

EXAMINING PARENT-TEACHER COMMUNICATION IN SCHOOL SYSTEMS
THROUGH THE USE OF EMERGENT TECHNOLOGIES

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DEDICATION

I dedicate this dissertation to my mother, Maria Trevino. Although she never had the chance to go to college, she instilled in me a deep and abiding love for the process of education. Even though I have had my struggles through this process and sometimes wondered if I would ever complete this journey, she encouraged and pushed me to continue this process. Without the lessons imparted by her, I would not be here doing this work today. Thanks Mom.

I also dedicate this work to my son, Joshua Trevino. In him I see the future – an unlimited potential to make a change in the world. He is and always will be the single greatest achievement of my life. I want to inspire him to greatness. I want to instill in him the same deep and abiding love for education that was instilled in me. I want to leave him something to remember me by. Although we may occasionally butt heads, as parents and teenagers always do, I want him to look back on this document one day and know that in my heart of hearts, he will always be the inspiration for everything I accomplish.

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ABSTRACT

EXAMINING PARENT-TEACHER COMMUNICATION IN SCHOOL SYSTEMS THROUGH THE USE OF EMERGENT TECHNOLOGIES

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Technology has become a part of the fabric of the lives of people, whether it be communicating with a loved one on the other side of the world or paying a utility bill via the Internet. Most people have experienced some level of technology integration into their life. An inescapable rite of passage for most people in developed countries is the requirement to attend some type of formal education. People carry memories of elementary, middle, and high school with them for the rest of their lives, whether good or bad. At a certain point, people choose to become parents and send their children to school. This research focuses on an aspect that has proven problematic between schools and parents – effective communication.

The goal of this exploratory study was to determine the progress of social networking system use in schools using themes derived from the Concerns

Based Adoption Model developmental stages to determine the levels of interest and comfort with the use of this system. Specifically, Facebook and Twitter are being examined as tools to facilitate parent-teacher communication in an effort to increase parental engagement in the education process. The qualitative research was conducted over a one year period and included group and individual interviews which were used to gauge perceptions, beliefs, and expectations of the participants.

The sample population consisted of educators, administrators, and parents from school districts in the Central Texas region. It was comprised of couples and individuals and attempted to span socio-economics and race. Once the primary data were gathered, an analysis was conducted to identify challenges that educators and parents faced. The survey instrument was available to participants for a six month period and individual and group interviews were conducted over a 4 month period.

The final analysis concluded that certain issues did confound the use of social networking technologies, but that those issues should not hinder the use of these technologies to improve parent-teacher communication. Parents and teachers acknowledged the need to communicate more effectively and believed that the use of technology might provide a solution if used properly. Educational institutions and districts would be well served to examine the impact of social networking technologies for educational communication while seeking ways to navigate the complex social-political aspects of the debate. Further study is required and while there are no clear answers, this research indicates that further

exploration of the topic must be conducted in greater depth to fully understand the implications of using social networking systems in schools.

CHAPTER I

INTRODUCTION

Effective communication and transparent processes have long been key elements in establishing productive, beneficial, and successful relationships. Bauch (1987), a Vanderbilt University educational researcher, believed that introducing effective communication principles into the field of education via a technological delivery method would produce an increase in engagement between educators and parents in rural Georgia schools. Communication via technological means was the driving force for a late 1980s research study with the objective of increasing parental engagement through the use of a phone messaging system that would provide messages to parents informing them of important events and classroom assignments. Bauch's study revealed that there was a correlation between increased parent-teacher engagement and improved student participation and performance. It was the improved communication practice that was the key to Bauch's findings and the groundwork for the creation of the Transparent School Model (1989). Ultimately, the work conducted in Georgia saw an improvement in performance for children in rural Georgia schools. Bauch envisioned a future in which advanced technologies would promote even more effective communication between educators and parents.

Despite his successful findings, school systems have yet to fully embrace the adoption of advanced technologies to communicate with parents (Cuban, Kirkpatrick, & Peck, 2001; Zhao & Frank, 2003). Therefore, the goal of this dissertation is to examine the current impact of emergent technologies on parent-teacher engagement and communication and the impact of various personal and socio-economic factors on the use technological resources.

The key purpose of this exploratory research is to find a way to incorporate educational communication via Facebook or Twitter into the daily information streams of parents, thereby improving parent-teacher communication by utilizing existing free systems of communication to share information. The concept of information streams is not new, with Barrett and Maglio (1999) stating “an information stream conveys data from an information provider to an information consumer “ (p. 1). According to the Pew Internet and American Life Project (2009, 2011) research indicated 50% to 80% of Pew Internet and American Life Project survey respondents had adopted some form of technology that could be used to increase communication with others. The findings also detailed usage patterns related to social networking technologies, email, and other communication software for technology owners along clearly delineated lines of gender, age, educational attainment level, and socio-economic status. By combining the Pew survey findings with the concept of information streams and a desire by some parents and teachers to increase communication and engagement practices, a need is realized requiring the exploration of social

networking technologies as viable tools to create an information stream between parents and teachers.

In this study I hope to explore the beliefs and perceptions of parents after the proposal is made to use social networking technologies to facilitate more constructive parent-teacher communication via the creation of new information streams of data. Beyond this, I hope to have educators recognize the value of utilizing these technologies for communication purposes and capture their beliefs and perceptions about this innovation. Sims (1998) believes that technology changes the way people interact based on the nature of the technology, the state of interactivity, and the belief that those with interactive products may consider those products to be superior to others. Technology must also be effective and relevant to a particular need or it can detract from the learning environment. In this case, the utilization of existing social networking technologies to tie into existing data information streams may produce increased parent-teacher communication while decreasing the amount of work needing to be done to communicate assignments and classroom expectations. As parents begin to accept educational communication as a part of their already existent information stream, they will leverage that knowledge in a way that makes them more engaged in the educational process without needing to burden a teacher with unnecessary communication. Providing parents with specific assignment-related information focuses attention on that issue and reduces superfluous conversation that can result from a parent calling or meeting to discuss issues related to their children. This creates a leaner communication model with a higher degree of

efficacy. Of course, this cannot be positively guaranteed, as there are other factors influencing communication, be they social, political, technological, or economic.

This study also examined other factors affecting the use of technology for communication purposes. The Pew Center (2010) provided data indicating that age, gender, race, financial status, parenting status, and education level could potentially impact technology use. Built into this research were questions designed to determine if these factors that impacted general technology use would have the same impact on technology use for education related communication. This research attempted to understand the impact, if any, of these particular variables on the perceived communication gap problem. Each of these issues have been documented in some form or another in various scholarly journals, but this research hopes to identify beliefs, feelings, and perceptions of the application of social networking systems via a Concerns Based Adoption Model (CBAM) stages of concern questionnaire and follow-up interviews. Ideally, this research hoped to shed some light on just how these factors impacted educational communication via the use of social networking systems.

Ultimately, the goal of this exploratory research was the realization that critical educational information could be shared with parents, thereby increasing parent-teacher communication, via the use of social networking technologies to plug assignment and work related data into existing information streams. This would reduce unnecessary communication while increasing overall parent-teacher engagement. This informational model suggests that critical information

regarding assignments, projects, and homework would be relayed more quickly and effectively via social networking system than via classroom handouts or written agenda entries. Parents would be engaged in the process of their children's academic lives, knowing what needed to be done, when it needed to be done, and the guidelines for the work. Conversation not pertinent to a child's academic development would also be reduced. Communication would be more direct and to the point with a stronger focus on providing parents with information critical to the success of their children.

It is important to note that this system would not alleviate all communication problems that exist between parents and educators. Several concerns come to mind when discussing technological innovations: access to technological resources; safety and security; and effective use of the technology. The stark reality is that some parents in low socio-economic households do not have access to technology at this time. However, as the Pew report (2009) shows, that gap is closing and more people are gaining access to technological resources that were heretofore unavailable to them, especially as technology becomes more readily available for the average user. Whether it is an internet enabled device, a work computer, friend's computer, or technology available for public use at a library or other public or private institution, people are gaining access to technological resources on a regular basis. Furthermore, Borsook and Higginbotham-Wheat (1991) state that the computer's potential for interactivity sets it apart from all other instructional devices, indicating a practical use and need for this technology. An increased adoption rate and the fact that computers

are highly effective instructional and learning tools support the view that the gap is closing between people with access to technology and those without (Straub, 2009).

There are also security and safety concerns to consider when it comes to the use of technology, especially in an educational setting (Gordon, Loeb, & Lucyshyn, 2003). Personally identifiable student information must be kept from public eyes as the information pertains to minor children and that population is afforded protection under federal law. Thus, the process of using technology to communicate with parents will need to be guided, nurtured, and developed with rigid guidelines to ensure the safety and security of minors' personal information. Issues of access and security and the potential for bureaucratic delays in developing specific guidelines and practices to govern technology use in school systems are always present. However, these issues can be successfully managed with careful planning and strict controls over the release of information.

Modern advancements in hardware and software now allow educators to communicate in ways never before dreamed possible and that power should be harnessed, especially as the ubiquity of hardware solutions such as iPhones and iPads and software solutions such as Facebook and Twitter continue to increase. Although there are concerns, the potential benefit seems to outweigh the possible risks if a program is implemented in a disciplined and effective manner (Byrom & Bingham, 2001). It is not an unreasonable or impractical idea to leverage existing free technologies like Facebook and Twitter to improve parent-teacher relationships, communication, and engagement. At the very least, it is

prudent to examine the situation to determine whether a program utilizing emergent technologies can overcome potential problems and be successfully implemented to improve parent-teacher communication and engagement.

Parent-Teacher Communication

A critical aspect of this research rests in the examination of parental engagement in the educational process. Parental involvement is necessary for improved student success in the classroom, as evidenced by numerous studies that show parental involvement as a critical component to children's success (Clark, 1983; Kagan, 1984; Bloom, 1985; Henderson, 1987; Dornbusch & Ritter, 1988; Barton, Drake, Perez, St. Louis, & George, 2004; Harris & Goodall, 2007). Historically, middle- and upper- income parents have been able to communicate with teachers and participate in the educational lives of their children with more ease (Chavkin & Williams, 1989). School systems continue to face challenges in building effective communication practices with lower income parents due to the limitations faced by that demographic group and their specific burdens (i.e., less flexible work schedules, multiple jobs, etc.). Research indicates that low income parents have been either unwilling or unable to participate in traditional parent involvement modes (McLaughlin & Shields, 1987, as cited in Chavkin & Williams, 1989, Weiss, Mayer, Kreider, Vaughan, Dearing, Hencke, & Pinto, 2003).

This is not to suggest that low income parents do not want to participate in the educational development process of their children. In fact, the opposite is true. Chavkin and Williams (1989) found that 97% of parents in their study showed interest in helping their children attain the best education possible. The

study revealed that the desire to actively participate in a child's educational attainment does exist. However, issues affecting low income parents were more difficult to overcome than issues affecting mid- to high- income parents. The amount of time spent working *and* income earned were significant factors in a parent's ability to participate effectively in a child's academic endeavors (Chavkin & Williams, 1989; Weiss, et al., 2003). Their research was best summed up in one sentence, "Working parents do not have time to be involved in school activities." (Chavkin & Williams, 1989, p. 20).

A study by Miretzky (2004) "came out of an interest in what seemed to be a lack of opportunity for direct and meaningful parent-teacher interaction and the implications of this deficiency." (p. 815). Similar to the findings of Chavkin and Williams (1989), Miretzky (2004) found that parents were not only interested in their children's education, but considered teachers to be an integral part of the process, even suggesting that children spend just as much time with a teacher as they do with a parent. Miretzky's findings are incredibly similar to the Chavkin and Williams study despite being conducted nearly 15 years later. This indicates that the desire to communicate has not diminished over time. However, there was a pointed admission from a respondent in the Miretzky (2004) study:

I think there are a lot of teachers who aren't interested in establishing a relationship with the parents of the students they teach, or the parents of the students in the school. There is a separation. 'This is my job . . . this is not my life.' (p. 816).

While this is known anecdotally, it is rare to find such a directly candid revelation from a respondent. This is the belief of a professional educator that has unique insight into the feelings and beliefs of the teachers he or she works with.

Educators do not want to overextend themselves by becoming engaged in relationship with parents even though parent-teacher relationships have been shown to be beneficial to students in the long term (Clark, 1983; Kagan, 1984; Bloom, 1985; Henderson, 1987; Dornbusch & Ritter, 1988; Weiss, et al., 2003). The belief that increased communication may interfere with personal life is a factor impacting parent-teacher relationships.

The dynamics of this situation are profoundly complex. Some parents regularly attempt to communicate with teachers about their children's academic well being. Others want to communicate with teachers, but are hampered by their economic status, essentially being deprived of the time necessary for communication because of the need to work longer hours. Others are simply not provided access for reasons not related to time or economics, potentially suggesting system issues preventing communication. There are educators who actively want to encourage parental participation, but face the unenviable task of finding ways to encourage communication equally among all parents. Lastly, you have teachers who believe that they simply must do a job and not dedicate more personal time to the task as it would interfere with their lives or create more work in the classroom (Miretzky, 2004). This is clearly a complicated matter with many factors impacting outcomes.

Technology as a Tool

As this dissertation examines the implications of using social networking technologies to create effective avenues of communication between parents and educators in school systems, it becomes important to understand the role of technology in this communication process. Examining the evolution of technology over the last 40 year is necessary to understand how Western society has arrived at this point and why the concept of tapping into information streams is viable and recommended.

Advancements

Advanced communication technology fundamentally shifted the way information flows between points and how information is exchanged between people (Ess & Sudweeks, 2001). Advancements in connectivity developed to the point where data could be communicated almost instantly on a widely based global scale. What was once reserved for universities, corporations, and government entities is now commonplace among the general population. Technological advances in the areas of computer hardware, software, and wired and wireless communication networks have made the world a much smaller place and allowed for a more rapid and free exchange of ideas, conversations, information, and knowledge.

This explosion of technological advancement led to the development of several new technologies that have dramatically improved the way humans communicate. During the first decade of the new millennium, emergent technologies provided people with tools that revolutionized human

communication. Past methods of communicating information were slowly being abandoned, evidenced by the fact that the United States Postal Service had been and continues to be posting record revenue losses due in part to the massive shift to electronic mailing (USPS, 2009). Facebook has over 800 million active users communicating daily (Facebook, 2011). Technology has taken root in all sectors of everyday life. Brick and mortar retailers have had to change business models to cope with the encroachment of electronic retailers (Tapscot, 2008). Technological security services are in high demand to protect electronic information, reflecting the fact that this is not a passing phase, but the new paradigm by which countries, militaries, societies, etc., share vital information. Technological progress continues to reshape the way people communicate and carry out their lives.

