to travel to the computer labs. Most of the teachers said yes, but one in particular said no. While you might assume this means she does not like using technology, this is not so. She said she likes to take the students to the computer lab because that appears to be more of an “event” for the students. Her take on this situation is that when the students are given the opportunity to go to the lab, they appreciate it more.

Why teachers are conflicted. As I analyzed these data and tried to create a compelling argument to support my claim that teachers are conflicted about using technology, I noticed a pattern. It seemed that the teachers were frustrated by the lack of control they had over when and how the students used their PMDs. It also seems they become frustrated by the technological glitches that can occur, whether it be the district filter or a digital projector malfunctioning. However, most of the teachers are excited about using technology to enhance their delivery of information to their students. They like to use PowerPoint and document cameras to help organize the information.

Herein lies the conflicted feelings the teachers have with regard to using technology. As long as they are in control of how the technology is being used, they are comfortable using it. But teachers were uncomfortable putting the technology in the hands of the students. For example, the teacher I referred to who had the opportunity to attend a workshop to learn how to use Facebook in a way designed to engage the students chose not to because of a disclaimer. Because there was a chance the students could make a decision that could cause problems, the idea of implementing this into her instruction was dropped.

Another example that I referenced earlier had to do with the students using their MP3 players during the day. Our research team conducted member checks after all the data were collected and one of the questions we asked the participants we were able to speak to was, “had anything changed since our study began that you would like to mention?” This particular teacher said the open technology use policy had changed, and he was frustrated by that because the students were unable to use their MP3 players during independent work. This is another example about how conflicted the teachers can become with regard to when and how to use technology. The teacher recognizes the positive aspects of letting students listen to music, but is often frustrated when they are distracted by the MP3 players. Yet, he must feel the distraction is worth the risk because he is disappointed by the ruling to ban students using their PMDs at school.

Several more examples are found in Chapter IV that support the concept of teachers feeling conflicted about technology usage in their school. I did not encounter too many teachers who were completely unwilling to find ways to integrate technology in their lessons. It is difficult to completely identify what is causing the confliction, but I believe this staff member summed it up well when she said:

I feel like teaching is such an individual thing and it's good that teachers have access to that technology. And students are going to be having that at some point during their day. But I don't feel like it should be pushed so much that someone like me who is already using it would feel guilty about not using that. I don't think anyone is like; no one is particularly like called me out to say “You should be using this.” But the fact that we had to go to the training, and I had to go to two trainings, I feel like someone's going to walk in my room and see that it's still in the bag in my drawer and I feel like someone's going to be upset with me for not using it.

This quote is a wonderful synopsis of how most teachers that participated in this study feel about technology integration. Most teachers would agree that having access to technology is a good thing, but they do not want to feel pressured into using it in a way that leaves them feeling vulnerable. This is where the conflicted feelings they have with technology become the strongest. As I transition from teachers and their confliction with how and when technology should be used and move to the next topic, it is important to note how they are related. Teacher comfort with using technology can often be related to the amount of training they have received and the time they have had to use it.

Teachers Lack the Time and Training to Implement Instructional Technology

Another of the themes that emerged from the data was the fact that teachers lack the training needed to successfully integrate technology into their lessons. As the literature suggested in Chapter II, teachers can be equipped with all types of technology, but it will not be used if they are not given the training and support they feel is needed to utilize it effectively (Ma et al., 2005, Tapscott, 2009, Yang & Huang, 2007). The National Center for Education Statistics, with the support of the U. S. Department of Education, released a report in November of 2002 that focused on technology in schools. The primary goal of this report was to provide “a wide range of options and suggestions for technology administrators to adapt assessment to their school’s situation and needs” (U. S. DOE, 2002, p. xvi). The report focused on seven key areas, one of which was professional development and training to support technology integration.

Many of the staff members who participated in the interview process of our research felt they had an ample supply of technology to use. However, many of them felt

they were unable to use the technology to its full potential because they lacked both the time and the ability to use it. For instance, one of the staff members had this to say:

I think it's just a matter of the teachers needing more time to play with some of this technology. We're so pulled in so many directions, particularly at this school. I mean, there are a lot of expectations. You are on so many committees at this school. You know, just to have the time. And if you're a coach, you have even less time. And, like I said, I coach two seasons out of three, and so my afternoons are shot. So, if they could have more time for training and—I don't know what the term would be, but—re-training. You know, come here and let's train once and then.

It is interesting that this participant used the word “play” to describe what was needed to help teachers feel more comfortable with the technological tools at their fingertips. More importantly, this staff member's words encapsulate the conundrum many teachers face as they seek to implement technology.

The next teacher believes teachers are too quickly judged as resistant. She says, “A lot of teachers don't know it [technology] exists or are uncomfortable with it. If you knew it exists and you're comfortable with it, it's another tool that exists, another thing for you to do to make it that much better.” This statement is similar to one made by Eileen Coppola (2004). Coppola believes we are often too quick to judge teachers as resistant to change. She says,

Administrators and educational policymakers often assume that if teachers are provided hardware, software, and professional development workshops on using computers, they will automatically integrate them into their teaching. When they don't, they are often labeled “resistant to change.” (p. 49)

Teachers at Newlands High all have access to a technological tool called the digital tablet. In Chapter I, I defined a digital tablet as a hand-held, interactive board that wirelessly projects hand-written information to a larger screen. As we spoke to the teachers about this tool, we found the math teachers were more likely to use this tool than the others. In fact, while we were conducting an interview with one of the staff members outside the math department and asked her about how often she used her digital tablet, she went to her file cabinet and took it out for what seemed to be the first time. When prompted about this situation, she said, “Not as many people are using their digital tablets. ‘Cause they’re just difficult to figure out, I think. We just haven’t had enough training to know how to use them.”

As I alluded to at the end of the previous section, teacher preparation and training are heavily related to the comfort level the teachers seem to have with regard to technology. Many of the teachers appeared to be comfortable using computers to assist them with PowerPoint presentations, but there was little evidence that teachers were providing students with the opportunity to utilize the technology themselves. In the previous section, one of the teachers recognized that certain technologies were not being used. She attributed this to a lack of training needed to help the staff members feel comfortable with the technology. It is my assertion that many teachers would agree with this statement and would welcome the support needed to implement technology integration with confidence.

The training required for teachers to feel comfortable enough to implement technology into their lesson plans can often become the nail in the coffin of sustaining

technology integration programs. Barbara Means, William Penuel, and Christine Padilla (2001) acknowledge this predicament, and provide some insight on how to help overcome this issue. They performed a study at Bogan Computer Technical High School, which has been cited by Family PC magazine as one of the nation's "top 100 wired schools" in 2001. Like most staff development initiatives implemented in schools, teachers and administrators cite time as a major barrier. Means and her colleagues found that Bogan devoted much of the teachers' paid flex time to technology training, which was offered at the school before and after classes. Means et al. (2001) report that "this arrangement has in effect stretched the time available for professional development, and roughly 60 percent of the in-service hours to technology" (p. 57).

While some of our study teachers indicated that they found the digital tablets helped them with instruction, this teacher expresses her frustration with the device.

I think sometimes I know I've felt guilty a little bit. I know I've used technology a good bit just with InterWrite, for example. I mean, I feel guilty that I don't want anything to do with InterWrite. I hate it. Like I just don't like it. And I've gone through the training for it twice. It never really made sense to me. I mean, like I could do it, but the whole time.

Although she has had training using the device, she mentions that it really never made sense to her. She even states she feels guilty about not using it. I believe this speaks to the need for continuous training throughout the year. Teachers are busy people, and have many responsibilities. If we expect them to be able to use technology in meaningful ways, they need proper training.