While not all persons in the world have access to technology at this point in the global development process, the disparity between technological “haves” and “have not’s” is closing, albeit with guarded results. According to research conducted by Warschauer (2004), a small, poor Irish town had been the recipient of a technology grant from one of Ireland’s largest telecommunication companies, Eircom. Warschauer (2004) stated that:

Advanced technology had been thrust into the people’s hands with little preparation. Training programs had been run, but they were not sufficiently accompanied by awareness programs as to why people should use the new technology in the first place. And, in some instances, well-

functioning social systems were disrupted in order to make way for showcase technology. (p. 4-5)

Warschauer's research indicated that a global technological push was being made to close gaps between those with access to technology and those without. However, Warschauer (2004) noted that caution was necessary as the inclusion of technology in new communities had to be closely monitored to ensure that the technology was beneficial to the community. As Warschauer (2004) showed, technology once reserved for the elite was becoming common place among the general population. A parallel between Warschauer and this research could be drawn in that a need for the proper adoption, implementation, and training of educators and parents exists so that the adoption of existing technologies could be beneficial to parent-teacher communication. Improving communication practices without complicating educational processes is critical to this research.

Beyond providing access to economically challenged people, there was another aspect of technology needing recognition. Internet access, which was previously considered discretionary (i.e. non-essential), is now a built in part of the devices people regularly use thanks to advancements in technology design and manufacturing. Cellular phones are a prime example of the phenomena. As cellular phones became an integral part of society, the added benefit of being able to use the Internet on the same device was recognized and developed by technology companies. This gave people abilities and access that they did not previously have. The most obvious of these advancements were the Blackberry, iPhone, and Android devices brought to market. Each of these Internet-enabled

smart phones packed the same amount of computing power into a handheld, pocket-sized device that was, at one time, available only in a full sized desktop computer, with the added benefit of also being personal data organizers.

Computing, the Internet, and Social Networking

For the last 45 years, technological capability has been doubling approximately every two years, following Gordon Moore's concept of technological development (Moore, 1965). Despite its age, Moore's Law continues to represent the current rate of innovation and technological development (Thompson & Parthasarathy, 2006). Although the physical limits of some technological processes are expected to be reached by the year 2020, development of new technologies and methods of computing continue to move the basic tenants of the law forward (Intel, 2010). The continued evolution of hardware development processes has led to increased advances in software solutions and communication processes. This driving force revolutionized the way people computed and communicated in the modern world. Advancements in the last 20 years produced changes in technological capabilities that have forever altered the way people communicate information, compute data, and live their lives.

Computers

In 1993, computer users were introduced to the first Intel Pentium processor (Intel, 2010). This evolutionary step forward in computing ability would be the beginning of advanced home computer processor development. Technological development over the last 15 years led to computing systems that

were increasingly smaller and more powerful than previous versions, culminating with fully functioning computers in a small hand-held form factor. This leap made it possible to make websites and software platforms portable. Portability of computing power became the new frontier for many companies and it led to the creation of the modern day iPhone, iPad, and related devices.

Standardized User Experience. The advent of advanced processors and new graphics technologies led computer software makers to realize the importance of a standardized, ubiquitous interface. Bill Gates delivered Windows 95 with features that took the work of Douglas Engelbart, who created the first mouse driven graphical user interface, and made the interface even easier to use with the now familiar start menu function of Windows and Linux operating systems (Hooper, 2007). Beyond this, software suites became standardized, with the familiar file, edit, and view menus seen at the top of most programs. This design feature paved the way for more standardization amongst software developers laid the groundwork for existing social networking systems standardized interface.

Personal Digital Computing Devices. Apple introduced the Newton, the first personal digital platform in 1992 (Hormby, 2007). This device, an early precursor to the iPhone and iPad, took common computing tasks and placed them in one handheld device that offered portability that could not be matched by other devices at the time. Nokia Corporation later introduced the first cellular phone that included similar functionality as the Newton. This was the birth of the first smart phone (Nokia, 1996). From that point forward, manufacturers worked

to produce more complex and powerful devices. Each passing year saw improvements in cellular network technology and data transfer rates. Development cycles fed each other, with advancements in data transfer rates leading to more advanced hardware and more advanced hardware leading to further advancements in data transfer rates. The culmination of this technological evolution was and is the modern day iPhone, introduced in 2007 (Honan, 2007), and Android operating system powered devices such as the Nexus One, introduced in 2010 (Mies, 2010; Mick, 2010). Both these devices provide cellular phone service, computing capability, large amounts of computer storage, and Internet capability in an ultra small form factor mobile platform.

Software makers, large and small, realized the potential of these devices and created a variety of mobile applications to run on these systems. While not signaling the death of the desktop or laptop computer, these devices presented a shift in the way people accessed their personal information streams. People made phone calls, surfed the Internet, and carried out daily computing tasks anywhere they wanted. Text messages and electronic mail was sent on a moment's notice; airline reservations were being booked while walking the dog in the park; and bank accounts were checked before making purchases to ensure funds were available. People could plug into information streams simply by having such a device.

The Internet

With the development of computers and personal digital computing devices came the development of the medium by which information was shared

globally. The Internet evolved from a few thousand websites that were strictly the province of the technologically and financially elite to a globalized tool for people. Friedman (2000), as quoted by Amichai-Hamburger (2002), related a discussion with his friend, Rabbi Marks, in which the Rabbi equated the Internet to the Tower of Babel - the Internet was and is a new universal language bridging differences at unthinkable speeds. In short, people had the ability to share information instantly and globally.

The speed at which volumes of information were being shared was astounding. To put the progression of Internet speeds in perspective, an 8 gigabyte (Gb) high definition movie would have taken approximately 26 days to download on a 1995 era first generation Internet connection. That same file would take 11 minutes to download on a circa 2010 modern day 100 Megabit per second (Mbps) system and just four tenths of a second if utilizing the most advanced corporate technologies available in 2010 (Summersault, 2010).

Advancements in how people accessed data evolved due to increased market competition and consumer demand and the need for immediate access to information. Computers that were once plugged into a wall with a cord were now wirelessly connected. Internet connections which could only be found in homes were now common on mobile phones. In the first decade of the new millennium, the nature of computing and data access changed the way the people communicated and shared information (Ess & Sudweeks, 2001).

People in developed countries now lived in a world that was populated with desktop and laptop computers, netbooks, smart phones, and the ubiquitous

iPhone. As these devices developed and advanced, so did the software running on the systems. With each new computing device, software was upgraded and advanced to make it easier to use and more effective. Once again, the nature of computing was changed, allowing people to utilize technologies that connect people across the globe. Global communication improvements revolutionized how electronic mail, message boards, online collaborative meetings, and texting were used. In the time it took to make one phone call, an e-mail or text message could be sent to an unlimited number of people asking them to participate in a discussion. The only limit to data transfer was the speed of any given network and the speed at which a person typed the information into a device. News and information acquisition became instant. This ability to almost instantly relay information was at the heart of this research. Communicating academic expectations to parents was not only plausible, but completely viable given that people already used information streams due to all the technological advancements that existed in the world.

Social Networking

Technology developers were not satisfied with the advancements in hardware for communication purposes, so social networking web sites were born. Social networking websites were first developed and deployed in 2002 and were defined as:

Web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their

list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site. (Boyd & Ellison, 2007).

This concept was new and innovative and positioned itself as a means to electronically connect friends together in ways that had never been done before. Society soon transcended the era of electronic mail, traditional chat rooms, and text messages and moved into the Facebook and Twitter era. This information delivery method proved incredibly successful, changing the very nature of how people communicated and engaged others.

Friendster. In the spring of 2002 Jonathan Abrams decided to create a virtual environment that would incorporate the six degrees of separation model to more closely replicate the process by which people made connections in the real world. Abrams took his influence from Ryze, a social networking site linking business professionals together (Lapinski, 2006). Using his knowledge of the Ryze networking structure and capitalizing on the popularity of Napster, a music sharing system with global recognition, he took the words “friend” and “napster” and created Friendster (Ferguson, 2003; Perdu, 2008). The idea behind the system was the creation of online social and peer groups, similar to Ryze, but different in the sense that it allowed people to connect to each other through known friends. The system was designed to provide some measure of familiarity between people, as connections were always made through friends or friend groups. Friendster was the first and original social networking website and

considered by many people in the electronic universe to be the progenitor of the social networking movement.

Myspace. Shortly after the launch of Friendster, technologically minded employees from eUniverse, an Internet marketing company, decided to improve upon the design of Friendster and create Myspace. Bolstered by the fact that eUniverse had over 20 million users and e-mail subscribers, Myspace experienced the “network effect” making it one of the largest social networking sites at the time through an exponential growth of adding “friends” (Bosworth, 2005; Hansell, 2006). A strong part of the Myspace appeal was an unparalleled amount of customization of a user’s respective main information page. By 2006, a changeover in market share and leadership was complete and Myspace became the site of choice for musical bands, various social organizations, and teenagers that were seeking “something even more social than blogs.” (Magid & Collier, 2007). Myspace signaled the next step in the development of the social networking evolution.

Facebook. At the time of its creation, the idea that a social network system would grow into a ubiquitous system used the world over was unheralded. Initially created to allow Harvard students to communicate through an online, social medium, Facebook, became the social networking standard. In short time, Facebook expanded to multiple Ivy League schools; internationally to select universities; nationally to all colleges and universities; nationally to all high school students; and finally to any user aged 13 and over (Facebook, 2010). Facebook’s system of creating unique user profile pages, both individual and group based,

appealed to the masses and made it the most popular social networking website in the world, with over 800 million worldwide users (Facebook, 2011).

Twitter. Another important technological development was Twitter and the Twitter platform (Sarno, 2009). Tweeting became a new frontier for communication. It led the charge to connect the world together through the sharing of short messages. Twitter was based on a simple premise – a user had followers that read his or her 140 character messages. Uploading messages was almost instantaneous and followers tracked those messages on a real-time basis (Lennon, 2009). This concept was used for basic messaging or to alert people of events occurring around the world, even being used by the Defense Advanced Research Projects Administration for a national scavenger hunt (Worthington, 2009). Thanks to mobile computing devices and advances in cellular phone technology, people were able to carry this power around with them in their pockets. Twitter took the social networking concept of Facebook and modified it so that users no longer had to go to a website to see postings, but could have messages pushed to an application on a mobile device like an iPhone. Due to this technology, distance and communication gaps were quickly closing in any part of the world with basic access to technological devices.

The rapid development and adoption of these technological advances proved to be beneficial to some demographic groups. Pew (2009) research findings indicate that approximately 50% of persons surveyed owned a laptop or desktop computer. Over 83% of those same respondents said they owned a Blackberry or iPhone or other Internet enabled smart phone (Pew, 2009). While

this indicates that there were those who were not adopting or fully utilizing emergent technologies, it clearly showed that most people had the ability to acquire the necessary technology to use for communication purposes. This general desire to embrace or adopt technological advancements had the potential to improve communication practices as society started to more readily embrace social networking systems as a delivery vehicle for vital information. This was especially important in the field of educational communication and information sharing. While it was possible that some people would be excluded from critical communication as communication evolved into a more digital form, it would seem that the growing ubiquity of technology was diminishing the threat of being excluded from technological communication practices.

The history of technology and present day developments was important in framing this research. To understand what the future holds, it was important to know the evolution and rationale behind technological development. Every technological advance to this day led to this moment – the point where people were limited in their ability to communicate information and ideas at the speed of thought only by the speed at which they typed.

Statement of the Problem

As technological history has shown, systems that were formerly based on direct human contact and communication made or are making the shift into the digital world. Methods of communication and human interaction have been redefined by technological development. This has become the age of the social network and the adoption of these technologies by people is a key component in

developing open lines of communication in a new modern, technologically advanced society. People face many challenges as they continue to develop complex social systems and technological advancements are one of the many options available that may provide solutions to those challenges by creating streams of information that are constant and unparalleled in their ability to reach the masses.

President Lyndon B. Johnson (1964) stated in his great society speech, “Our society will not be great until every young mind is set free to scan the farthest reaches of thought and imagination” (para. 26). Parents and teachers must collaborate to accomplish this goal and one way to do this is improving educational communication by utilizing social networking systems to make communication easier. Multiple factors may impact parent-teacher communication via technological means, including gender, age, financial well being, education level, race, and parenting status. Each of these issues had and has the ability to impact ownership, use, and comfort with technological resources. Therefore, this study examined the beliefs, perceptions, and view of people using social networking technologies as a tool to gain access to information streams, with a specific emphasis on parent-teacher communication.

Purpose of the Study

Technological advancements have often been the catalyst for change in a society. History is replete with examples of changes that have impacted the world. Some are more easily adopted than others. Regardless, change is necessary and people must adopt and embrace change for a society to move

forward. Technological advancement in communication and information sharing is here to stay and people must learn to work within this new paradigm.

Within this specific context, the objectives of this study were:

1. to determine the impact of technology use on parent-teacher communication
2. to determine the impact of social networking systems on parent-teacher communication
3. to identify ideas, beliefs, and expectations related to the use of technology and technological products on parent-teacher communication

Theoretical Basis for the Study

The foundational aspects of this research were based on the individual works of several researchers. Havelock and Zlotolow's (1995) work produced a set of seven core principles that guide prospective change agents. Rogers (1995) put forth ideas on the diffusion of innovation with a specific emphasis on innovations in the form of technological advancements and the impact of these advancements on the people (1995). Hord, Rutherford, Huling-Austin, and Hall (1998) put forth the theory of the Concerns Based Assessment Model (CBAM) which established developmental stages of concern that examined the impact of an innovation on a specific audience. Finally, Fuller (1969) originated the idea of addressing individual's concerns when faced with adopting an innovation. All of these ideas focused on how people acquired knowledge and the factors that affected knowledge acquisition, including age, gender, financial standing, parenting status, race, and education level, and concerns related to an

innovation. This study also focused secondarily on aspects of learning theory and key components of those theories as they impacted the ability of a person to learn and adopt technological innovations for educational communication.