Another staff member at Newlands High was asked to speak about the advantages he has seen with having access to the digital tablets. His answer supports my claims; without the proper training, teachers will not integrate technology. Here is what he had to say:

But from what I've seen so far with using it, it's not quite as user friendly as it could be. And the fact that I'm fairly good with technology and I've fiddled with it. I haven't found, not that it's bad, but for me, I just don't think I've found a niche for it with what I'm doing. Because I've actually used the Smart Board before, but it's another, more in depth way you can do this thing. It's a matter of getting it in, getting a niche for it, getting comfortable with it. 'Cause I think even teachers who are younger teachers, who are better with technology, for whatever reason, I don't think it's really caught on yet because of the barrier with it. They really haven't really found what it can do.

Lack of proper training to support teachers as they seek to implement instructional technology in the classroom is certainly a difficult barrier to overcome. As was demonstrated in Chapter II, these barriers can be significant enough to stop progress in its tracks. When teachers are apprehensive about using technology in their instruction, they are not likely to make it a meaningful part of their lesson plans (McNierney, 2004; Yang & Huang, 2007). If school administrators do not support technology initiatives, there will be no reason for teachers to feel motivated to implement the programs (Coppola, 2004; Foltos, 2002; Yang & Huang, 2007).

I have addressed other barriers, such as training needs, in earlier sections of Chapter V, but I felt it important to note that the district office plays a role in this issue. The people involved in managing the technology can either set up policies that block everyone, including the people interested in using correctly, or they can work with

schools and their communities to establish policies that allow access with agreed upon, guiding parameters. As I conclude this chapter, I have more to say about what I think we need to do to address the issue of educators not feeling prepared to use technology meant to enhance student learning. It is clear to me that there needs to be a more concerted effort to address this issue.

Technology is Supporting Traditional Teaching Practices

As was mentioned in Chapter I, this research is similar in its approach to the research conducted by Cuban, Kirkpatrick, and Peck (2001). While there are differences, a common thread of findings is that of teachers using technology to support their existing teaching practices. While teachers recognize computers and other instructional emerging media devices play an important role in the lives of their students, successful instructional technology infusion has rarely found its way into most classrooms.

One of the themes seeming to emerge from these interviews revolved around integrating instructional technology into lesson plans. When we spoke to the staff members and students and visited classrooms, it was clear to us that the majority of technology use was in the hands of the teachers. In fact, the data we collected suggest the staff members who use the technology are mainly reinforcing practices that have always been in place. For example, instead of students copying notes from the whiteboard, chalkboard, or overhead projector, they now copy them from a PowerPoint presentation shown on a digital projector via a computer.

Through our observations and student shadowing experiences, it became apparent that staff members were, more often than not, using technology to organize notes, show

movies from the Internet, or take student attendance. Instead of giving students who forget to bring their books to the classroom another copy of the text, the teachers use a document reader, or the portable document camera, to project the book for the entire class on the wall. It was rare to hear or see staff members talk about instances where the students were using technology. Those feelings were confirmed when we conducted student shadowings and classroom observations. For the next few paragraphs, the words of the students and teachers, along with the data we collected during the shadowing and classroom observations, will help to maintain the fact that most teachers are using technology to support existing teaching practices.

When asked about how this staff member used technology in his classroom, he spoke of using PowerPoint to support his lecture. He had this to say:

Just as far as most days, if I do any kind of lecture based type thing or discussion, I do it on PowerPoint. So we do that most days. Try to, especially if it's a relevant topic, find a 3, 4, 5 minute video clip of something. Going on, during the economics part a few months ago when they were having, you know, the Wall Street class and all that. So the first part of every day, we'd spend three minutes just watching one of the segments off of CNN.com where they talked about it.

Some of the staff members we spoke to also commented on the different ways they use technology to support student learning. As I examined how the technology was being used, it appeared that when students used technology, they were often doing work they used to do with paper and pencil. This staff member speaks of how she would like to use technology in her classroom by saying:

Well, it would be easier, I mean kids are still having a hard time taking notes and I don't know—I teach mainly freshman, so I don't know how the middle school

teachers are handling their notes, if they're doing a lot of fill in the blank notes or what. So I would think it would be good. I would start sending them files and we would work on it that way. It would be some fill in, you know. That's very interesting. I hadn't got that far yet. I would say that it would definitely change my teaching. I would be sending them stuff for them to do. And then they would be giving it back to me. And another thing is, I went to the TI Inspire workshop this past summer. And that's kind of what they want to do with this. I'm not there yet.

As was mentioned in Chapter IV, we also interviewed the students to ascertain their perspective of where their school is with integrating technology. It was our goal to find out if there was a correlation between what the teachers believe they are doing with technology, and what the students see happening. When we listened to the students and shadowed them through their schedules, our feelings were supported. Most of the students said their teachers were using PowerPoint and showing videos, which is also in line with what the teachers had to say. When we asked the students to tell us how many times they used school technology in the classroom, many of the students said rarely and one actually said never. One of the students described her use of technology in school by saying, "I've only used a computer for presentations and I don't get too many of those." Another student replied to this question by saying, "The teachers, most of my teachers when they're not lecturing, and telling you all the stuff you're supposed to know, they're normally in front of their laptop, either looking for new curriculum ideas or emailing other teachers, or basically messing around on the laptop."

There are many barriers for schools to overcome as they seek to successfully integrate technology in the classroom. As demonstrated in Chapter II, these barriers can be significant enough to halt progress. When teachers are apprehensive about using

technology in their instruction, they are not likely to make it a meaningful part of their lesson plans (McNierney, 2004; Yang & Huang, 2007). If school administrators do not support technology initiatives, there will be no reason for teachers to feel motivated to implement the programs (Coppola, 2004; Yang & Huang, 2007). I have already mentioned that teachers feel the need to have proper training to use the technology efficiently to support teaching and learning. If these issues and other issues are not resolved, teachers feel there are barriers keeping them from successful implementation.

Some Teachers are Beginning to Use Instructional Technology in Meaningful Ways

Our research has found that teachers are often reluctant to integrate technology for a variety of reasons. However, I believe the research we conducted at Newlands High School revealed that some teachers are using the technology in new and meaningful ways. While we may be able to infer that they are mainly supporting their pre-existing teaching strategies, I believe evidence shows that they are making strides to be more open to using new instructional technologies.

One of the teachers reports how she personally supports the use of technology, but is not happy with the way students are using it. She said:

I mean, it's kind of funny because I'm a big proponent of technology. But I'm not that big a fan of what the kids are doing right now. I would say some form of MP3 being the most popular. And cell phones. And it kind of perturbs me to see them. They'll walk down the hall plugged in, texting, and they have a whole world of kids to talk to, but they're texting someone who's not here and they're tuned out listening to something on the MP3 player, so that bothers me a little bit. I feel like they're becoming a lot more isolated because of their use of technology. On the other hand, they're very adept. If I go "How do I go someplace?" they can show me on their iTouch. They can Google up a map or something. But instead of kind of communicating it to me, they're like "Here, look at . . ." They don't have that skill of being able to explain the directions to me, but they can "Well, look

here. Look at it on my Google map.” Whereas before, I would have kids tell me “You go right here, you turn left here.” Instead of just showing me.

The teachers are also using an online program to enhance the academic programs at the school. This program is being used in a multitude of ways, which include credit recovery programs, remediation and to earn new course credits. The credit recovery program is used when students fail courses. Students are assigned a minimum of 50 seat hours, and are assigned certain curricular objectives that they are required to complete. Once both requirements are met, the student has recovered the failed credit. The new course credit option is very similar to the credit recovery option, but the student has never taken the course before, and must complete at least 120 hours of seat time.

The remediation option is being used by the teachers to help struggling students, or students who miss class for one reason or another. The teachers are able to go into the program and assign certain curricular topics for individual students to complete. For example: a student misses two days of Algebra I due to illness. The teacher goes to this online program and selects the appropriate curriculum objectives for the student to complete. Instead of handing the student workbook packets, the student is able to go online and work with the program, which provides tutorials if needed. Once the assignment is complete, the program corrects the work the student did and will provide the teacher with a report of how the student performed.

There are also teachers in certain departments that are using the digital tables and interactive white boards to support student learning. One of the math teachers spoke about how the students seemed to be more focused on the lesson when using the digital

tablets. She talked about how she creates math problems on the digital tablet, which is then projected on the interactive white board. She gives the students the tablets so they can solve the problems and receive feedback.

Teachers also recognize that Facebook is an important form of communication for their students. One of the teachers spoke of creating a Facebook page to communicate with the students. The teacher uses the site to post homework assignments, reminders for project due-dates, or to create writing prompts for them to respond to.

While it may be true that many of the staff members are using the technology available to them to continue to support existing teaching practices, this research suggests the teachers are interested in utilizing the technology to better prepare students for the future. As was mentioned earlier in this chapter, if teachers were given more support and meaningful, ongoing training, I believe many of them would begin using the technology with the students more effectively. I speak to this issue further at the end of this chapter when I discuss the implications that surfaced from our research.

The Teacher Categories

I have shared the four themes that I believe best describe the message our research participants gave us as a team. Even though I believe the four themes give a strong picture of what is happening in one high school in the United States, I believe I need to go even deeper into this issue. In order to do this, I want to share three teacher interviews in their entirety because I believe their words help to shape an even truer meaning behind these themes.

As I reviewed and analyzed the data, three distinctive categories began to reveal themselves. Each of the three categories was created to relate to the comfort level and use of technology each of the participants spoke of during their interviews. These categories are as follows: (a) the digital native, (b) the dedicated user, and (c) the cautious user. After sharing these individual case studies, I proceeded with an analysis I believe to be crucial to understanding how big of an issue we have as we seek to address emerging media technologies in the twenty-first century.

The Digital Native

There is a generation of people who have grown up in a world that has immersed them in video games, the Internet, cell phones, digital music devices, and much more. Prensky (2001) refers to this generation as the *digital natives*. They, unlike any other generation, have been exposed to a digital world that many other generations have never seen. Prensky (2001) says that these individual will have spent 5,000 hours reading books, 10,000 hours playing video games, and 20,000 hours watching television by the time they reach college. Today, there are teachers graduating from our universities and entering the profession of teaching who fit into this category; some of which participated in our study.

The teacher I selected to represent this group of teachers has been in the teaching profession for two years, both of which were at Newlands High. She is currently teaching AP and honors science courses. When asked about her personal comfort level with using technology in her personal life, she felt that she was somewhere between comfortable and very comfortable. She is a frequent user of the Internet and her cell phone. She received

her first cell phone when she was a sophomore in high school in 1999, and used the Internet for the first time in the mid 1990s.

When asked whether or not using the Internet was a natural experience for her she stated that:

I think it took a while to actually make it something that was a habit. At first it was sort of a luxury and I used it for email primarily. But now I've gotten used to it and the more popular the internet has become, you can't do without it. I do tons of research on my own—especially at home. I mean this is for school. I prepare a lot at home using search engines to find out information.

Next, we wanted to find out more about any positive or negative personal experiences she may have had with technology. When referencing positive experiences, she mentioned her ability to communicate with friends and family, and her ability to communicate with AP environmental science teachers all over the United States via a ListServe. She claimed to receive four or five emails a day from the AP environmental science ListServe. By referring to this ListServe, I inferred that she no longer felt isolated in her preparation for teaching her AP environmental science course because she is able to collaborate with teachers who bring various instructional approaches to the forefront. When speaking to the negative experiences she has encountered, she focused on the frustrations of what she referred to as “user error”; when the technology doesn't work the way she needs it to work.

When asked about the various technological devices she uses in her personal life, namely video sites like YouTube, the conversation took an interesting turn. Her personal and professional use of technology crossed paths when she said, “I do use YouTube a lot,

actually. But we can't show YouTube at school. I would use it a lot if we had access." Her inability to utilize the YouTube site in school was an obvious frustration for her.. Continuing to expand on her frustration of not being able to use YouTube in her classroom, she shared an example of something that had occurred in the previous year. She spoke of a lesson about the food chain and how a few of her students put together a funny YouTube video and posted it online for the class to enjoy, but they were unable to download it in the classroom. Ms. Smith explained, "The lesson was really clear and would have engaged the student really well. And I couldn't show it. It was frustrating."

While her frustration with not being able to fully utilize YouTube in her classroom was apparent, further into our conversation she alluded to conflict referred to earlier in this paper. In a reflective statement, she said, "I know there's lots of things on YouTube that wouldn't be appropriate. But I feel like we {teachers} have a lot of discretion. I mean, we have to use our judgment in a lot of things we do. And that's something they're not just allowing us to our own judgment for." She continued by saying, "But I don't know if they could just block the student accessible computers. Like, obviously the computer lab shouldn't have YouTube or MySpace or Facebook or any of those things. They should be blocked. I understand that; but teachers?" The desire this teacher expresses to expose students to technology because she believes it will "engage" them is overshadowed by her belief that students will make poor choices if exposed to the full menu of technology available to them. She is not alone; in fact, many of the teachers we spoke with share this same opinion.

As the interview transitioned into a discussion of how she utilizes technology in her professional life, I asked her to share with me how often she integrates technology into her lessons and to cite a few examples. She mentioned using technology very often and is likely to incorporate PowerPoint, the projector to display videos downloaded from YouTube or TeacherTube, and the portable document camera several times a week. She was asked about the number of times the students use computers themselves and she said she takes them to a computer lab every other week. She expressed her frustration with the school only having one lab, which limits the amount of computer time she is able to provide her students. When asked if she would use the computers more if she had them in her classroom, her answer was both interesting and powerful. She said, “I probably wouldn’t prefer that,” and elaborated,

Honestly, part of it for me, it’s kind of an event to go to the computer lab and be in a separate setting. I think it’s good for kids and I know my mom teaches at a school where they have all their own laptops and she has a lot of issues with them getting distracted by other thing on the computers. And personally, I don’t learn as well typing notes. I like writing notes and maybe if I typed them out later . . . So just from all of those personal experiences, I would prefer not to.

The final topic discussed with this teacher focused on a policy unique to Newlands High. When the school opened, the faculty, parents, and community members instituted a policy allowing students to use their Personal Media Devices (PMDs) during class changes, in the cafeteria, and in certain classrooms, if permitted by the teacher. Even though this policy was intended to be universal and consistent across the school, Ms. Smith felt there was latitude for each of the teachers to use their judgment when upholding the policy. To her, it is important to model her expectations for the students. If

they aren't to use PMDs during class time, she believes she should hold herself to the same standard. However, when students are given time to complete tasks in the room during instructional time, she allows them to use their MP3 players. She said,

They know to ask me. Like it's never a policy that, "Ok, you've got free reign to use [MP3 players] in my room." But if they're doing independent work, and no need to converse with anybody, and they've got the full assignment for the period, then I let them. Just because I feel like it really helps with behavior.

The next question dealt with the perception of consistency existing from classroom-to-classroom and teacher-to-teacher. She described how students become upset because the school policy states that teachers are to "take" cell phones from students if they have them out in class. Parents have to come to the school to retrieve the phone. Ms. Smith shared that she was not as strict as other teachers because she doesn't automatically take the phones when she sees them out in her class. She simply says, "I don't want to see your phone. Please put it away."