The literature review examined a combination of factors impacting technology acquisition, adoption, and implantation in a personal and academic setting. While the specific focus was on improving communication between parents and school systems to increase engagement, this research also firmly fell within the scope of adult learning theory as all the principal stakeholders related to this research were adults, with children benefitting from increased engagement, but not being the target population of this research.

Research Questions

This dissertation was exploring whether technology use could have a positive impact on students by improving communication and engagement between parents and teachers, with a specific emphasis on two schools, O. Henry Middle School and Casis Elementary School (described in more detail in Chapter 3). Both Austin Independent School District campuses are located in Austin, Texas. It was suggested that the creation a basic Facebook classroom page would allow for important information to be communicated quickly and effectively with a minimum of effort or training. Facebook (2011) had become a ubiquitous system that is used by over 800 million people in the world today and is a fully functional tool for teachers to utilize in communicating with parents. Thus, this social networking tool presented an opportunity for improved

communication between teachers and parents by connecting an information provider, the teacher, with a person needing information, the parent.

As using social networking systems was relatively new within school districts and these schools, it was critical to measure parent and educator beliefs, perceptions and attitudes about this innovation. Using CBAM stages of concern themed questions, this research attempted to determine:

1. How do parents and teachers use technological processes to engage in communication?
2. How do parents and teachers perceive technological systems as a means of establishing communication?

Significance of the Study

Ramifications of this study are far reaching. Proper use and integration of technological resources is seen as a way of bridging the digital divide and closing socioeconomic (Norris, 2000) and demographic gaps (Walters & Kop, 2009). School systems around the country are spending millions of dollars to purchase technology and rewriting technology plans to include systems to communicate with all the stakeholders involved in the educational process. Unfortunately the ultimate decision to use technology is often left with a school principal and is subject to the rules of local teacher's associations, such as Education Austin (P. Price, personal communication, October 20, 2010).

If this study can determine that a positive link exists between technology use and parental involvement and engagement, then it is a powerful tool to justify more exploration into the use of social networking systems to communicate

educational information. It would justify an increase in budgeting for training of educators on the benefits of technology use in the classroom to communicate information to parents. If the research indicates there is no perceived link between technology use and engagement, then school systems would not face any added pressure of changing policies to include technological communication of student information. An answer is needed to inform policy creation and to assist school systems in developing communication programs to increase engagement. Ultimately, expanding the existing body of knowledge on this subject is the goal of this research.

The research analyzed the results of surveys and interviews based on the principles of the Concerns Based Adoption Model's stages of concern questionnaire conducted in two Austin Independent School District campuses. Improving the utility of electronic mail (e-mail), short message service (SMS), social networking systems (Facebook and Twitter), and instant messenger services through computers and advanced handheld devices was also the key component of this study. The findings of this research hoped to show that parents and teachers could improve communication through the use of social networking systems. Utilizing technological advancements could produce people that were able to communicate more effectively and in the context of schools, feel more engaged in their children's educational development.

Assumptions of the Study

This dissertation was an extension of the Transparent School Model research Bauch conducted in the late 1980s. Beyond this, it was an examination

of Norris' (2000) assumptions and work by Bloom (1985), Clark (1983), Dornbusch and Ritter (1988), Henderson (1987), and Kagan (1984) revealing that teachers and parents wanted to have better communication. Furthermore, it posited that technology can be used to facilitate such communication while diminishing socio-economic disparity, thereby improving parent-teacher engagement with a secondary benefit of increased student performance. It was believed that the CBAM themed stages of concern would be an effective tool for parents and teachers participating in the research. As Warschauer (2004) discovered, there needs to be a coupling of proper awareness and training programs to increase awareness and efficacy. Therefore, the researcher hoped to validate prior assumptions on the importance of parent-teacher engagement and the impact of social networking technologies on engagement. Regardless of the findings, the outcome would be beneficial to the body of knowledge on this subject.

If parents or teachers, regardless of different ages, races, genders, educational levels, and financial ability, were comfortable utilizing social networking technologies, then using these technologies to communicate and exchange educational information would be easier to implement. Although some people will find the challenges of their stations in life too difficult to overcome, they should have some comfort level with technologies. They may not be as adept at it unless they work in a field that regularly requires users to engage in technology use, but it is not anything that a properly developed training program

could not overcome. Generational, social, political, and socio-economic issues also were believed to impact the findings of the study.

Finally, there was a possibility that other factors played a role in technological efficacy. Men may have been more inclined to utilize technology than women. Certain demographic groups have often faced inequity in the amount of access they had to new technologies. Financial well being also impacted people's ability to use technology effectively, as the poor or those persons on the fringes of poverty generally did not have access to new and often expensive technology resources. Single parents may not have had as much time to devote to learning new technologies because they had so many roles to fill on a daily basis. All of these questions were addressed during the course of this research.

Limitations of the Study

This research had limitations that could not be controlled by the researcher and potentially influenced the individuals within the study. It could not be assumed with any certainty that people who used technology on a regular basis would actually use it to increase communication with educators. This study could only make assumptions and test data that had been gathered through implementation of a data gathering instrument. Future patterns of use could be predicted from data gathered, but not guaranteed. Furthermore, technology use patterns may vary by location, race, gender, parental status, and socio-economic status. A multitude of personal factors impacted this research and there were no way to control for such events. People were and are constantly changing their

opinions of technology. Another aspect to consider in this research was the scope of the innovation. While the social networking phenomenon is global in nature, it may have a deleterious effect. If the perceptions of the population were that this technology could be a corruptive influence, sectors of the population may have abandoned the use of such systems.

It should also be noted that innovation may take many forms. In essence, it is the introduction of technology as a positive means of facilitating a change. Technology is constantly evolving and changing. At this time and based on data, Facebook and Twitter appear to be the social networking systems of choice, but this could change. One of the original social networking systems considered in the design phase of this research, Myspace, has, during the course of this research project, changed its format and become a social entertainment portal (Ortutay, 2010). While Facebook appears to be the clear winner of this battle, its dominance cannot be guaranteed and a system could one day replace it. While this research is strongly advocating the use of Facebook as the medium for engagement, the overall concept of using social networking communication technologies is a more prevalent theme.

The study was limited by the fact that only two schools were being used for this research. This does not lend to generalizability, but neither does it detract from it. It was a convenience sample that served as a starting point for exploration into this topic. This study also suffered from lack of significant African-American participation. As one of the larger minority populations in the country (U.S. Census, 2012), there was a clear lack of representation in the

survey portion of this research. Furthermore, parent participation was challenging and a random purposeful sample was required, further limiting the study, but in no way diminishing the importance of the findings. Specifically, a person reading this work should use it as starting point for a discussion about the implementation and use of social networking technologies as a communication medium for parents, educators, and school systems. Future implications and recommendations for study are addressed in more depth in Chapter Five.

Organization of the Remainder of the Study

Chapter two of this research discusses the associated literature related to the problem presented in this study. Chapter three discusses and describes the data being used and the analysis method employed in this research. Chapter four presents, analyzes, and discusses the findings of the analysis used to examine the data. Chapter five contains a summary of the findings of the research. The information from chapter five is used to draw conclusions about the existing state of this topic and to make recommendations for future research that addresses the stated problem.

CHAPTER II

REVIEW OF THE LITERATURE

Technological advancements related to how knowledge is acquired, stored, and disseminated have been impacting society for the last 20 years, with new advancements being regularly developed. There was a time when information was strictly the providence of academic institutions or library systems. Changes in technological access and ability have made it possible for knowledge to be acquired at any time and in any location. Development of the Internet and World Wide Web (WWW) has changed the way people collect, distribute, and research information. This literature review, and to a greater extent, dissertation, focuses on the utility of new technologies for the purpose of gathering information and sharing information for practical use in enhancing communication between parties, with a special emphasis on educational practices.

Literature searches were done along four search strings: parental technology use, school technology use, Internet trends and practices, and current technology trends and practices. More specific searches were conducted to determine individual usage habits, software preferences, device preferences, access to technological resources, and demographic information related to

technology use. While there was some background historical content from 1965 relating to Moore's Law (Moore, 1965), the vast majority of the data were focused on the years between 1996 and 2010. This timeframe provided a current snapshot of the evolution and current state of technological advances in both hardware and software.

Theoretical Framework

Technological advancements are the lynchpin for this research, but the core concepts are firmly rooted in a classical learning theory. This research draws from aspects of adult education and communicative theories. Each of these theories influenced the overall structure of the dissertation and built the framework for the research. The key variables of age, gender, financial standing, parenting status, race, and education level were also examined within the literature and framed within the context of the stated problem. A CBAM-themed model is used to measure participant awareness of the developmental stages of the innovation, specifically, efficacy, implementation, effectiveness, and impact of the use of social networking systems on parents and teachers.

Concerns Based Adoption Model

Instructional technology has been and continues to be an integral part of enhancing the student-teacher experience in classrooms. It is now time to revisit and reframe how the use of technology can be used as a communication tool between educators and parents. This is a new and emergent means of utilizing existing technology to bridge gaps that exist in communication and has untold possibilities.

CBAM is a thoroughly researched and validated theoretical framework for examining an innovation and the stages of development associated with said innovation based on significant research (Tornatzky & Fleischer, 1990; Havelock & Zlotolow, 1995; Hord et al., 1998). At the earliest stage of development, this theory took root in Fuller's work (1969), which revolved around addressing concerns for people tasked with adopting an innovation. In this case, the innovation was the use of Facebook as a means to communicate classroom information to parents. Integrating technology use in schools can be daunting and framing the application of social networking systems as communication tools was not without worry or challenge.

Hord, Rutherford, Huling-Austin, and Hall (1998) stated "the single most important factor in any change process is the people who will be most affected by the change" (p. 29). This is especially important when it comes to exploring perceptions to a change such as the one proposed by this research. Adopting social networking systems for educational communication is difficult enough, but this is compounded by multiple factors, including external pressures on both educators and parents, administrative barriers that may exist from a school district, privacy laws that need to be strictly followed when dealing with minors, and general reluctance to adopt changing technologies.

Hall and Hord (2001) further refined the Concerns Based Assessment Model to create the Concerns Based Adoption Model, which states that for an innovation to be successful, the concerns of the person utilizing the system must

be addressed. This model has particular benefit, as Horsley and Loucks-Horsley (1998) stated:

One of the greatest strengths of the Concerns Based Adoption Model is that it gives credence to, and supplies a precise language for, the feeling each of us has when we are expected to embark on yet another new program or practice. It's comforting to know that there are discernable patterns in the many different and powerful emotions we feel when adapting to new circumstances. It helps us make sense of this change process. (p. 2)

In the field of education, it is a systemic tool used by researchers to gauge the feelings and beliefs of research participants. The identification of needs and methods for improvement can be achieved by properly using the stages of concern questionnaire. This questionnaire examines the seven stages of concern: awareness, information, personal, management, consequence, collaboration, and refocusing. Each of these stages represents a developmental sequence in response to the introduction of an innovation.

Rogers (1995) examined the diffusion of innovations across a system, with a specific emphasis on technological innovation. Specifically, he examined hardware and software innovations and the impact on a given system as related to critical characteristics of a change – relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1995). This is topical for this research as the focus is the potential adoption of an existing software solution, Facebook, to meet the needs of AISD students' parents. This social networking

software was originally designed to improve social and peer communication among people throughout the world, but now serves multiple other functions, including communicating information from one group to another. This innovation was driven by a need to connect people together in ways that standard communication could not and is now the focus of this research. Facebook has produced a product that can be easily adopted within an existing school structure safely and at no cost and provide a communication backbone for teachers and administrators to successfully communicate critical and non-private information to parents.

Havelock posited the idea of repeating cycles of actions (1995). Positive change is driven by consistently repeating the cycles, each successive time refining and developing the cycles to produce more effective change. From the concept of repeating cycles, Havelock created the Guide, a series of seven ideas at the heart of his change model: care, relate, examine, acquire, try, extend, and renew (1995). This early work draws many parallels to the CBAM model and is important in understanding this research.

In the case of this dissertation, developmental stages of concern were examined related to social networking technology use, specifically Facebook and Twitter, as a way to improve parent-teacher communication. The application of the CBAM model to a problem is not unique unto itself, with the Stages of Concern (SoC) questionnaire having been used repeatedly in various studies. It should also be noted that the CBAM SOC has been used for multiple studies examining the use of technology in academic environments, making the theory

valid and critical to this exploratory research. At this time, no specific CBAM studies have been found related to the use of social media as a communication tool in the classroom environment, but that will surely change as social media becomes more relevant and researchers attempt to examine the stages of concern related to social media use in an educational setting. While an exhaustive search was conducted to identify CBAM use for this particular area of study, it in no way could be considered absolute, as studies may be in various stages of submission or pre-publication.

Adults and Technology Use

A key basis of this research resides in the field of adult education. Multiple frameworks exist to understand, qualify, and quantify learning. This research draws from portions of adult learning theories to create a cogent rationalization for this work.

In 1978, Mezirow introduced the concept of transformative learning. Transformative learning depends on two critical constructs drawn from Habermas' communicative theory, *communicative* and *instrumental* learning (Taylor, 1998). While this research *does not* consider the use of technological innovation to be a transformative experience, it does attempt to frame the acquisition of technological knowledge within the instrumental component of Habermas' work as a task oriented process in which a person must successfully master gaining understanding of new software and hardware technologies. To expand on this idea, *meaning schemes* and *meaning perspectives* informing ingrained behaviors must be examined. Practically speaking, meaning schemes

are “made up of specific knowledge, beliefs, value judgments, and feelings that constitute interpretations of experience” (Mezirow, 1991, pp. 5-6). “Meaning perspectives is a general frame of reference, world view, or personal paradigm involving ‘a collection of meaning schemes made up of higher-order schemata, theories, propositions, beliefs, prototypes, goal orientations, and evaluations’ (Mezirow, 1991, p. 2). According to Taylor (1998, p. 6) “meaning perspectives are often acquired uncritically in the course of childhood through socialization and acculturation, most frequently during experiences with teachers, parents, and mentors.”

The structure of how meaning perspectives are gathered and connected to the adult learning process is paramount to this research. Technological efficacy is hypothesized to relate to generational status. Based on empirical data, the older a person was, the less involved he or she was with technology during his or her developmental years (Jones & Fox, 2009). Conversely, the more involved an individual was with technology during the formative developmental years, the more adept he or she would be at utilizing technology as a part of his or her daily life. While there are possible exceptions, such as those trained formally through a dedicated educational process (i.e., a course of study resulting in a technical degree), the general rule that generational differences informs technological efficacy is sound. Thus, a disconnect is created in systems in which a person who was not comfortable with technology was suddenly forced to adopt its use or a person that was raised with technology is faced with a population that is reluctant to utilize technology as a tool. There are still smaller populations that

will be found within these communities of persons - those that were raised without technology but have adapted and find reluctance in their own peer groups to use technology and those that were raised with technology but have determined that it has become too invasive and prefer not to use it as would be expected based on their efficacy level.

The field of education is a prime example of this convergence of differing meaning perspectives. Based on the observable ages of parents and teachers, the average school will contain a population of parents and teachers that did not use technology during childhood or their young adult lives. These people function well through direct face to face communication, open-houses, phone calls, and any other medium that allows for more direct communication. You will also find that there are parents and teachers that grew up with technology. These people prefer to communicate strictly through digital means, iPhones, PDAs, Blackberry's, laptops, etc. Face to face communication slows down their lives. It is the bridging of these different perspectives of communication methods and practices that is helpful to this research. This research hopes to identify the needs and desires of a local community and apply it to a greater body – schools around the country seeking to improve parent teacher engagement via social networking systems.

Technology Use and Integration in Education

In 1989, Bauch proposed the use of the Transparent School Model in the classroom setting. Over 20 years ago, technological potential to bridge communication gaps was envisioned. Using a basic voice-mail system to deliver

messages to parents, Bauch found increased parental engagement and student performance resulting from his work. One of the limitations at the time of the study was the technology was not a viable means to communicate information due to limits in speed and ease of use and access. Bauch believed that the future would present greater opportunity for success as technology developed. Moore's Law (1965), which states that technology will double in capability approximately every 2 years, certainly lent strength to this belief and consistently proved that technology was developing as he originally predicted. The future that Bauch perceived became a reality, but not before the Transparent School Model appeared to have been abandoned as a research model.

As the Transparent School Model showed, creating and improving communication between disparate groups of people, with an emphasis on the field of education, was critically important to educational attainment and did produce positive results. A goal of this research was to engage both parents and educators in a discussion about the use of technology to open bridges of communication; a fact supported by Walters and Kop's (2009) belief that education should address the technological way-of-being that is becoming dominant in daily life. Nevertheless, multiple variables impact the use of technological communication systems in classrooms.

Social-Political Environment in Education

The American educational system has seen many changes throughout the years. Research indicates that schools in this country are especially susceptible to strong external forces. Callahan (1962) stated:

For while schools everywhere reflect to some extent the culture of which of which they are a part and respond to forces within that culture, the American public schools, because of the nature of their pattern of organization, support, and control, were especially vulnerable and responded quickly to the strongest social forces. (p. 1)

This research is now 50 years old, yet it still rings true in the present day.

Schools faced countless challenges. Cuban (2005) relates a story about a critic of educational processes. In this story, the gentleman tells a group of educators that the school must be run like a business. A single teacher rebutted that a business had a choice and could send back that which it found unacceptable. Schools were not capable of doing this. A school accepted all students and taught to all levels and accepted oversight from multiple groups, including school boards, parent-teacher associations, state and federal legislators, the American Civil Liberties Union, and countless other organizations. In short, the literature showed that school systems had to respond to multiple social and political organizations and were constantly challenged with developing policy that would appease all concerned parties.

Another aspect of the social-political environment is the conditioning of educators at institutions of higher learning. A study by Hoover-Dempsey, Walker, Jones, and Reed (2002) concluded that teachers did not encourage family involvement in educational practices because they were not taught to do so. This was an overarching critical issue that needed to be addressed when attempting to create dynamic programs that utilized technology to convey information.

Overcoming poor communication habits was and is a work in progress and building “a place where learners may work together and support each other as they use a variety of tools and information resources in their guided pursuit of learning goals and problem-solving activities” (Wilson, 1996, p. 5) is critical to creating engagement between parents and educators and cannot be done when educators have been conditioned to not encourage parental engagement and participation in the educational process.

Schools systems also contributed to this problem. Schools have made it difficult for teachers to use technology as a proper communication tool. Many schools are either slow to adopt technological resources as intended or make it incredibly difficult for teachers to utilize the tools that are available. Research by Cuban, Kirkpatrick, and Peck (2001) and Zhao and Frank (2003) suggest that educators are not hampered by desire, but by the technology itself or the policies in place regarding the use of technology. In support of this research, AISD has a 48 hour email response policy (AISD, 2011) which allows teachers up to two to days to respond to parental requests for information. Often, this time is stretched, making parental engagement highly reactive as opposed to proactive.

In short, the literature indicates that this is not merely a problem of technological efficacy or desire. It is a more complex and nuanced debate that must examine multiple external factors placing pressure on school systems. The issue cannot be examined as merely one of access or education, but as a complex issue that takes into account changing social and political pressures.

Schools Systems and Technology Use

The Austin Independent School District (AISD) located in Austin, Texas is one example of a school system with the ability and resources to implement technologically advanced communication programs but has been slow to do so. AISD had a Vision for Technology, 2001-2005, document on its website detailing technology use by the school district. The third goal in the executive summary stated: “provide access to information for parents and students outside the physical school environment.” (AISD, 2010). In early 2009, eight years after the creation of a document that mandated the school utilize technology to improve communication between differing groups, AISD adopted an online program to report basic grade and attendance information to parents outside the physical school environment. When the school district does not enforce or promote its own policies and stated goals, a reasonable observer cannot expect the educators within the school to promote technology use to improve communication. This is further documented by an article in the Austin American Statesman that quotes an AISD school teacher explaining the pressure and time constraints she feels at using technology to communicate grades with parents:

But we’ve never felt so obligated to have grades updated because parents want it so immediately. We go home and have lives on the weekends too, so that’s been harder. I have a newborn at home and am grading slower than ever, and that time frame is now exposed. (Taboada, 2010, PPB1, B7).

The fact that an educator feels obligated as opposed to duty bound to share this critical information with parents is reflective of the greater problem. This lack of communication leads to a breakdown in the engagement level between parents and educators. If educators do not feel duty bound, then there cannot be the development of a learning community that will successfully address technological deficiencies in training and use. While considered anecdotal at this point, Taboada's (2010) article was reflective of a greater problem that has not been thoroughly addressed and researched, time limitations coupled with lack of training and possible unfamiliarity with emergent technologies.

Individual Factors Impacting Use and Access

Central to the research within this dissertation are the assumptions that technology adoption is impacted by the following factors: age, gender, financial standing, parenting status, race, and education level. The Pew Center examined technology use across a broad spectrum of the population and produced a report detailing the findings of the study.

User Age and Technology

Age appears to play a significant role in technology use in this country. According to the Pew research (Jones, 2009): in the 12-17 age range (teens), 93% of are online, in the 18-32 age range (Generation Y), 87% go online; in the 33-44 age range (Generation X), 82% use the Internet, in the 45-54 age range (Young Boomers), 79% are online; in the 55-63 age range (Older Boomers), 70% are utilizing the Internet; and in the 64-72 age range (Silent Generation), 56% utilize the Internet, and lastly, in the 73+ age range (the G.I. Generation), 31

percent of users are actively engaged in Internet use. These numbers very similar to the work Rainie (2010) did for the Pew Center, which found that these numbers are not only valid for parents, but educators as well. Jones and Fox (2009) found that more than one-third of all Internet users engage in the use of social networking sites and instant messaging programs. These findings lend greater support to the argument that people are already engaging in technology use and that minor modifications would be needed to ensure full engagement in the educational process. Assuming that users are going to be using social networking sites and other forms of emergent technologies for educational communication purposes is not as far-fetched as it may seem given that users are already engaging in social networking and instant messaging use and that engagement in the educational process is desired, but not encouraged. In theory, it would not take much to bridge the gap that currently exists between desire to engage and actualization. Utilizing educational technology in a new capacity is a challenge. A key concern for technology specialists in school districts would be access to technology resources, specifically the Internet. The data clearly shows (Pew, 2009; Jones & Fox, 2009; Rainie, 2010) that people use the Internet and that the use of this technology is divided amongst all age ranges and shows a significant increase in usage among the G.I. Generation. What motivates this spike in use among older populations is not examined in detail for the purpose of this study, but anecdotal evidence would suggest it is a reflection of the changing times and the influence of younger persons on an aging population. Nevertheless, the implications of such an increase in use, even for a particular

technology such as e-mail use, are significant. An increase in the G.I. Generation's use of technology means that school districts can strategically engage grandparents as well as parents in the educational process, thereby increasing engagement and improving chances of success for students in schools.

Types of Technologies in Use in Education

A key component of this research is how and what emergent technologies are being used to improve communication between educators and parents with a specific emphasis centering around the use of communication technologies such as email, SMS, social networking sites, and instant messaging programs. While the data provided by the Pew Center also includes data for systems that would be considered pull technologies, this research is focusing on proactive technologies that have the ability to push data to an end user. The research conducted by the Pew Center did focus on all technologies, but data does indicate that the technologies at the heart of this research (push based technologies) are actively used by all the stakeholders (Pew, 2011). It is these target populations that have the potential to make the greatest impact on educational attainment. Of all Generation Y users, 67% are actively engaged in the use of social networking sites (SNS), 59% send instant messages, and 94% use email. The Generation X population has a 36% SNS use, 38% instant message use, and 93% email use. Younger boomers are at 20% SNS use, 28% instant message use, and 90% email use. Older Boomers, the Silent Generation and the G.I. Generation vary between 4% to 11% use of SNS, 18% to 25% use

of instant messaging, and 79% to 91% use of email systems. While not many people beyond the Older Boomer generation will have young children in school, there are those with possible teenagers or those who monitor grandchildren. Since the purpose of this research is to measure parental engagement, the older generations would not normally fit into this study. Incidentally, a good rule would be to engage grandparents in the process as well, as they may have more time to review such data and become involved in the educational attainment process. This creates a redundant system for catching problems before they arise. However, it should be noted that extended family engagement is not the focus of this research but does deserve further study. Overall, the potential to increase engagement exists, as the Pew data demonstrates, but it is not without potential problems that must be addressed. In fact, widespread integration of push technologies had the potential to be abused by both students and educators in a multitude of ways and had to be closely examined.

Social Networking Technology and Education

Thus far, the data have shown trends in the use of specific technologies, indicating that those technologies are the prevalent means of exchanging information. While other software and hardware technologies were present, the focus of this research is on push technologies and how these technologies can benefit communication between parents and educators. Push technologies reduce the amount of work a parent has to do to receive information, as a system will “push” data to a device once entered. This greatly reduces the amount of effort a user must exert in order to gain access to information. Complicated logins

and navigating to specific web pages will no longer be necessary as all the data will be present in one centralized location.

However, there is concern in education that technology use can have negative consequences. Facebook has privacy issues, as do most other forms of online networking websites. It has been proven that teenagers are more than willing to provide personal and identifiable information to join social networking sites (Barnes, 2006; George, 2006; Kornblum & Marklien, 2006). This presents a valid security concern for educational administrators, despite the fact that this process would be used exclusively to communicate assignment information to parents. It could still be perceived that school administrations are encouraging students to use social networking sites. This opens a student up to internal and external threats. While threats can be managed, they should never be overlooked. These issues must be examined and placed into context for the purposes of this study. It must also be noted that for this research, the goal is to have teachers utilize these technologies to deliver class work and homework information, not personal student information. Security threats are a valid concern and this research will work to address those issues, but a reader should not think that the goal of this research is to encourage student users of the system.

Internal and External Threats

Young adults have a penchant for the dramatic with little understanding of the consequences for their actions. In Springfield, Ohio, a middle school student was suspended for posting a Myspace profile that parodied the school assistant

principal (Williams, 2008). The American Civil Liberties Union (ACLU) became involved claiming that this was a threat to free speech and the right of the student to express her beliefs. While the student was ultimately reinstated, the damage in this situation was done. What rights do students have? What rights do educators have? Is the work done in a school open to a parody by a student? Does the student understand the consequences to his or her actions?

Schools are wrestling with this dilemma on a daily basis. Parody is not the only fear that a school should have. A Colorado high school student was suspended for discussing the school's condition and potential faculty bias (Kennedy, 2006). While this was meant to expose what the student perceived to be injustice and intolerable conditions within the school, it was far more damaging. With the growing reach of social networking technology and the ever growing popularity of systems like Facebook and Myspace, the reach of comments and postings has expanded in ways that administrators could not have imagined. What was merely meant as a student venting frustration was now being viewed by the world, in some cases with dangerous and potentially criminal results. In a California school, a young child was expelled from school and being investigated for hate crimes for the postings made on Myspace (Kennedy, 2006). Administrators are now faced with the difficult task of interpreting what is free speech and what is detrimental to the learning environment. These issues also have to be weighed with privacy and safety concerns. Social networking as used by young adults is a dangerous technology.

Many issues of privacy and safety are present in schools in this modern age. Violence levels in schools is a serious social issue (Hoover & Juul, 1993; Charach, Pepler, & Ziegler, 1995; Clarke & Kiselica, 1997; Hoover & Olsen, 2001) that has been steadily increasing, especially in schools with a greater gap between high and low-achieving students (Akiba, LeTendre, Baker, & Goesling, 2002). Many schools now use metal detectors at their entrances. Lockers are disappearing as they are places where a student may hide prohibited items (Johnson, 2000). Campuses are being closed around the country to reduce the risk of predatory persons entering schools grounds or wayward students leaving campus (Skiba, 2001). In short, safety and security have become significant issues for administrations around the United States and using technology that can provide secure information has its risks.

The wealth of information provided on social networking sites creates numerous challenges for administrators. Cyber-bullying and stalking are significant problems in an age of modern technology with instant communication ability and little oversight and monitoring (Li, 2006). News media are replete with stories about bullying via electronic means. The benefits of technology are evident, but so are the drawbacks. When it comes to issues of welfare and security, school systems are being forced to examine practices more closely. The problems that arise from the use of push technologies, social media, instant messages, and email systems, are not easily dismissed and must be considered when implementing a program utilizing these technologies to communicate with parents. However, the problems associated with new technologies cannot

prevent those same technologies from being used and developed in the most effective way possible. With careful checks in place, push technologies can be beneficial to educational systems and provide a valuable resource for educators, administrators, and parents that are seeking to improve the quality of interaction and education a child receives.