The Dedicated User

The term *dedicated user* describes any teacher who is so into technology that it has become a natural part of what they do. Some dedicated users are so into personal and instructional technology that they find themselves using or talking about it quite often. A digital native can fall into the dedicated user category because of their passion and desire to use technology all the time. However, I found that dedicated users can come from different generation than the digital natives. Prensky (2001) has referred to a portion of this group of teachers as digital immigrants. His belief is the digital immigrant is any

person who came before the digital natives, who is beginning to learn about technology and has accepted the need to do so. He describes this group of individuals in this manner:

As Digital Immigrants learn—like all immigrants, some better than others—to adapt to their environment, they always retain, to some degree, their “accent,” that is, their foot in the past. The “digital immigrant accent” can be seen in such things as turning to the Internet for information second rather than first, or in reading the manual for a program rather than assuming that the program itself will teach us to use it. Today’s older folk were “socialized” differently from their kids, and are now in the process of learning a new language. And a language learned later in life, scientists tell us, goes into a different part of the brain. (Prensky, 2001, p. 2)

For the purposes of my research, I do not believe the *dedicated users* are what Prensky refers to as digital immigrants. Rather, the teacher I selected to represent this group of educators teaches computer-based courses and has been teaching for five years, one of which has been at Newlands High. Like the first teacher in this continuum, he is also very comfortable with emerging media technology. He said that, “The only reason I don’t want to die is that I’ll miss out on the new technology.”

We started the interview talking about the fact that people are claiming that technology is going to revolutionize schools. He is hopeful this claim will come to fruition. Since the courses he teaches are computer-based, he is used to seeing his students work at their own pace on the computers. He says, “The students can go as fast as they want. Some students perform better at a faster pace. If it takes too long, they get bored and drop off. If the opposite is true, it gives them more time to complete the course at their pace.” In this environment, he sees himself as the facilitator as he works to help students when there is a need.

Continuing with the discussion of how this teacher uses technology in his personal life, he made a few references to using cell phones and websites to stay in touch with his parents who live over 6,000 miles away. However, most of his comments related to how he utilizes all the technology at his fingertips in his classroom. When asked about a normal day for a student in his classroom, he keyed in on maintaining a relaxing atmosphere where students can work alone, or collaboratively, at their own pace. He has put all the study guides and tools needed for the course online so the students can access them when needed. When he was asked about the percent of students he felt had Internet access outside of school, he felt the numbers were nearly 80-90%. He feels students are better prepared for class when they are able to access the materials when necessary. For example, when a student is out for a long period of time, he/she is able to keep up with the other students from home if they have access to the Internet.

Earlier in the discussion, this teacher described himself as the “facilitator” for his students when they are in his classroom. When asked if he felt if it was more appropriate for teacher facilitation in his classroom versus a core subject like English or math, he was adamant with his response. He felt the days of standing in front of a class and lecturing for hours is only “allowing the students to go brain dead.” In his opinion, students aren’t active in their learning when teachers lecture, which places the burden of learning the material on them outside of the classroom. He admitted this was not easy for him at first. He worried that if he allowed the students to work at their own pace, they would not need him. He describes the discovery of how the students needed him by saying:

If these guys just sit here and read the material, what do you need me for? And then I found where I get enveloped in the situation is when kids don't understand. You're able to help guide them. You're able to help guide practical application, that's really where it's going to be useful to them outside of high school, is learning practical application.

The discussion then moved to the integration of technology in the school as a whole. When asked to comment on how often teachers in Newlands High integrate computer technology into their classroom instruction, he felt it was a case-by-case situation: "I've know some teacher who refuse; a simple thing as using a projector. I've seen some teachers say they don't know how to use technology and the just don't want to."

When he was asked if he brought his own technology to school to use in his classes, he acknowledged bringing his cell phone and laptop computer. He does not use his cell phone in class, however, because the students are not allowed, and he does not want to be a hypocrite. He did, however, acknowledge the fact that his students still attempt to text message during class time. The school's policy is to confiscate electronic devices if they are out in class without the permission of the teacher. He does not take the phones because he feels the students do it quickly and "it's away." He says:

I think personally, as long as it's not getting in the way of instruction, if it's not hindering your instruction or anyone else around you, as long as you're not spending all your time doing this—personally I don't really mind. You can't take technology; you can't take communication away from us since it's so ingratiated in our culture now. It is so a part of who we are. Point out a person without a cell phone on their hip now-a-days. And I'll show you a guy who doesn't have a job.

When is it okay for students and teachers to not follow school policy? This teacher seemed to feel using cell phones in class to make calls or send text messages was not appropriate. However, it appeared as if he felt there was not much to be done to stop this type of activity. Therefore, he is okay with it as long as it does not interfere with instruction. At the same time, he mentioned allowing the students to use MP3 players or their cell phones to listen to music through earphones as they work in class. It is his belief that when students are able to use their PMDs, they stay focused and motivated as they work at their own pace; why not allow them the freedom to do so?

He defends his decision by saying, "It's interesting to see it from a school where none of it was allowed to here where it's tolerated and it's actually at the teacher's discretion. They're gonna do it. So you can say it's not allowed, and you'll punish a bunch of kids." Leaving the decision to allow, or not allow the use of student PMDs to the discretion of the individual classroom teacher is another clear display of the conflict most teachers face when making decisions regarding technology.

The Cautious User

The term *cautious user* refers to the educators who tend to be skeptical about the benefits of technology and often find they do not have confidence in their abilities to effectively use it in their classrooms, or in their personal lives. The teacher I selected to represent this group of educators is currently a Strategic Reading and English 9 teacher, and has been in the teaching profession for 24 years. He has spent the last two years teaching at Newlands High School. Unlike the first two teachers, this educator feels he is neither comfortable nor uncomfortable with technology, but it did depend on the type of

technology. For example, he feels comfortable with using his computer when it comes to Microsoft Word, but he tends to feel less comfortable with anything beyond that when it comes to technology. However, he states that he is not beyond trying something new. He did say, "If I had time to practice with it and learn the ropes, then I feel okay with it.

Otherwise, not so much."

He believes he started using the Internet ten years ago, but he had dial-up service and was not able to watch video. Now that he has faster access, he still does not feel that he is into videos or other online capable tools. He says:

I'm not really into videos or things like that. I know that a lot of young teachers are, but I'm just not into that. I'm just not into Facebook. I'm not into YouTube. I just, like yesterday, I was trying to look up a poem by Gordon Parks called the Funeral, and instead I got a video of a clip called Band of Horses singing "The Funeral." And I watched it, but that wasn't what I was looking for. You know, so I'm just really not into that.

He has had some positive experiences with technology, but he specifically talked about using email and the portable document camera found in his classroom. He uses email to communicate with the parents of his students on a weekly basis, and he uses the portable document camera to facilitate his lessons. He had this to say about using the portable document camera:

That thing is great! 'Cause with the overheads, you know you had to write on the clear paper and all that. You have a book and you just open up and "hey, we're going to read a Blessing today." And you have it right if the kids don't have their books; it's up on the screen. Now, they are supposed to have their books, but if they don't, you don't have to worry about it.

Not long after sharing this information I asked if he used online social networking sites like Facebook, and he said no. However, he did share an attempt to implement a “Facebook” activity in a lesson about the Greek gods. As a part of the lesson, the students were to create a Facebook page, on paper, for a god/goddess assigned to them. He had one of the younger teachers take him to a Facebook page so he could see what they looked like. From there, he made a hardcopy template of a Facebook homepage and had the students design one of their assigned characters. I asked him if he was going to eventually venture into the Facebook community, and he said, “I have no desire. I mean, I’m not anti-technology. I just prefer to communicate with people face-to-face.”

We then moved to discussing how often he used technology in his classroom instruction. He felt he rarely used technology in his room because he and the students have to travel to the computer lab to have access to the internet. However, when I followed this up with how often he uses other technological devices besides the computers, he stated he uses his portable document camera and video projector every day. When we talked about how often other teachers in the building use technology, he felt they were using it very often. He felt that math and science teachers use InterWrite, but he felt they were subject specific. He went on to describe a time he tried to use technology to enhance a lesson by saying, “we were watching an excerpt from Romeo and Juliet, the movie. I was trying to start and stop it using a device, and it was so sensitive. That’s when I got frustrated.”