Synthesis of the Literature

Progress is defined as a “movement toward a goal” (Soukhanov, 2010). The goal of this research is to improve communication between parents and educators with a resulting outcome being increased educational success. This conclusion is supported by research which shows that engagement between parents and school personnel often results in increased academic achievement and educational attainment in children (Stevenson & Baker, 1987; Hoover-Dempsey & Sandler, 1997; Gutman & Midgley, 2000; Epstein, 2001). The difficulty exists in the integration of emergent technologies into the process of improving communication. The literature shows that improved communication between parents and educators will have an impact on student achievement. Identifying a need, in this case the missing use of technology to facilitate communication, falls within the scope of instrumental learning, which calls for adults to identify missing needs and fill them through a dedicated process to acquire knowledge. Acquiring knowledge through a program or course of study that fills a missing need is part of a constructivist pedagogy that promotes learning defined by the needs of the learner. While there are factors that may

impact the acquisition of technological knowledge, those factors are not absolute and can be overcome through a dedicated process of instruction.

A prospective method to bridge the gap between those that use technology and those that do not is a technology student association (TSA). TSAs are becoming a catalyst for change in how technology is perceived by schools and parents (Hess, 2010). Through the interactions within these groups, new ideas and methods of using technology are being discussed and promoted in communities in which a TSA exists. The TSA could be partnered with interested groups from the school, such as a parent teacher association (PTA). The partnership between technologically capable students and motivated parents provides the framework for a constructive environment in which both parents and students are engaged in a process to better the learning environment.

Other possible avenues would involve more proactive engagement from a particular school districts technology taskforce or technology coordinator. Conversations are currently being held in the Austin Independent School District about best practices in relation to educational technology and its implementation to assist students and parents in the educational process (personal conversation with John Alawaneh, October 22nd, 2010). These conversations relate to the use of database driven systems to provide parents with information. Despite the advancements of these systems, the limitation to the delivery of information is still the speed at which educators enter information into the databases. The most advanced system utilizing the most advanced programming concept is still rendered nothing more than a reactive information data repository that provides

no proactive engagement for an interested parent. Despite the best intentions of the district and the advanced nature of the programming, this system is no more effective than the current system and still dependent on the same variable, educator participation on a new system that teachers and staff would be required to master.

As this research focused on emergent and proactive technologies to communicate information to parents, it was important to discuss some possibilities within the context of the literature and to demonstrate that some communities have recognized these needs and taken steps to address the gaps. This research should narrow existing gaps and focus technology directors and district administrators on one aspect of the communication problem that can be easily remedied with a small software solution that will ultimately reap huge rewards. The original work of the Transparent School Model (Bauch, 1989) should be revived and put into practice utilizing the modern technology that now exists but could only be dreamed of in the late 1980s. The gains made by a model using a voice mail system will be far eclipsed by the advances and possibilities of the technologies in use in the world today. This dissertation examined the need and beliefs of persons within the educational communities of specific schools in the Austin Independent School District and put them into the context of the existing technologies that are present today.

However, the integration of technology is not without its problems. As the literature points out, there are issues related to safety and security when technology is used in an environment. Bullying, stalking, threats, and violations of

privacy are especially problematic for schools. Violations of constitutionally protected rights are problematic for students and schools. Parents may be reluctant to utilize technologies they are not familiar with to communicate with a school.

Beyond this, the research indicated that there are significant internal and external forces impacting the implementation of social networking programs as communication tools in schools. When examining the CBAM process, the developmental steps progress along a scale. Before any innovation can be fully adopted, it must be explained, understood, and utilized by the target population. The process only becomes more sound after the final phase, refocusing, in which the stakeholders review progress and refine the policies that govern the use of the innovation. A danger rests when the steps break down. If there is not support from all the stakeholders, then the process cannot evolve as it should. In the case of parent-teacher communication utilizing social networking systems, teachers are limited in their ability to utilize these systems because safety and security concerns may force administrators to negatively view the use of these systems in schools. Without support from administrators, the process of fully implementing the innovation will fail.

Furthermore, some schools may not have the resources available to successfully implement these programs. As ubiquitous as the technologies appear to be, there are still those that are unfamiliar with them. Parents need to be educated on the use of these technologies. Providing those educational opportunities may be impossible or impractical for school districts. Thus, the

creation of effective learning communities will be hampered. The paradigm may not shift easily between instructional technology and the delivery of information via technological means. The list can go on, but the reality is that there needs to be a change in the policies and practices of parents, students, and educational administrators to leverage existing technologies to make the educational experience better.

CHAPTER III

METHODOLOGY

The purpose of this study is to gain an understanding of the impact of increased technology use via social networking and other technological systems on parent-teacher communication. A mixed-method study examining the dominant and less dominant communication practices was chosen for this research. For this study, the dominant behavior is the traditional communication method employed by educators versus the less dominant practice of communicating expectations electronically. This research study's primary focus was on the qualitative data captured with quantitative data providing a supplementary component to support findings. Creswell, Plano Clark, Guttman, and Hanson (2003) stated that:

A mixed methods study involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research.
(p. 212)

The research for this study sought to examine perceptions and beliefs of parents and teachers using a Concerns Based Adoption Model themed

questionnaire and to quantify any data that can be gathered relating to demographics, performance, efficacy, and use during the data gathering period. The actual CBAM questionnaire, while validated, did not apply specifically to this study as this was a proposed innovation and not an actual application being used. It sought to gauge the interest and understanding based on current levels of technological participation and efficacy.

The survey instrument used to collect the initial data for this research study had two parts. The demographic portion collected information used for the statistical portion of the study. Race, gender, age, income, education level, and parenting status were also captured in this portion, as was information related to specific technology use and adoption. This data provided basic descriptive statistical data and showed trends in the use and adoption of technology. Based on Pew (2009) research, there were some expectations going into this phase of the study. However, the data collected through the instrument provided the true result and indicated if the target population followed national trends or trended in a different direction.

The CBAM themed portion of the questionnaire sought to clarify participants' perceptions, beliefs, concerns, and opinions of a certain innovation by asking specific question related to the use and implementation of the innovation, in this case the integration of modern communication technologies into daily routines related to educational communication. Since this particular innovation was not being fully utilized or measured, this application of CBAM examined themes from the questionnaire, as opposed to the full questionnaire,

that could be used to justify the full adoption of this particular innovation. The group interviews helped the researcher clarify and understand reactions to the use of this technology based on perceptions and outside use of Facebook and other communication software. If the participants found it to have any impact on performance, communication, or the relationship between parents and teachers, then this fact was recorded during the process. A critical component and goal of the research was to understand whether current technologies helped to create better relations between the two key parties in a student's academic life cycle.

Interviews were conducted with the selected population to determine participant perceptions and beliefs related to the benefit of integrating various hardware and software technologies into the daily lives of parents, teachers, and to a certain extent, the student. Patton (2002) states:

The purpose of interviewing, then, is to allow us to enter into the other person's perspective. Qualitative interviewing begins with the assumption that the perspective of others is meaningful, knowable, and able to be made explicit. We interview to find out what is in and on someone else's mind, to gather their stories. (p. 341)

Sample Group

Criterion-based sampling was used for this study, defining the target audience as parents of students in the selected schools and classrooms that have agreed to participate in this study. In limiting the sample of parents of students in two schools in Austin, Texas, the responses were pertinent to the research topic, parent-teacher communication in an educational setting. The first

group of parents was from O. Henry Middle School. This school was located in a more affluent section of Austin, Texas, but was fed by multiple elementary schools, thereby creating a great deal of economic and social diversity. According to AISD (2011), this school housed a sixth, seventh, and eighth grade with an enrollment in 2011 of 1004 students, of which 54.6% were male and 45.4% were female. White and Hispanic students accounted for 88.3% of the total population, with 47.9% white and 40.4% Hispanic respectively. The next largest ethnic group was African-American with 9.5%. The Asian population rounded out the rest with 2.2% of the student population. The teaching staff was predominantly female at 76.4% (male staff was 23.6%) and white.

The second school being examined was Casis Elementary. Casis was an elementary school in an affluent west Austin neighborhood that feeds into O. Henry Middle School. According to AISD (2011), Casis housed first through fifth grade with an enrollment in 2011 of 817 students, of which 53.5% were male and 46.5% were female. White and Hispanic students accounted for 93.2% of the total population, with 81.6% white and 11.6% Hispanic respectively. The next largest ethnic group was African-American with 3.4%. The Asian population rounded out the rest with 3.3% of the student population. The teaching staff was predominantly female at 91.4% (male staff was 8.6%) and white (AISD, 2011).

The nature of this research required the use of mixed purposeful sampling, allowing for flexibility and meeting the multiple needs of the research question (Mugo, n.d.). More specific criteria would have been ideal, but the exclusionary nature of specific criteria would not lend to the credibility of this

study. Picking only parents in a higher socio-economic bracket would have skewed the results as they would most likely have had access to technology and resources and had the time necessary to actively engage in this process. Conversely, low socio-economic status parents would not have had full access or the time to dedicate to this process. Thus, a need was created to find a reasonable mix of parents so that more effective data could be gathered by looking at multiple factors impacting the implementation of this innovation.

The primary method of contacting participants was made via the O. Henry Parents Teachers Association (PTA). Many of the parents associated with the O. Henry PTA also had children in Casis elementary, so they were members of the Casis PTA. Thus, the Casis PTA was also utilized to make first contact with parents who were not associated with O. Henry and who could add value to the study. From this contact, individual teachers were identified based on their predisposition or aversion to technology use. Further contact was made through personal friendships with individual middle school teachers in the Austin area, utilization of Craigslist, and recommendations from PTA members (known as chain sampling [Mugo]).

Ethical Considerations

Approval for any research involving humans required review by the University's Institutional Review Board (IRB). In accordance with the requirements of the board, participants were informed of their rights and asked to read and sign an electronic informed consent form. This consent form was necessary to ensure that participants were aware of their role in the research. All

questions asked in the survey process were marked as optional. At any time, a respondent could discontinue taking the survey. Respondents were also able to expand or limit answers as much as necessary. This process was designed to ensure that no human subjects felt forced to answer questions which were deemed too personal to answer. Furthermore, the potential involvement of minors in any capacity merited a careful examination of the research project. However, this research did not involve minor children in any way. While the ultimate benefit may have been for minor children in schools, the actual participants in this research were parents and educators. No data were gathered from a minor child directly. Indirectly, a parent may have provided information related to performance if he or she chose to share that information, but no identifying information was present at any time. Should a parent have inadvertently identify a minor or shared information related to a minor that was protected under federal privacy laws, the aforementioned information was redacted for professional, ethical, and safety reasons.

Sample Size

Once approval was gained, participants were identified. The study was proposed to them via a meeting during school orientation and via electronic mail. A questionnaire was sent to the participants to gather data. This instrument contained qualitative data and a significant quantitative component designed to collect descriptive information for future use. Initial response time was anticipated to be varied and took approximately eight months to gather after the delivery of the survey instrument and final interviews.

The sample size was initially two different classrooms from two different schools, one a middle school and one elementary school. This totaled four classrooms with approximately 20 students per class, giving roughly 40 sets of parents from each school. With 80 sets of parents, the sample size was large enough, using Cochran's (1977) formulas, and diverse enough to collect useful data for the survey research (Bartlett, II, Kotrlik, & Higgins, 2001). It was essential to the research that the parents selected for this research actively participate in this process, thus vetting at the start of the process was used to ensure that the selected classrooms had, at the very least, technologically capable and interested educators. While this may have shown a distinct bias toward people predisposed to technology, it would have been impossible to conduct this research without an educator that used technology willingly. Therefore, this was done in order to ensure that parents who participated would find information critical to the research topic online at any given time.

Data Collection

The initial data collection will come from an instrument delivered to the parents via electronic means. The process is demonstrated in the following flowchart. Initial teacher selections were necessary, as was the acquisition of parental information. After all parties had been identified, the survey was sent to the necessary participants.

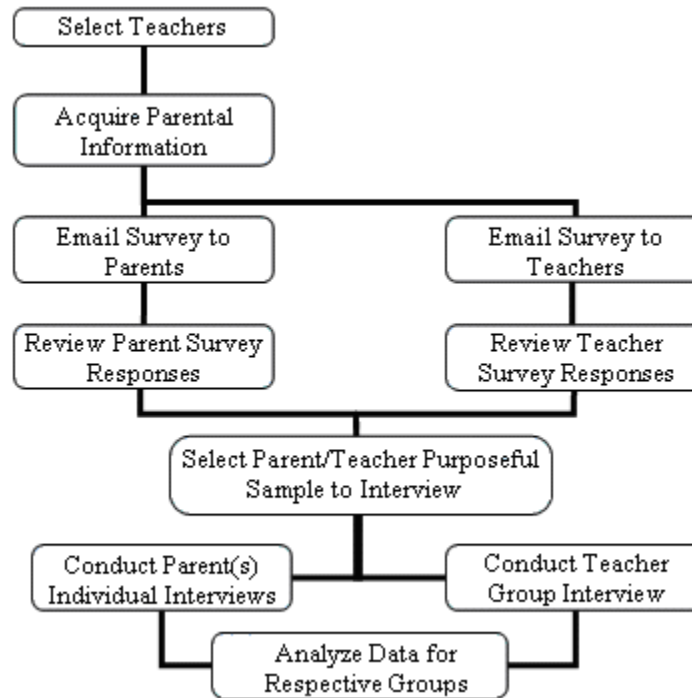


Figure 1 - Data Collection Process

A secure online survey system was utilized to collect the data from the various participants. The instrument underwent testing with an initial preselected group of parents that represented a cross section of persons with both high and low technological efficacies. The second group that piloted this instrument was a small group of teachers, again demonstrating varying degrees of technological efficacy. Finally, a review by a College of Education faculty member rounded out the instrument's review process. Once this instrument met with approval, it was placed into service and sent out to the selected participants.

The instrument questioned the knowledge possessed by adults involved in a child's educational development. These questions revolved around efficacy with computers, computer related communication, social networking familiarity, use, and comfort, and general interest and willingness to participate in technological means of communication with an educator. Furthermore, this

instrument examined parental and educator beliefs about any inherent value in using technology for communication purposes, fears or apprehension related to technology use, and concerns about adopting such a model into their daily lives.

The research gathering period was from April 01, 2011, until November 30, 2011. This length of time allowed for rich data collection related to the beliefs and experiences of the participants, and included time for follow-up data gathering. The survey was designed to take no more than 30 minutes. It utilized open ended questions along with some basic demographic and technology use questions to determine participation and interest levels. As participation and engagement were primary goals of this research, it was critical to know if parents and educators noticed, felt, or clearly saw an increase in engagement when utilizing technology resources. Emphasis was placed on whether the parents and teachers felt that communication might improve if social networking technologies were used and whether all the respective parties felt that access and engagement was possible.