We moved into discussing any positive outcomes he could recall related to emerging media technology. At first, he spoke of a visit to another school in the area. He

said the students all had laptop computers and were Googling information during instruction. He referred to this situation as a “nightmare.” Then he mentioned an online tool called Citation Maker, which helped students create bibliographies while conducting research. He also mentioned being in favor of playing music during independent work because it helps to keep them quiet and on task. However, a few minutes later when I asked him to speak about any negative experiences associated with emerging media technology, he said by letting them listen to music, they spend more time looking for their favorite song, which keeps them from being on task.

While on the topic of negative experiences associated with emerging media technology, he also mentioned being fearful of being on camera and not being aware of it. He didn’t feel he would say anything inappropriate, but did not like the idea of being recorded without being aware of it. He said, “I’ve been in a situation at a previous school when we had an alert and the parents—you know, on one hand it’s good that the parents can talk to their kid to find out that they’re okay, but that really created all kinds of problems for personnel that were trying to lock down the school and make sure that they were safe.”

He went back to an earlier comment when thinking about other negative outcomes as a result of emerging media technology. He referred to the visit to the other school in the area and how the students were Googling while the teacher was teaching. The students were actually finding mistakes with what the teacher was saying. He was not as concerned about the fact that he might be wrong at the time because he feels we are all

fallible. What was upsetting to him was that the students were not paying attention to the teacher, they were already “going ahead.”

The Teacher Categories are Fluid

What I found from these case studies and the research as a whole is that at any given time, teachers could fit anywhere in the categories I have created. If you refer to the Venn diagram entitled “Teacher Categories” (see Figure 1), you can see a pictorial representation of the three different levels of teachers I have created to help make sense of what I am suggesting.

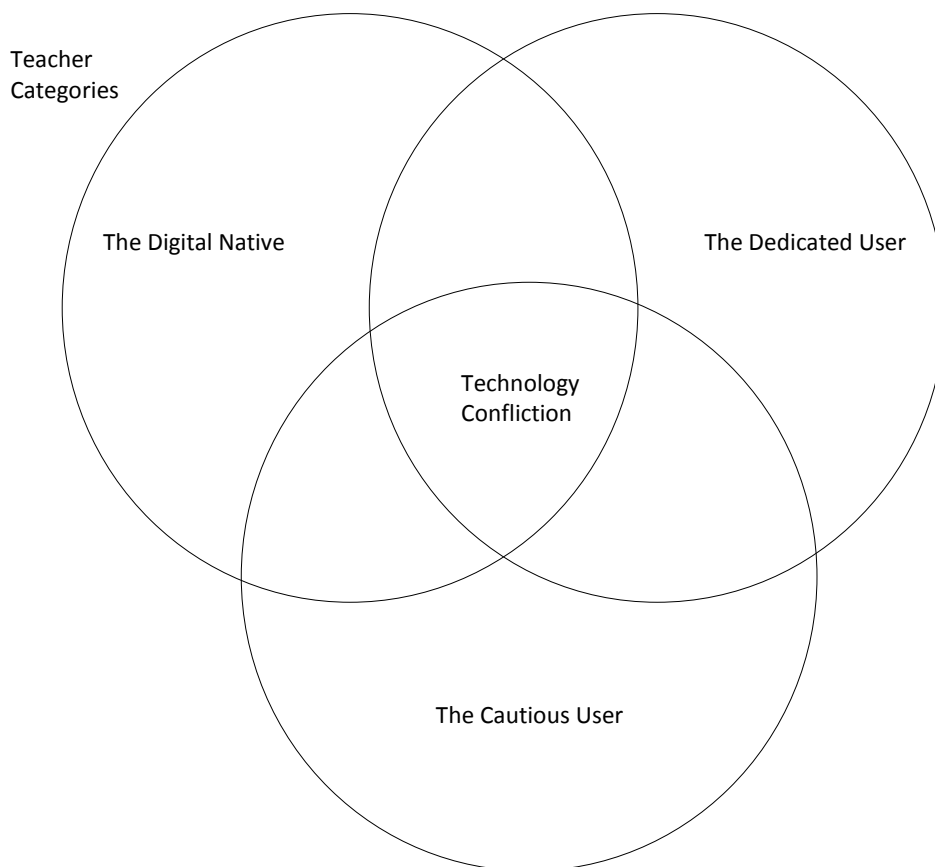


Figure 1. *Teacher Categories*

In this diagram, I have placed technology confliction in the center because this happens to be the characteristic each of the three teacher categories have in common. The data demonstrated that regardless of how the teachers feel about technology, they are all conflicted about how it should be used by the students in their school. Even the dedicated user and digital native felt there were times filters should be used to keep students from using the Internet inappropriately. The cautious user talked about his regret with ending the open-use policy because now his students are not able to use their MP3 players during independent practice.

This diagram also helps to display how each of the teachers can actually move from one category to the next, given the right circumstances. For example, the digital native could become a cautious user when planning to let his/her students use the computers because he/she wants them to use the Internet to do research, but is afraid they will go to inappropriate sites. Therefore, the students are told to do their research outside the classroom. The cautious user might plan a lesson with a dedicated user that involves the students doing PowerPoint presentations in a project that involves two different courses. In this case, the cautious user is not as intimidated because he/she is working with another educator who is comfortable with the technology.

It is important to note that I do not believe all teachers demonstrate their confliction with technology in the same manner. The cautious user is often uncomfortable with technology and is apprehensive about learning how to use it because he/she does not see technology as the most important issue to deal with at school. However, he/she does

recognize that technology is important to the students, so he/she is willing to work with colleagues to find ways to incorporate technology.

The digital native is more confident about using technology and is open to using it more to enhance instruction. However, these teachers are often new to the profession and are still learning how to manage classrooms. Having to deal with students who are using their PMDs inappropriately, and the fear that students may use the Internet inappropriately leaves them feeling conflicted about how and when to use technology effectively.

The dedicated user is someone who is confident in their abilities to use technology effectively. These teachers have been able to find ways to integrate technology into their lesson in a variety of ways, yet there is still some apprehension. What appeared to leave the dedicated user with conflicted feelings about using technology was the understanding that students can make poor decisions with the technology. They also seem to be frustrated by the way students are using PMDs during the school day.

One of the most astounding findings from our research was the fact that digital natives can often be as frustrated with technology as the cautious users. The same can be said about the dedicated users. While these teachers have grown up using technology in a variety of ways, they are as frustrated by how the students are currently using their PMDs, and feel there is a need to monitor how they are using technology at their school. For example, the digital native expressed concern with YouTube not being accessible at school because the district has blocked access. While she is frustrated, she also supports

this approach because she believes students cannot always be trusted to make good choices when using the Internet.

Implications of this Research

The staff members and students who participated in this research provided us with a glimpse into how emerging media technology is influencing their schools. In the following section I have provided suggestions I believe may help schools move forward as they work to integrate technology in their lessons.

There is a Need for Sustained and Meaningful Technology Staff Development for Teachers

The data strongly suggest that if technology is to become a viable tool used by teachers to prepare students for the twenty-first century, there is a considerable amount of training and development that must occur. Nearly all the staff members we interviewed at Newlands High made reference to either not knowing how to use the technology themselves, or how to integrate it into their lessons. Because of this lack of knowledge, teachers spoke of not using the technology because their students knew more about it than they do, and they did not want to look foolish in front of them.

The research also suggests that the lack of knowing how to use the technology appropriately may be a key factor in causing the dissonance I have spoken of throughout this study. While teachers understand that technology often keeps the students on task and can broaden the scope of their discussions, they also fear what the students could do with it without their supervision. This then causes the teacher to take control of the situation and dominate the use of any technology. In fact, I want to refer back to one of

the quotes I shared in Chapter IV. I would describe this teacher as a digital native. During our interview she made it clear to me that she believes technology should play an important role in the lives of her students. When she was asked if she would like her school to provide laptop computers for each of the students, she declined. Here is what she said:

Well, honestly part of it, for me, it's kind of an event to go to the computer lab and be in a separate setting. I think it's good for kids and I know my mom teaches at a school where they have all their own laptops and she has a lot of issues with them getting distracted by other things on the computers. And personally, I don't learn as well typing notes. I like writing notes and maybe if I typed them out later . . . So just from all of those personal experiences, I would prefer not to. But that's just me.

The thought of taking the students to the computer lab as an event is an interesting way for a digital native to respond to this question. If she is used to having technology at the tips of her fingers, why would she be more interested in having to take students to a lab as opposed to having it right there in the room? I think the answer to that question lies in her quote as well. She says she does not learn well typing notes, and likes to write them down. Like many teachers, she is teaching the way she was taught, which did not include computers.

This example provides a clear example of why training and staff development are essential to the survival of technological integration. Educators often have the same needs as the students. If we have dedicated users, digital natives, and conflicted users in our schools, what are we doing to capitalize on each of their experiences with technology? What are their individual needs and strengths, and how can we lean on each to create a

sense of comfort and confidence with using the technology? Davis (2009) has prepared a rubric schools can utilize to find out where their teachers are on the continuum of technology readiness. This could help inform the various staff development opportunities schools would need to seek out if they wish to successfully implement technology.

However, as one of the teachers said, the teachers would need time to “play” with the technology and ask questions, and not feel like the training was a one-time opportunity.

School Districts Need to Work with Teachers to Acknowledge and Address Technology Needs

One of the messages heard from the teachers in this study was that they need the cooperation from the school district to make the technology work in their schools.

Newlands High is one of the newest schools in its district and was constructed to be technology ready. Yet, there are a few issues that need to be addressed if there is any hope of teachers and students using the technology effectively. From the research, I have a few recommendations I believe need to be considered.

The first recommendation would be for school district officials to consider working with teachers to identify possible instructional Internet sites that are being blocked by filters. In our research, teachers told us sites like YouTube are being blocked, yet the students seem to be highly motivated when using them. One example given included a project where students recorded themselves acting out an assignment and posting it on YouTube. When they came to school to play it for their classmates, they were unable to access the site.

While I understand there is a wealth of inappropriate information accessed at this particular site, the teachers communicated that they wanted the professional latitude to monitor their students. In fact, one teacher was asked about the filter the school system uses to ensure those using the network are going to school appropriate sites. In this situation, district officials and policies are keeping teachers from using the technological tools they feel will meet the learning needs of their students. As a staff member who desires to use certain websites to supplement his instruction, he had this to say:

It's a hindrance. The media people downstairs showed me. There's a thing called Tubal, where you can actually convert files over and that's made it easier. But, yeah, I would say it's kind of a pain sometimes. A necessary one. But if you're using it the way it's meant to be used, it's kind of a problem.

Another teacher said she has attempted to use YouTube videos to increase the interest her students show when working on their course work. Since she is unable to access YouTube in her classroom because it is blocked by the filter, she has been forced to record the videos at home on a disc so she can bring them to school for her class. She said:

I know, it's ridiculous. TeacherTube is allowed which has some things. And I search that site when I know that this would be really good to show in a video. I mean, there's just a simple thing. Last year I remember showing, I think it was the food chain or something and these kids had put together this really funny video that made it really clear and would engage the students really well. And I couldn't show it. It was very frustrating. So I'll find things. That's why I go to the National Geographic site because they have a lot those 5 minute clips.

The second recommendation I think school systems need to consider is increasing the technical support they provide their schools. Teachers are expected to create and

implement lesson plans, grade papers, teach their classes, prepare their students for end of course exams, as well as many other duties. Expecting them to then be able to master the use of technology and maintain the hardware is too much. If schools were allocated a computer technician whose job it is to make sure the technology is working, teachers may be less inclined to worry about lessons failing due to computer hardware issues. During our research, there were lessons that fell apart only because the technology did not work. Teachers expressed to our research team their need to have confidence in the technology.

Once they have confidence in the technology, another crucial position they need to have is a computer curriculum specialist. As I mentioned, teachers are expected to be masters of their curriculum. Teachers go through a great deal of training and collaboration to prepare themselves for their students. A number of schools employ curriculum coaches or specialists who help teachers refine their practices and stay on top of the best teaching techniques available. If a computer curriculum specialist were at each school and could work with curriculum specialists as teacher training opportunities were being created, the possibilities of successful technology integration become more realistic.

The third recommendation I believe school districts need to address is helping teachers deal with students and their PMDs. The staff members in this study are so frustrated with student PMDs that they believe nothing can be done to prevent teachers from using it. According to our research, this situation is one of the major contributors to teacher confliction with technology. Bringing student, parent, and community groups together to discuss and agree on when and how student PMDs are used in schools is but

one suggestion school districts may consider. As the research team saw in our study, electronic device policies receive varied levels of support from classroom to classroom, which appeared to be problematic because students were not always certain where they could and could not use their PMDs. It is incumbent upon school district leadership to address how this issue can be resolved so teachers feel their voiced concerns are supported.

The last major recommendation school systems should consider is taking stock of where they are currently allocating resources. If most educators understand how vital emerging media technology is going to be to their students' futures, it should be reflected in the district goals and budgets. Schools cannot be given the responsibility of doing this on their own. The positions that I mentioned in the previous paragraph are major financial commitments, yet they are vital to helping teachers grow professionally with regard to instructional technology infusion. There is also the need to invest in hardware and software that allows each teacher and student to gain access to the technology.

Institutions of Higher Education Need to Better Prepare Future Educators to Effectively Integrate Technology

As you think about the three teacher categories I described earlier in this chapter, the digital natives are the most perplexing when I think about the use of instructional technology. By definition, digital natives have been using technology for most of their lives, so why are there not more examples of teachers from this category implementing technology in their classrooms? I believe this is because they are teaching their classes the way they remember being taught when they were in school. I believe one of the most

important ways to address this pattern is to change the post secondary experience students receive as they prepare to become educators.

As I think back to methodology courses I took as I came through college, I cannot say that I was introduced to any new technologies that impacted the way I taught my students. If we expect college students to utilize their technological skills they have acquired throughout their childhood, they are going to need to have support in their college courses. I understand professors at the university level may need support in making the changes necessary to create new courses for future teachers. Schools systems and universities should partner in an effort to change the methodology experiences student teachers experience so they can be prepared to meet the curricular and technological needs of their students.

Future Research

If I were given the opportunity to repeat this research in the near future, I would be interested in coming back to Newlands High to see if there have been any changes in how emerging media technologies are being used. The school system has written language into the strategic goals that speaks to increased technology for students, and the state has written curriculum geared toward the “twenty-first century learner.” With a change in administration at both Newlands and the school district, I would be interested in seeing how they work together, as was written in my recommendations on page 118.

I think an important study would be to take a group of teachers in either a subject or grade level, and provide them with the resources I mentioned above. They would be interviewed or surveyed beforehand to find out what their needs are, and then provided

the support needed to plan and implement instructional technology effectively. I would like to study the students involved in those teachers' classrooms and conduct interviews or surveys that investigate how the classes that use technology compare to those that do not. I believe this type of case study would be an incredible argument for gaining the support needed to effectively implement instructional technology.

Conclusion

In Chapter III of this study, I asked three questions about emerging media technologies, and their influence on teachers in one high school. What became obvious during the course of our research was that there are two different types of emerging media technologies teachers have to deal with on a daily basis: instructional and personal. Teachers believe that both of these technologies are vital, but they become conflicted about when and how they are to be used. What is even more difficult is that teachers have several other responsibilities to consider in a school day, and instructional technology often falls to the side. The student PMDs have become a nuisance to many of the educators who participated in our study. In their minds, PMDs are taking vital time away from their days as they work to enforce school and classroom rules. They also feel PMDs have impacted the integrity of testing because students are finding ways to use their cell phones to cheat.

As an educator and a father of two elementary aged children, I am interested in finding ways to use technology to further the educational experiences our students receive in our schools. This study has helped me to see the challenges our teachers face on a daily basis. They are working incredibly hard to prepare students for exams they

must pass in order to graduate from high school. With little to no emphasis on instructional technology integration coming from the federal, state, or local leaders, it is difficult to hold teachers accountable for any lack of technology usage.