When the responses were received, an analysis of the data began. Impact was measured in a variety of ways via perceptions, engagement, and general views on the nature of the research. Participants answered questions on whether they believed the technology was beneficial or detrimental to their engagement. They were also questioned as to whether they felt that technological communication fostered better relationships with the educators guiding their children through the school year. Open ended questions were critical to the research. Patton (2002) stated that the “truly open-ended question permits those

being interviewed to take whatever direction and use whatever words they want to express what they have to say” (p. 354). Clarification of any points raised by the survey was made via phone, personal, or group interview. This evaluative interview process examined whether parents and educators believed that technological process could impact engagement.

After the initial survey process was complete, a group interview had been planned for as many parents as were able to participate. Every effort was made to include all the parents that participated in the survey, but time considerations were a limiting factor. Parents were not able to attend a group interview, so individual interviews were conducted instead. The individual interviews used the same process intended for the group interview, with data being generalized and provided to the participants and their input and beliefs being recorded. Beyond that, the individual interview allowed participants to openly share their experiences with technology and what they thought of the innovation. A benefit of the individual interviews was that people were more comfortable admitting to their lack of technological efficacy, so there was a more open discussion about the use of technology for the purposes of communication.

After the parent group interview, the four classroom teachers were directly interviewed. Understanding the feelings and perceptions of the educators involved in the process was critical to the future implementation of this system of using social networking and related technologies to improve engagement between parents and educators. If the educator felt that there was an improvement, even marginal, then it supported a closer look at strategies to

refine the process and possibly implement a program to further measure the impact of social networking technologies on engagement and participation.

The cumulative data from all instruments and interviews were analyzed to determine whether the data met the needs of the CBAM model. Responses were gauged to determine levels of awareness of the innovation and what the potential benefit was to improving communication and engagement. Interest was gauged based on the response and participation rates, as were suggestions for improving practice. Open ended questions and group discussions focused on the impact and relevance of the innovation, the ability and limitations of wide scale implementation, and the impact of utilizing the innovation on overall academic engagement and performance.

Theme Identification

By using an on-line survey instrument, follow-up phone interviews, and group interviews with parents and teachers, this research had multiple perspectives and a significant member check component built in to the research process. All of the group interviews were recorded, with permission, so that the essence of what was being conveyed was not lost. Careful analysis of the feelings, perceptions, and beliefs was then done. This process of triangulation, suggested by Wolcott (1988), allowed “for cross-checking or for ferreting out varying perspectives on complex issues and events” (p. 192).

Identifying themes was a critical component of this research. Patterns in the data had to be identified. Fraenkel and Wallen (2003) stated, “To formulate themes (i.e., major ideas) which help to organize and make sense out of large

amounts of descriptive information” was a critical component of the content analysis process. The interviews produced volumes of rich data to mine for themes, so an analysis of the data was needed.

Based on the three principles for thematic analysis established by Opler (1945), this research sought to identify any themes that were visible in the data, determine if those themes were obvious, and identify whether those themes were reappearing often enough in the interviews to accurately label them as themes.

According to Ryan and Bernard (2003), repetition was one of the easiest ways to determine whether a theme existed in the data. The first step in the analysis process began during the interviews, with observations being made to and interesting points being jotted down in researcher notes. After this, the recordings were transcribed and reviewed. A set of colored pens were used, with each color representing an idea. The transcripts were then searched for recurring words and patterns. Each identified theme was given a unique color. At the end of the process, five colors had been used consistently with several other colors appearing sporadically throughout the transcripts.

When finished, the process of cutting and sorting began. Lincoln and Guba (1985) offered a method for cutting and sorting that involved constant comparison of the data collected. Each instance of a particular color was cut out and spread out on a flat surface. Remaining colors were examined and categorized according to the larger color grouping, which had become identified themes by that point. Remaining colors were determined relevant to the research or so infrequent in reference as to not lend anything to the discussion.

After this process was completed, there were five main identified themes. Under these five main themes, were minor sub-themes. Some of these minor themes created connections between the greater themes identified. Others were very specific to a particular topic. Once these themes were identified and given a common naming structure, the process of was ready to begin a final analysis of the actual statements to gain a deeper understanding of the beliefs and concerns of the participants.

Summary

The goal of this research was to gather data related to the integration of modern communication technologies, specifically social networking and electronic means of delivering information, into the lives of parents in educators in ways that increase engagement and participation in a student's educational experience. Using instruments that asked a variety of questions related to the process during a specified time period, the researcher was able to gauge participation, determine participant comfort levels with technology, usage levels during the study, beliefs and perceptions about the effectiveness of the research, and make determinations on whether the use of these technologies had any impact on the lives of students. This study relied primarily on the experiences and perceptions of the parents and educators involved in the research. Based on the data received, a reader should be able to see how technology use impacted relationships between the various stakeholders involved in a student's educational attainment. The level of participation and interest was also be further subdivided by various measures, including age, socio-economic status, gender,

race, and education level to see if any noticeable patterns appeared. Each of these factors potentially impacted the findings, but these factors may also have been irrelevant if a truly motivated parent or educator was willing to overcome apprehensions that existed related to technology use.

CHAPTER IV

FINDINGS OF THE STUDY

The key purpose of this research was to find a way to incorporate emergent technologies into the educational communication process. The research questions guiding this study were “How do parents and teachers use technological processes to engage in communication?” and “How do parents and teachers perceive technological systems as a means of establishing communication?” There were several objectives supporting general findings about technology use that were tied to the research questions, including:

- determining the impact of technology use on parent-teacher communication
- determining the impact of social networking systems on parent-teacher communication
- identifying ideas, beliefs, and expectations related to the use of technology and technological products on parent-teacher communication

This analysis reflected and correlated to the greater overall trends in technology use as seen by the Pew Generations 2011 report. Technology use was continually changing and growing and the results of this study provided a look at how the trends and changes in technology affected people.

Technology Questionnaire

To gain an understanding of the trends impacting technology adoption and use by educators and parents in a school setting, a questionnaire was designed and a link emailed to a preselected educator and parent population. A list was compiled of 324 parents, with 98 parents completing the questionnaire between April 01, 2011, and November 30, 2011. This provided a 30.2% response rate for parents. A survey for educators was also used, running during the same April to November time frame. However, the questions requesting written feedback did not return as much information as was expected, with a 1%-9% response rate for the various questions. Since no parents were available for a post-questionnaire group interview despite many saying they were interested in the topic, individual and couple interviews were scheduled instead.

This research would not have been complete without educator input; therefore, 12 educators were identified and received invitations to complete the online survey. Of the 12 educators completing the questionnaire, only 8 completed the questionnaire completely and thoroughly. This provided a 66% response rate. Of those 8 respondents, only two teachers answered any of the open ended questions, for a 25% response rate. Several educators contacted the researcher personally and agreed to a conference call that was recorded for analysis.

Questionnaire Results

The questionnaire sent to both parents and educators asked very specific questions related to specific technological processes and efficacies. There were

basic demographic questions designed to help shape the analysis and understanding of the extant data.

Demographic Data

Parents. Among parents, 72% of the respondents were women, with the remaining 28% being men. Men and women in the age range of 31-40 accounted for 43% of all the respondents and those in the 41-50 age range accounted for 33% of the responses. Parents in the age range of 51-60 accounted for 22% of the respondents, which was relatively small, but still far greater than expected.

Just over half of the parents, 56%, had completed a course of education resulting in the conferring of a bachelor degree of some sort. Graduate school educated parents accounted for 33% of the population. There were no respondents with a professional or doctoral degree. Only 11% of the questioned population had attended some college with no degree conferred.

Income varied broadly amongst the respondents. Eleven percent of the population made less than \$20,000 per year. Another 11% self-identified as making more than \$20,000 and less than \$29,999. Of the remaining 76%, 33% made between \$40,000 to \$49,999 and 44% self-identified as making over \$60,000.

Current marital status varied greatly among the parent questionnaire respondents. Almost one-quarter of the respondents, 22%, were separated. Fifty-six percent (56%) were married and 11% each were either single or divorced. This effectively indicated that half of the respondents were managing a single parent household of some sort.

The final demographic question was related to the respondent's race. This provided a surprising result. Of the 98 respondents, there were no African-American participants. Whites accounted for 67% of the respondents, Hispanics accounted for 22% of the respondents, and Native Americans account for the remaining 11% of the respondents.

Table 1

Demographic Characteristics of Parents

	Parents	
	N	%
N=	98	100.0
Gender		
Men	27	28.0
Women	71	72.0
Age		
21-25	0	0
26-30	0	0
31-40	43	44.0
41-50	33	33.0
51-60	22	22.0
61 or Over	0	0
Education Level		
< High School diploma	0	0
High School/GED	0	0
Some College	11	11.0
2 Year Degree	0	0
4 year Degree	55	56.0
Master's Degree	33	33.0
Doctoral Degree	0	0
Professional Degree	0	0
Income		
Less than \$20,000	11	11.0
\$20,000 to \$29,999	11	11.0
\$30,000 to \$39,999	0	0

(Table 1 – Continued)

	N	%
\$40,000 to \$49,999	33	33.0
\$50,000 to \$59,999	0	0
\$60,000 and above	43	44.0
Marital Status		
Single	11	11.0
Married	55	56.0
Separated	21	22.0
Divorced	11	11.0
Widowed	0	0
Other	0	0
Race		
White	65	67.0
Hispanic	21	22.0
Native American ¹	11	11.0
African-American	0	0
Asian-Pacific Islander	0	0

Educators. Among educators, respondents were split evenly at 50% for both men and women. Men and women between the ages of 31-40 accounted for 25% of all the respondents and those in the 41-50 age range accounted for 25% of the responses. The highest respondent group was 50% in the 51-60 age range.

All of the respondents had completed a four-year degree program. Of the 8 total respondents, 75% of them had completed a master's degree in some

¹ The national average for the Native American population hovers at one percent. This figure cannot be explained and may have been due to user error, other unexplained phenomena, or an above average concentration of Native Americans in the target population.

academic field. There were no respondents with a professional or doctoral degree.

Income varied broadly amongst the respondents, but directly correlated to age. Of the 8 respondents, 2 or 25% of the educators earned between \$30,000 and \$39,999. Two other educators (25%) earned between \$40,000 and \$49,999. The remaining 50% of the respondents all earned \$60,000 or more.

Current marital status was evenly divided amongst the respondents, with 50% being single and the other 50% being married. There were no divorced or separated respondent in the educator survey, but this could not be generalized to the population. It was more appropriately a reflection of the low number of respondents and would most likely have mirrored the general population if the numbers were greater.

The final demographic question was related to the respondent's race. This finding was more in line with the researcher's expectations. Half of the respondents, 50%, were white. The remaining respondents were divided equally among African-American and Hispanic at 25% each.

Table 2

Demographic Characteristics of Educators

	Educators	
	N	%
N=	8	100.0
Gender		
Men	4	50.0
Women	4	50.0
Age		
21-25	0	0

(Table 2 – Continued)

	N	%
26-30	0	0
31-40	2	25.0
41-50	2	25.0
51-60	4	50.0
61 or Over	0	0
Education Level		
<High School Diploma	0	0
High School/GED	0	0
Some College	0	0
2 Year Degree	0	0
4 year Degree	2	25.0
Master's Degree	6	75.0
Doctoral Degree	0	0
Professional Degree	0	0
Income		
Less than \$20,000	0	0
\$20,000 to \$29,999	0	0
\$30,000 to \$39,999	2	25.0
\$40,000 to \$49,999	2	25.0
\$50,000 to \$59,999	0	0
\$60,000 and above	4	50.0
Marital Status		
Single	4	50.0
Married	4	50.0
Separated	0	0
Divorced	0	0
Widowed	0	0
Other	0	0
Race		
White	4	50.0
Hispanic	2	25.0

(Table 2 – Continued)

	N	%
Native American	0	0
African-American	2	25.0
Asian-Pacific Islander	0	0

Technology Related Questions

Parents. The body of the questionnaire contained questions measuring a great many factors, including engagement, involvement in extracurricular activities, technology ownership, technology use, comfort with different types of technology, beliefs and perceptions about technology use, technology use for educational purposes, and a variety of concerns based adoption model themed question relating to beliefs and views of the innovation, in this case the use of technology for communication purposes.

Of the 98 respondents to the survey instrument, 44%, or 43, of the respondents stated they had children in middle school, 33%, or 33, stated they had children in high school, and 11% each, or 11 respondents, stated they had children in elementary school or in the other category. Of those same 98 respondents, 78%, or 76 people, stated that they were very involved in the educational development of their children. The remaining 22% were split evenly with a total of 11 persons each stating they were somewhat involved or not very involved in the academic process. Of the 11% indicating they were not very involved, 36%, or 4 people, indicated they had work conflicts, 28%, or 3 people, indicated time limitations, and 36%, or 4 people, specific some other issue preventing them from being involved in their child's educational development.

Some respondents indicated that they were very involved in their children's educational development. Of the 78% indicating they were very involved, the majority of the involvement fell into three categories – academics with 75%, or 57 parents, sports and volunteering with 62% each, or 47 parents, parent teacher association participation with 38%, or 28 parents, and the rest equally split at 12%, or 9 respondents, in the categories of school committee work or identifying as not applicable.

Responses pertaining to use of technological systems to access student information indicated that 89%, or 87 respondents, used their district's online system for examining grade and assignment information. Of the responses, 78%, or 76 respondents, indicated that they use teacher web pages as a source of information for student assignments. Of those 76 respondents, 32 indicated that teacher web pages provided useful information all of the time, 22 suggested that the web pages provide useful information some of the time, and 22 suggested that the web pages rarely provide useful information, with one respondent writing in "to my knowledge, most of my kids' teachers do not have web pages." Furthermore, 89%, or 87 respondents, indicated that they would like to see information online and accessible via electronic mail or mobile device such as an iPhone, Blackberry, or other smart phone.

Parents were acutely aware of engagement and 78%, or 76 respondents, indicated that they would feel more engaged in the educational process if they were aware of assignment information. Only 1 written response was included when asked if he or she wanted to be informed of student assignment

information via an online method, with the following response, “I get enough mail and our children did OK through high school so no need to add more email to an already overloaded system.”

Table 3

Technology Related Questions - Parents

	Parents	
	N	%
N=	98	100.0
What is the current grade of your child?		
Pre-K/Kindergarten	0	0
Elementary School (Grades 1-5)	11	11.0
Middle School (Grades 6-8)	43	44.0
High School	33	33.0
Other, please specify	11	11.0
How involved are you in the educational development of your child?		
Very involved	76	78.0
Somewhat involved	11	11.0
Occasionally involved	0	0
Not very involved	11	11.0
Not involved at all	0	0
If you indicated limited or no involvement on the prior question, which of these choices best describes the reason for this?		
Work conflicts	4	36.0
Time limitations	3	28.0
Limited access to resources	0	0
Negative experience with the school administration	0	0
Other, please specify	4	36.0
If you previously indicated that you were involved on some level in your child's educational development, what specifically are you involved with?		
Academics	57	75.0
Sports	47	49.0
Parent Teacher Association	28	29.0

(Table 3 – Continued)

	N	%
N=	98	100.0
What is the current grade of your child?		
Pre-K/Kindergarten	0	0
Elementary School (Grades 1-5)	11	11.0
Middle School (Grades 6-8)	43	44.0
High School	33	33.0
Other, please specify	11	11.0
How involved are you in the educational development of your child?		
Very involved	76	78.0
Somewhat involved	11	11.0
Occasionally involved	0	0
Not very involved	11	11.0
Not involved at all	0	0
If you indicated limited or no involvement on the prior question, which of these choices best describes the reason for this?		
Work conflicts	4	36.0
Time limitations	3	28.0
Limited access to resources	0	0
Negative experience with the school administration	0	0
Other, please specify	4	36.0
If you previously indicated that you were involved on some level in your child's educational development, what specifically are you involved with?		
Academics	57	75.0
Sports	47	49.0
Parent Teacher Association	28	29.0
School Committee	9	9.0
Parent Volunteer	47	49.0
Not applicable	9	9.0
Other, please specify	0	0

(Table 3 – Continued)

	N	%
The following questions are designed to understand your current knowledge level and adoption of established or emergent technologies. Which of the following do you use for Internet service?		
Cable modem (Roadrunner, etc.)	55	56.0
DSL (AT&T U-Verse, etc.)	33	33.0
Satellite (Dish, etc.)	0	0
Dial-up	0	0
None of the above	9	11.0
Which of the following devices do you own?		
iPhone	22	22.0
Android Smartphone	22	22.0
Blackberry	55	56.0
Laptop computer	76	78.0
Desktop computer	66	67.0
iPod	42	44.0
iPad	0	0
PS3, Xbox, Wii	76	78.0
Other	0	0
Which of the following devices do you use to access the Internet?		
iPhone	22	22.0
Android Smartphone	22	22.0
Blackberry	42	44.0
Laptop computer	76	78.0
Desktop computer	66	67.0
iPod	22	22.0
iPad	0	0
PS3, Xbox, Wii	42	44.0
Other	0	0
Do you use the Internet to access your child's educational information via a website or some other software?		

(Table 3 – Continued)

	N	%
The following questions are designed to understand your current knowledge level and adoption of established or emergent technologies. Which of the following do you use for Internet service?		
Cable modem (Roadrunner, etc.)	55	56.0
DSL (AT&T U-Verse, etc.)	33	33.0
Satellite (Dish, etc.)	0	0
Dial-up	0	0
None of the above	9	11.0
Which of the following devices do you own?		
iPhone	22	22.0
Android Smartphone	22	22.0
Blackberry	55	56.0
Laptop computer	76	78.0
Desktop computer	66	67.0
iPod	42	44.0
iPad	0	0
PS3, Xbox, Wii	76	78.0
Other	0	0
Which of the following devices do you use to access the Internet?		
iPhone	22	22.0
Android Smartphone	22	22.0
Blackberry	42	44.0
Laptop computer	76	78.0
Desktop computer	66	67.0
iPod	22	22.0
iPad	0	0
PS3, Xbox, Wii	42	44.0
Other	0	0
Do you use the Internet to access your child's educational information via a website or some other software?		

(Table 3 – Continued)

	N	%
Yes	87	89.0
No	11	11.0
Do you use your district's online system?		
Yes	87	89.0
No	11	11.0
Do you visit teacher web pages for information?		
Yes	76	78.0
No	22	22.0
If you stated that you do not check teacher web pages, which of the following choices best explains why?		
Work schedules does not permit	0	0
Not interested in accessing student information	0	0
Unaware that information can be access via the	0	0
Previous experience or knowledge that useful	16	36.0
Time constraints that prevent you from being involved in your child's educational development	6	14.0
Other, please specify	0	0
Would you like to see assignment, project, class work, and homework information online?		
Yes	87	89.0
No	11	11.0
Would you like to see assignment, project, class work, and homework information relayed to you via email or a mobile device (iPhone, Smartphone, Blackberry, iPad)?		
Yes	87	89.0
No	11	11.0
As a parent, would you feel more engaged in your child's educational process if you were aware of the assignments your child was given in school?		
Yes	76	78.0
No	22	22.0

Educators. The body of the questionnaire for educators contained questions similarly measuring many factors of the same factors as the parent questionnaire, including the awareness of technology, comfort with various technologies, active use of various technologies, and use of district provided systems to share information with parents.

Of the 8 respondents to complete the educator survey, 5 respondents taught at the elementary level, grades 1 through 5. The remaining 3 respondents taught at the middle school level, with one educator indicating that he or she taught both 7th and 8th grade classes. All 8 of the respondents indicated that they used technological methods to convey student assignment, project, class work, and homework information to parents utilizing the gradespeed system or educator web pages.

Based on the survey results, 100%, or all 8 of the respondents were familiar with using an iPhone, laptop, and desktop computer. Seventy-five percent, or 6 of the respondents were familiar with using a Blackberry, iPad, PS3, Xbox, or Wii system to access the internet. Only 25%, or 2 of the respondents, were familiar with using an Android powered smart phone. Similarly, 75% of the respondents, or 6 persons, indicated that they owned an iPhone and 50%, or 4 persons, indicated that they owned a Blackberry device. This overlap indicated that some of the educators had multiple smart phone devices for communication purposes. Eight persons, or 100% of the respondents, owned laptop computers for their computing needs. 75% of the respondents owned desktop computers and iPods and 25% owned PS3, Xbox, or Wii systems to access the internet.

None of the teachers answering the survey owned iPads at the time the survey was conducted, but some would later acquire the devices.

When questioned about skills and abilities related to particular software technologies, all of the respondents indicated above average to expert proficiency with Word, Excel, electronic mail, electronic mail contact lists, uploading files, attaching files to email, saving files, and using Adobe Acrobat to create portable document format (PDF) files. Half of the respondents were not familiar with using Twitter at all, 25% considered themselves expert users, and the remaining 25% did not know about Twitter as a social networking and communication platform. Interestingly, all of the users were aware of HTML editing, with 25% identifying as not proficient, 25% identifying as somewhat proficient, 25% identifying as above average proficiency, and the final 25% identifying as expert HTML users. Despite all the respondents indicating that the school district online grade management system was used, 25% identified as not being proficient with the system.

All of the educators responded that the sharing of assignment, project, class work, and homework information with parents would have a positive impact on students and parent-teacher engagement. However, time and resources were cited as equally problematic by 38%, or 3, of the respondents. As the research showed, security concerns were present even in this small sampling, with 25%, or 2, of the eight respondents indicating that security was a concern for them. It should also be noted that 100% of the respondents indicated that they would

actively use an easy technological solution to provide parents with educational information.

For further information related to these findings, see the following table:

Table 4

Technology Related Questions - Educators

	Educators	
	N	%
N=	8	100.0
What are the current grade(s) that you teach?		
Pre-K/Kindergarten	0	0
1 st	1	50.0
2 nd	1	50.0
3 rd	1	50.0
4 th	1	50.0
5 th	1	50.0
6 th	2	100.0
7 th	1	50.0
8 th	1	50.0
9 th	0	0
10 th	0	0
11 th	0	0
12 th	0	0
Do you use any technological methods to convey student assignment, project, class work, or homework information to parents?	3	28.0
Yes	8	100.0
No	0	0
Which of the following devices are you familiar with using?		
iPhone	8	100.0
Android Smartphone	2	25.0
Blackberry	6	75.0
Laptop computer	8	100.0
Desktop computer	8	100.0
iPod	8	100.0

(Table 4 – Continued)

	N	%
iPad	6	75.0
PS3, Xbox, Wii	6	75.0
Other, please specify	0	0
Which of the following devices do you own?		
iPhone	6	75.0
Android Smartphone	0	0
Blackberry	4	50.0
Laptop computer	8	100.0
Desktop computer	6	75.0
iPod	6	75.0
iPad	0	0
PS3, Xbox, Wii	2	25.0
Other	0	0
What is the greatest barrier you face when using technology in the classroom?		
Time	3	38.0
Resources	3	38.0
Ease of use	0	0
Security issues	2	25.0
Other, please specify	0	0
What is the greatest barrier you face in using technology to communicate with parents?	22	22.0
Time	0	0
Resources	2	25.0
Ease of use	0	0
Security Issues	2	25.0
Other, please specify	4	50.0
Do you believe that providing assignment, project, class work, and/or homework information to parents will have a positive impact on students?		
Yes	8	100.0
No	0	0
Do you believe that providing assignment, project, class work, and/or homework information to parents will have a positive impact on parent-teacher relationships?		

(Table 4 – Continued)

	N	%
Yes	8	100.0
No	0	0
Do you regularly update your existing teacher webpage with assignment, project, class work, and/or homework information for parents?		
Yes	5	63.0
No	3	37.0
If you were provided with an easy technological solution that could relay assignment, project, class work, and/or homework information to parents, would you regularly use it?		
Yes	8	100.0
No	0	0

Concerns Based Adoption Model Themes

Parents. The CBAM themed questions showed a significant amount of depth and knowledge about the innovation and issues pertaining to the use of technological solutions to improve parent-teacher communication in schools. When asked if they knew what the innovation was, 56%, or 55 respondents indicated that they knew about the innovation. No respondents were unaware of the existence or purpose of these technologies with 89%, or 88 respondents, indicating that they had knowledge of the technological solutions being proposed. 66% indicated that they were unsure of other solutions or innovations and the remainder believed that they may have some idea of an innovation that could be beneficial.

When asked if their knowledge of the innovation was limited, over half indicated it was not. The same held true when asked if they would have enough

time in the day to participate in the innovation, with 55% of respondents suggesting that time was not an issue for them. 61% stated that they did not feel that conflicts between their current responsibilities and interests would be problematic. Similarly, people were not concerned about enough time in the day to receive information via mobile device, were interested in discussing the possibility of implementing such an innovation, were unconcerned about the resources needed to adopt the innovation, were unoccupied by other activities, were not interested in knowing if the innovation was better than what they were currently using, and were interested in learning about the innovation. Based on the response rate, ranges ranged from 40% to 90% in favor of the innovation.

For further information related to these findings, see the following table:

Table 5

CBAM Themed Questions – Parents

	Parents							
	Irrelevant to me now		Not true of me now		Somewhat true of me now		Very true of me now	
	N	%	N	%	N	%	N	%
N=	98	100	98	100	98	100	98	100
I don't even know what the innovation is.	55	56.0	43	44.0	0	0	0	0
I know of some other approaches that may work better.	10	10.0	55	56.0	33	33.0	0	0
I have a very limited knowledge about this innovation.	33	33.0	55	56.0	0	0	10	10.0
I am concerned about conflicts between my interests and responsibilities.	25	25.0	61	62.0	0	0	12	12.0

(Table 5 – Continued)

	N	%	N	%	N	%	N	%
I am concerned about not having enough time to organize myself each day.	22	22.0	55	56.0	21	22.0	0	0
I would like to know who makes the decisions for such a system.	33	33.0	21	22.0	11	11.0	33	33.0
I would like to discuss the possibility of using the innovation.	11	11.0	55	56.0	21	22.0	0	0
I would like to know what resources are available if this innovation is adopted.	11	11.0	22	22.0	22	22.0	43	44.0
I am concerned about my ability to manage all the innovation requires.	33	33.0	33	33.0	21	22.0	11	11.0
I am completely occupied by other things.	43	44.0	55	56.0	0	0	0	0
Although I don't know about this innovation, I am concerned about other things about this idea.	43	44.0	43	44.0	11	11.0	0	0
I would like to know what the use of the innovation will require from me in the immediate future.	22	22.0	22	22.0	43	44.0	11	11.0
I would like to have more information on time and energy commitments required by this innovation.	22	22.0	43	44.0	11	11.0	22	22.0
I would like to determine how to supplement, enhance, or replace this innovation.	37	38.0	25	25.0	25	25.0	11	11.0
I would like to know how my role may change when I start using the innovation.	25	25.0	25	25.0	25	25.0	25	25.0
I would like to know how this innovation is better than what I use now.	21	21.0	11	11.0	33	33.0	33	33.0
At this time, I am not interested in learning about this innovation.	21	22.0	33	33.0	11	11.0	33	33.0

Educators. As with the parent surveys, the CBAM themed questions showed a significant amount of depth and knowledge about the suggested innovation and issues pertaining to the use of technological solutions to improve parent-teacher communication in schools. Due to the fact that there were only 8 respondents, it should be noted that further research was warranted, thus the need for personal interviews with educators. These interviews would shed more light on the perceptions gathered by the survey questions.

Of the questions asked, all of the respondents had some level of knowledge of the innovation, with 25% indicating that they had some knowledge of the innovation and 50% indicating that they had knowledge of the innovation. 25% indicated the question was irrelevant to them, which upon questioning in the interviews was determined to mean that they knew what the innovation was but did not think being asked about their knowledge was a relevant question. Two of the respondents, or 25%, also indicated that they either did not know of a better way to approach the situation of increased parent-teacher communication via use of social networking and technological solutions and the remaining 6, or 75%, indicated that they had some ideas of what might work better, but could not accurately articulate the thought (based on interviews).

Further examination of the data revealed that 75% of the respondents were interested in having more in-depth conversations about the innovation and what it entailed, specifically relating to time and work commitments. All of the respondents indicated that they wanted to know what resources were available if the innovation was adopted and 50% were actively concerned about their ability

to manage the requirements of implementing this innovation. The remaining 50% were equally divided between being concerned about the time requirements and not being concerned at all. Across varying degrees, each of the respondents was interested in hearing more about the innovation and hearing about why it was better than the solutions that they currently used. No one indicated that they did not want to hear more or were not interested in the technological innovation, but the results did indicate that there were mixed feelings about the nature of the innovation, at least in the context of the CBAM themed questions as they were stated in the survey. Based on the personal interviews that followed this process, it was determined that the CBAM themed questions may not have been as clear as necessary as the general consensus was that the innovation was good, but was fraught with difficulties that could make implementation difficult.