I have been able to work in a school where technology was beginning to take root, and it is my belief that the teachers need to know how it will make their jobs easier. We had recently found that the grading program we were using at the time allowed teachers to post their grades online. Instead of insisting that all teachers use this feature, I asked for at least five volunteers. The teachers that wanted to give the program a try were trained and began using the online feature within days of our initial meeting. Parents and students quickly reacted positively to this and asked when all teachers would begin using it. Within one month of initiating the online progress reports, all teachers in our school were using the program and updating their grade once a week.

Imagine a school where the teachers have been given the training and support they need to implement an instructional technology initiative. Imagine now that those teachers have the confidence and skill to utilize the technology they have in a way that the students now speak of being engaged in their classrooms through tools like interactive white boards, digital laptops, and other technology devices. Teachers are speaking about how they can better utilize the knowledge their students have with regard to technology to better maintain equipment and to seek new ways to integrate technology into their lessons. This is what I believe can happen in a school if the district leadership, school administration, teachers, students and parents decided they were ready to make emerging media technologies an important and relevant part of their instructional program.

BIBLIOGRAPHY

- Ash, K. (2008, March 31). Districts weigh benefits and drawbacks of setting up student e-mail accounts. *Education Week*, 1-4. Retrieved April 23, 2008, from <http://www.edweek.org/ew/articles/2008/04/02/31email.h27.html>.
- Blanding, M. (2009, Winter). Thanks for the add: Now help me with my homework. *Ed. Magazine, the Magazine of the Harvard Graduate School of Education*, 29-33.
- Cambridge Advanced Learner Dictionary Online. (2010). *Conflicted*. [Online]. Retrieved February 23, 2010, from <http://dictionary.cambridge.org/define.asp?key=101733&dict=CALD&topic=doubt-and-ambivalence>.
- Christensen, C. M., Horn, M. B., & Johnson, C. W. (2008). *Disrupting class: How disruptive innovation will change the way the world learns*. New York: McGraw Hill.
- Coppola, E. M. (2004). *Powering up: Learning to teach well with technology*. New York and London: Teachers College Press.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. London and New Delhi: Sage Publications.
- Cuban, L. (1986). *Teachers and machines: The classroom use of technology since 1920*. New York: Teachers College Press.
- Cuban, L. (2001). *Oversold and underused: Computers in the classroom*. Cambridge and London: Harvard University Press.

- Cuban, L., Kirkpatrick, H., & Peck, C. (2001). High access and low use of technologies in high school classrooms: Explaining an apparent paradox. *American Educational Research Journal*, 38(4), 813-834.
- Davis, A. (2009). *Syncing up with the iKid: Portrait of seven high school teacher leaders transforming the American high school through a digital conversion of teaching and learning*. Ed.D. dissertation, The University of North Carolina at Greensboro, United States -- North Carolina. Retrieved February 17, 2010, from Dissertations & Theses @ University of North Carolina at Greensboro. (Publication No. AAT 3387590).
- Foltos, L. (2002). Technology and academic achievement. *New Horizons for Learning*, 9(1). [Online]. Retrieved February 23, 2010, from <http://newhorizons.org/journal/journal37.htm>.
- Geisert, P. G., & Futrell, M. K. (2000). *Teachers, computers, and curriculum: Microcomputers in the classroom*. Boston: Allyn and Bacon.
- Glesne, C. (2006). *Becoming qualitative researchers: An introduction*. Boston: Pearson.
- Linsky, M., & Heifetz, R. A. (2002). *Leadership on the line: Staying alive through the dangers of leading*. Boston: Harvard Business School Press.
- Friedman, T. L. (2007). *The world is flat: A brief history of the twenty-first century*. New York: Picador/Farrar, Straus, and Giroux.
- International Society for Technology in Education (ISTE). (2000). *National educational technology standards for students- connecting curriculum and technology*. Eugene, OR: U.S. Department of Education.

- Johnson, F. E. (2000). Social studies methods textbooks and computing technology: A call for integration. *International Journal of Social Education*, 15(1), 39-61.
- Lehman, S., Douglas, K. F., White, M. J., Horn, Christy A., & Bruning, R. H. (2001). *Teacher interaction: Motivating at-risk students in web-based high school courses*. *Journal of Research on Computing in Education*, 33(5), 1-19.
- Lessen, E., & Sorensen, C. (2006). *Integrating technology into schools, colleges, and departments of education*. [Online]. Retrieved February 3, 2010, from http://www.redorbit.com/news/education/450374/integrating_technology_in_schools_colleges_and_departments_of_education/.
- Levin, D., & Arafteh, S. (2002). *The digital disconnect: The widening gap between internet-savvy students and their schools*. *Pew Internet and American Life Project*, 1-30.
- Li, Q. (2007). Student and teacher views about technology: A tale of two cities? *Journal of Research on Technology in Education*, 39(4), 377-397.
- Ma, W. W., Andersson, R., & Streith, K-O. (2005). Examining user acceptance of computer technology: empirical study of student teachers. *Journal of Computer Assisted Learning*, 21(6), 387-395.
- McKenzie, J. (1999). *How teachers learn technology best*. Bellingham, WA: FNO Press.
- McNierney, D. J. (2004). *Case study: One teacher's odyssey through resistance and fear*. *TechTrends*, 48(5), 64-69.
- March, T. (2005). The new whatever, whenever, wherever. *Educational Leadership*, 63(4), 14-19.

Mason, C., Berson, M., Diem, R., Hick, D., Lee, J., & Dralle, T. (2000). Guidelines for using technology to prepare social studies teachers. *Contemporary Issues in Technology and Teacher Education [online serial]*, 1(1). [Online]. Retrieved September 23, 2009, from <http://www.citejournal.org/vol1/iss1/currentissues/socialstudies/article1.htm>.

Means, B., Penuel, W. R., & Padilla, C. (2001). *The connected school: Technology and learning in high school*. San Francisco: Jossey-Bass.

Muffoletto, R. (2001). *Education and technology: critical and reflective practices*. Cresskill, NJ: Hampton Press, Inc.

Mullen, C. A., Kealy, W. A., & Sullivan, A. (2004). *National technology standards for K-12 schools: A case study of unresolved issues in public relations*. *Journal of School Public Relations*, 25, 340-363.

Nicholson, I. (2007). *Leadership in the 21st century: The new visionary administrator*. [Online]. Retrieved July 2, 2009, from www.blackboard.com/k12/education21c.

North Carolina Department of Public Instruction (NCDPI). (2007). *Making the grade*. [Online]. Retrieved June 20, 2008, from <http://www.ncpublicschools.org/docs/parents/resources/makingthegrade/2007winter.pdf>.

Peck, C., Cuban, L., & Kirkpatrick, H. (2002). High tech's high hopes meet student realities. *The Education Digest*, 67(8), 47-54.

Peck, C. M., & Mullen, C. A. (2008). New media, new voices: An unprecedented 21st-century school public relations challenge. *Journal of School Public Relations*.

- Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5), 1-6. MCB University Press.
- Prensky, M. (2005). Engage me or enrage me: What today's learners demand. *Educause Review*, 40(5), 60-65.
- Prensky, M. (2006). Listen to the natives. *Educational Leadership*, 63(4), 8-13.
- Richardson, W. (2006). *Blogs, wikis, podcasts and other powerful web tools for classrooms*. Thousand Oaks: Corwin Press.
- Russell, M., Bebell, D., O'Dwyer, L., & O'Connor, K. (2003). Examining teacher technology use: Implications for preservice and in-service teacher preparation. *Journal of Teacher Education*, 54(4), 297-310.
- Sarrafzadeh, A., Alexander, S., Dadgostar, F., Fan, C., & Bigdeli, A. (2008). "How do you know that I don't understand?" A look at the future of intelligent tutoring systems. *Computers in Human Behavior*, 24(4), 1342-1363.
- Stansberry, S. L., & Kymes, Angel D. (2007). Transformative learning through "teaching with technology" electronic portfolios. *Journal of Adolescent and Adult Literacy*, 50(6), 488-496.
- Tallman, L. Y. (2004). *Are the mice working?: Computers and school reform*. *Mind Culture & Activity*, 11(4), 307-311.
- Tapscott, D. (2009). *Grown up digital: How the net generation is changing your world*. New York: McGraw Hill.

- Thompson, A. D. (2005). *Scientifically based research: Establishing a research agenda for the technology in teacher education community*. *Journal of Research on Technology in Education*, 37(4), 331-337.
- U. S. Department of Education. (2002). *Technology in schools: Suggestions, tools and guidelines for assessing technology in elementary and secondary education* (NCES 2003-313). Washington, DC: National Center for Educational Statistics.
- Wald, R. (2004). Review of the Book *Oversold and underused: Computers in the classroom*. *Radical Teacher*, 66, 37-40.
- Warschauer, M. (2006). *Laptops and literacy: Learning in the wireless classroom*. New York and London: Teachers College Press.
- Willoughby, T., & Wood, E. (2008). *Children's learning in a digital world*. Malden, MA: Blackwell Publishing.
- Wolcott, H. (1994). *Transforming qualitative data*. Thousand Oaks: Sage Publications.
- Yang, S. C., & Huang, Y-F. (2007). A study of high school English teachers' behavior, concerns and beliefs in integrating information technology into English Instruction. *Computers in Human Behavior*, 24, 1085-1103.

Appendix A

Staff Participant Interview Protocol

Examining the Impact of Emerging media Technology on High Schools
Dr. Craig Peck, Dr. Carl Lashley, Dr. Carol Mullen, and Mr. John Eldridge, EdS

Staff Participant Interview Protocol

Date _____

Name _____

School _____

Position _____

Gender _____

Race/Ethnicity _____

This interview is part of a study that investigates how increased student access to emerging media technology—including school computers, mobile devices like cell phones, and video-posting and social networking Internet sites—is affecting the high school educational experience. I am going to ask you some questions related to this topic.

You do not have to answer any of the questions I ask if you do not want to. You can choose to exit the interview at any time you wish with no personal consequences to you. You can also ask me any questions you like about the interview or the research study.

Any questions before we begin?

I. Personal Technology Use Information

1. What is your personal comfort level with emerging media technology (*very comfortable, comfortable, neither comfortable nor uncomfortable, uncomfortable, very uncomfortable*)? Please explain further.
2. When did you begin using media technology like cell phones and the Internet? What were some of your first experiences using media technology?
3. Have you had any positive experiences using media technology in your personal life? If so, what were they?
4. Have you had any negative experiences using media technology in your personal life? If so, what were they?

5. What are some of the media technology that you use today? Do you use this media technology at home or elsewhere?
6. What are some of the Web sites that you use? What are your favorite ones and why?
7. I am going to mention some media technology in use today. Please let me know if in the **last week** you have used or accessed the following, whether at school or somewhere else:
 - a. Cellular Phone
 - b. Digital Camera
 - c. Mobile Internet Device
 - d. "I-Pod" or MP3 Player
 - e. Video sites like "You Tube"
 - f. Networking sites like "MySpace"
 - g. "Google" or other search engines
 - h. Email
 - i. Text Message

II. Emerging media Technology in Your School

1. How often, if at all, do you integrate computer technology into your classroom instruction (*very often, often, sometimes, rarely, never*)? Please elaborate, especially in regard to how you and students use the technology during the lessons.
2. In general, how often do teachers in your school integrate computer technology into classroom instruction (*very often, often, sometimes, rarely, never*)? Please elaborate.
3. Do you bring any of your personal emerging media technology to school? If so, what media? When do you use it if you use it on the school campus?
4. In general, how many students in your school use emerging media technology during the school day: *all, most, some, few, or none*? Please explain.
5. Are there any ways that student use of emerging media technology during the school day is having a positive effect in your school? If so, how?
6. Are there any ways that student use of emerging media technology during the school day is having a negative effect in your school? If so, how?
7. What suggestions do you have for ways that your school community might effectively address increased student use of emerging media technology during the school day?

III. Concluding Questions

1. Do you have anything else you would like to add?
2. Do you have any questions for me about this interview or the research study?

Thanks. If at any time during this research study you want to withdraw from it, you have the right to do so with no personal consequences to you.

I appreciate your participation in this study.

Appendix B

Student Participant Interview Protocol

Examining the Impact of Emerging media Technology on High Schools
Dr. Craig Peck, Dr. Carl Lashley, Dr. Carol Mullen, and Mr. John Eldridge, EdS

Student Participant Interview Protocol

Date _____

Student Name _____

School _____

Grade _____

Gender _____

Race/Ethnicity _____

This interview is part of a study that investigates how increased student access to emerging media technology – including school computers, mobile devices like cell phones, and video-posting and social networking Internet sites – is affecting the high school educational experience. I am going to ask you some questions related to this topic.

You do not have to answer any of the questions I ask if you do not want to. You can choose to exit the interview at any time you wish with no personal consequences to you. You can also ask me any questions you like about the interview or the research study.

Any questions before we begin?

I. Personal Technology Use Information

1. What is your age?
2. At what age did you begin using media technology? What were some of your first experiences using media technology?
3. Have you had any positive experiences using media technology in your personal life? If so, what were they?
4. Have you had any negative experiences using media technology? If so, what were they?
5. What are some of the media technology that you use today? Do you use this media technology at home or elsewhere? Is this media technology considered yours or your parent or guardian's?

6. What are some of the Web sites that you use? What are your favorite ones and why?
7. I am going to mention some media technology in use today. Please let me know if in the **last week** you have used or accessed the following, whether at school or elsewhere:
 - a. Cellular Phone
 - b. Digital Camera
 - c. Mobile Internet Device
 - d. "I-Pod" or MP3 Player
 - e. Video sites like "You Tube"
 - f. Networking sites like "MySpace"
 - g. "Google" or other search engines
 - h. Email
 - i. Text Message

II. Emerging media Technology in Your School

1. You were identified by staff at your school as an enthusiastic user of emerging media technology. Does that description apply to you? Why or why not?
2. In general, how often do teachers in your school integrate computer technology into classroom instruction (very often, often, sometimes, rarely, never)? Please elaborate.
3. Are there any classes that you have that you feel the teacher does a really good job integrating technology into the lessons? If yes, please describe.
4. Do you bring any of your personal emerging media technology to school? If so, what media?
5. Do you ever use or access personal media technology at school? Why, when, and how?
6. In general, how many students in your school use personal emerging media technology during school: *all, most, some, few, or none*? Please explain.
7. Are there any ways that student use of emerging media technology during the school day is having a positive effect in your school? If so, how?
8. Are there any ways that student use of emerging media technology during the school day is having a negative effect in your school? If so, how?
9. What suggestions do you have for ways that your school community might effectively address increased student use of emerging media technology during the school day?

III. Concluding Questions

1. Do you have anything else you would like to add?
2. Do you have any questions for me about this interview or the research study?

Thanks. If at any time during this research study you decide to withdraw from it, you have the right to do so with no personal consequences to you.

I appreciate your participation in this study.

Appendix C

Observation Protocol

Examining the Impact of Emerging media Technology on High Schools

Observation Protocol

Date/Time _____ School/Location _____

Teacher/Staff _____

Provide a visual description of the space observed.

	<p><u>Symbols</u></p> <p>S Student</p> <p>T Teacher</p> <p>M Mobile Device</p> <p>I MP3 player</p> <p>L Laptop Computer</p> <p>D Desktop Computer</p> <p>Draw a rough sketch of setting. If device is in use at any time by student, circle the appropriate letter and note time.</p>
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General Description:

How were students using emerging media technology? How many students used each device?

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