For further information related to these findings, see the following table:

Table 6

CBAM Themed Questions – Educators

	Educators							
	Irrelevant to me now		Not true of me now		Somewhat true of me now		Very true of me now	
	N	%	N	%	N	%	N	%
N=	8	100	8	100	8	100	8	100
I don't even know what the innovation is.	2	25.0	4	50.0	2	25.0	0	0
I know of some other approaches that may work better.	0	0	2	25.0	6	75.0	0	0
I have a very limited knowledge about this innovation.	0	0	4	50.0	2	25.0	2	25.0
I am concerned about conflicts between my interests and responsibilities.	2	25.0	4	50.0	0	0	2	25.0

(Table 6 – Continued)

	N	%	N	%	N	%	N	%
I am concerned about not having enough time to organize myself each day.	0	0	4	50.0	2	25.0	2	25.0
I would like to know who makes the decisions for such a system.	0	0	2	25.0	2	25.0	4	50.0
I would like to discuss the possibility of using the innovation.	0	0	2	25.0	4	50.0	2	25.0
I would like to know what resources are available if this innovation is adopted.	0	0	0	0	4	50.0	4	50.0
I am concerned about my ability to manage all the innovation requires.	2	25.0	2	25.0	4	50.0	0	0
I am completely occupied by other things.	0	0	4	50.0	2	25.0	2	25.0
Although I don't know about this innovation, I am concerned about other things about this idea.	2	25.0	6	75.0	0	0	0	0
I would like to know what the use of the innovation will require from me in the immediate future.	2	25.0	2	25.0	2	25.0	2	25.0
I would like to have more information on time and energy commitments required by this innovation.	0	0	2	25.0	4	50.0	2	25.0
I would like to determine how to supplement, enhance, or replace this innovation.	2	25.0	4	50.0	2	25.0	0	0
I would like to know how my role may change when I start using the innovation.	2	25.0	2	25.0	3	37.5	1	12.5
I would like to know how this innovation is better than what I use now.	0	0	4	50.0	2	25.0	2	25.0
At this time, I am not interested in learning about this innovation.	2	25.0	4	50.0	2	25.0	0	0

Educator Profiles and Personal Interviews

In order to understand the nature of the data gathered, it was important to have conversations with multiple survey participants about their experiences and views about technology integration in the everyday lives of their students, both as an academic and communication tool. A total of five interviews were conducted during the fall of 2011, including one group interview. Each was conducted as an individual discussion focusing on issues related to technology and technology used for the purposes of communication. The format was unstructured and the participants were only partially aware of the nature of the conversation, as it was important to capture authentic responses to questions related to technology adaptation, use, and interest. Each of the interviewees was asked a series of questions related to his or her use of technology, technology ownership, and his or her overall interest in using technology for communication or other purposes.

The first interview was with a group of four teachers and one administrator in September of 2011. After some brief introductions and a general meet and greet, the discussion immediately veered to the use of technology in the classroom. Each participant had differing views about the roles of technology use in a school system. Due to the nature of the group interview, it should be noted that interviewee responses may have been limited. The one constant source of agreement between all the participants was that in their respective school systems, technology adoption and use was greatly lacking. Each lamented the fact that the technology systems currently being used in their respective schools were older and somewhat cumbersome. While some had received new

computers, the greater concern was the difficult to use interface that they are required to use. Ideally, individual teacher interviews would have been better to capture less constrained responses, such as those in a group setting. However, circumstances beyond researcher control excluded this as a possibility.

Lori

Lori was a single, white doctoral student in an on-line program and regularly used technology as a means to communicate with her classmates. Beyond this, she was a parent to a teenage daughter that had become adept at using technology to communicate. Rarely did she participate in face to face communication for her needs, preferring technological solutions to communicate. This had become second nature for her. Her views of technology use were generally aligned with the views of the researcher, that technology was a tool that could facilitate communication and engagement and create a more involved parent. However, she also taught in a local middle school and understood the limitations that came with the use of technology.

As a power technology user, Lori had an Android powered smart phone (recently upgraded from a Blackberry), laptop, personal computer at her home, and a personal webpage. She regularly used blackboard and SharePoint for communicating assignments and information with her classmates in her doctoral program. She estimated that a majority of her time was spent using technology and she described herself as extremely comfortable with using existing technology and learning new technology, but did acknowledge that this was not always the case for her and admitted to having a period of time when adapting to

technology use was difficult. She regularly used the mobile Facebook application on her phone to see what her daughter was posting or thinking and stated that she regularly used text messages as a more discreet way of communicating than actually talking on the phone.

Beth

Beth was a married, white, early 40s middle school assistant principal and a parent to an elementary school aged son. She wanted to see improved communication, but also was uniquely positioned to understand the limitations on teachers' resources and time as she had to monitor these issues on a daily basis. She understood how to use technology, but readily admitted that technological efficacy existed on many levels of the spectrum in her school and she could not justify the extra time necessary for learning these systems when there was a new standardized testing system in place that all Texas schools had to now contend with that was in its first year of use.

Beth stated that she used technology to carry out the duties of her job. She regularly emailed her superiors and communicated with her husband in this format. She had an iPhone, but had not used all of its enhanced capabilities at the time as it was new to her and she was still learning all of its features. They had a laptop computer, personal home computer, a Nintendo Wii system that was internet capable for their son and a Microsoft Xbox for her husband. The Xbox was internet capable as well, though neither used it for the purpose of surfing the web. She used a Facebook profile to communicate with her family and friends on a regular basis.

Miriam

Miriam was a single, childless middle school teacher of Middle Eastern descent. She was in her late 20s and was currently childless. Having entered the profession later in life, she was only in her second year teaching and remained idealistic about the role she had in the lives of young men and women.

Communication was critical in her role as she felt that communicating with parents would help bridge some of the gaps that she perceived to exist in the system, but she admitted to being limited on time and resources and found it difficult to dedicate the time to communication when she was struggling to keep the attention of the students.

Miriam was a power technology user in her personal life. She owned a laptop, desktop, and an Apple iPad and iPhone, having recently received the iPad as a gift. This was her fourth iPhone out of the five current models released at the time of this writing. The iPad and iPhone were her primary sources of computing power and she readily admitted to spending less time on her other computing devices because of the Apple products. She could do all of her computing on the go and was regularly checking Facebook, updating her Facebook page, checking email, and keeping track of her personal life on these devices. She described herself as plugged in, but in a mobile sense, and readily admitted to the ease with which she used the various mobile applications on her devices making it easier for her to be considered technologically adept.

Karen

Karen, a white mid-40s woman, was not a teacher. She was a curriculum developer who assisted multiple schools with developing curriculum for their classes. Technology was second nature to her and was the regular means of communicating new ideas and concepts to the faculty she served. There was a great deal of frustration on her part when the people she served did not readily understand the various technologies she would like to see used in the classroom, despite the resources being present in her school district. Karen believed that technology was only as good as the people that were teaching others how to use it and worried that it could be misused in educational settings.

Karen was extremely comfortable with technology. She used a Blackberry smart phone. She preferred the security afforded to her by Blackberry email and securing messaging. She stated that she was considering making a jump to the iPhone, but as a longtime Blackberry user, the transition was going to be difficult. She was accustomed to an actual keyboard on her mobile device. She had a laptop at home that she used for her computing needs. Since she worked on computers for most of the day, her need to be online during her personal time was not as great. She was a proponent of technology, but recognized that there were limitations that people may encounter.

Cathy

Cathy was an African-American (who preferred not to divulge her age) instructional aide in a low socio-economic school. Her honest assessment of this was that she works with poor children who have very few resources outside of

the school to successfully complete their homework. In her job, she assisted the main classroom teacher and had the ability to observe the interactions between parents, students, teachers, and administrators. While not a certified educator, she did have aspirations to become a teacher when the job market and her financial situation improved.

Cathy characterized herself as technologically capable, but wary. She was concerned that having her entire life on a mobile or portable computing device could be problematic if that device were lost, stolen, or damaged. Due to her limited budget, she had to be careful with how she spent her income, but still found the money in her budget to have a smart phone. She used a third generation iPhone that she received free of charge when she signed with her mobile carrier, benefitting from a new incentive program to attract smart phone users with low-priced or free units. She had chosen the lowest priced data plan. She did not download many applications and used the phone so she could stay current with family and friends. Her mobile device did have the Facebook application and she did use it to update her profile. She also owned an older model laptop, but stated that she did not use it for more than checking her bank account and writing documents for her use in her job duties.

Parent Profiles and Interviews

The five remaining interviews were conducted individually with a random purposeful sampling of parents chosen to represent the key demographics needed to understand and frame the discussion.

Robert and Suzanna

Robert and Suzanna were a married Hispanic couple raising two young children. Robert was formally a teacher and Suzanna worked as a technology professional. They had differing views on parenting as Suzanna had been a single parent for most of her children's lives and Robert had only dealt with children via extended family or through his interactions in the classroom. Suzanna was eager to utilize technology for communication purposes. Robert utilized technology to communicate with friends and family, but did not see technology as a tool that will make a huge difference in the classroom.

Robert and Suzanna were both owners of the latest iPhone model, currently the 4S. They upgraded immediately upon release. They had two home computers, as Suzanna was a technology professional that developed web pages and preferred to keep her work separate from the home computer. They both encouraged the children to use technology as well. Robert stored his vast music collection on the iTunes Match musical cloud service. They were considering the purchase of an iPad as it would allow them more flexibility. Both were avid Facebook users and they posted their wedding photos online for guests to view and copy to their own computers.

Danny and JoAnna

Danny and JoAnna were a Hispanic couple that had been married for 13 years and had 3 children ranging in ages from 7 to 14 at the time of the interview. Danny worked for an investment firm and JoAnna was a local school administrator. Danny focused on issues with real world implications, generally

dealing with finance and investments. JoAnna was passionate about education, but found that discussions about the issues during her personal time impeded on her ability to parent her children and preferred to leave those discussions in the school. She advocated for her children and generally took care of academic issues while Danny preferred to handle issues related to their retirement and personal finances.

Danny and JoAnna were heavy technology users. Danny regularly used a powerful desktop computer to create financial forecasts and JoAnna actively used technology in the duties of her job. They both owned smart phones, but had yet to purchase Apple iPhones. They both indicated that they were going to make the switch to the iPhone as most of their friends were current iPhone owners and the new iMessaging service would reduce their cellular phone bill by removing the family texting plan. They had a family Facebook page and regularly updated it so that friends and family could keep track of their children and see new pictures and read new updates about the children's exploits. Aside from Facebook, they regularly used technology to check their bank balances and access email. Danny was also an online gamer. He used his Xbox system to regular play networked based games. The entire family was extremely comfortable with technology use.

Josh and Jenna

Josh and Jenna were a late 20s, White, and engaged to be married couple planning on children as soon as they settled down in their new home in North Carolina. Josh was a military aviator and Jenna was a technology

company account manager. She was able to work remotely after Josh received transfer orders to leave the state of Texas. She utilized technology to maintain her accounts and communicate with her clients. Her company was actually moving towards a model that allowed employees to work from home. Josh regularly utilized technology to maintain contact with her and other family members during extended deployments overseas.

Josh was very well versed with technology. As a Marine aviator, he used advanced communication and terrain mapping technology. In fact, the military had begun updating and upgrading strike fighter cockpits with Apple iPads. He also used computers and mobile devices to communicate while on deployment overseas. He was most comfortable with email, but also used Facebook, Twitter, and Skype for video conferencing. Jenna was an account manager for a major Central Texas technology manufacturer. She regularly used her laptop and Blackberry for work related purposes. Both owned iPhones and used them to update their Facebook pages and to send multimedia text messages. Their stated goal was to make their children technologically literate, as they both understood the need to incorporate technology into curriculum as that was the primary means of communicating in both their respective jobs.

James and Sarah

James and Sarah were a mixed race African-American and Hispanic couple that lived in the Houston area with one preschool aged child. Sarah maintained an office job in a Houston law firm and James was an engineer in the oil industry. They both regularly used technology to communicate, as James

often times worked offshore on oil rigs in the Gulf of Mexico. Both admitted to growing up poor and facing significant challenges to advance academically and continued to face issues as a mixed raced couple with a biracial child. They were very involved in their son's academic progress, as they knew that a biracial child still faced prejudicial treatment in modern society.

James and Sarah were both iPhone 4S owners. They preferred to have the latest technology. It was often difficult communicating as children with family members and they both relished the fact that it was so easy to communicate now. They had a laptop and desktop computer in their home. Their child was being taught to use the technology from an early age and his preschool regularly incorporated technology into the curriculum. Both James and Sarah used Facebook to communicate with family and friends, but he regularly used Twitter to update Sarah on his daily life, as he was sometimes required to spend significant amounts of time offshore and could always be on the phone or computer with her. This allowed them to stay connected with the significantly less effort than making phone calls.

Common Themes

Once the final interviews were conducted, an analysis was undertaken to identify key themes and words that were used to describe issues pertaining to the topic. Each interview provided a unique perspective into the issues faced by the various participants. Out of this analysis the following themes were identified – training, time, resources, access, and motivation.

The findings were mixed, but these main themes became the common thread. Each respondent alluded to each of these themes in various ways and indicated, both directly and indirectly, that these issues were relevant and topical to them. It should be noted that despite the concern that society was becoming too disconnected from each other due to the use of Facebook, electronic mail, text messaging, tweeting, and the use of other social networking systems, each of the respondents indicated that they actively used social networking technologies and smart phones to for the very purpose that they feared.

Training

Each of the educators had different levels of training related to technology. As this dissertation focused on the use of social networking technologies to bridge communication gaps and further the Transparent School Model research, the conversation was focused on these technologies. All of the teachers interviewed in the group setting knew about and used Facebook and Twitter to varying extents, as did all of the couples interviewed individually. Among the educators, Lori was the heaviest user of these systems. All teacher and parent interview participants had Facebook pages and all regularly updated their Facebook status with the express intent being to communicate happenings with friends and families. Robert stated:

I have 9 brothers and sisters. They are spread out over the country. We do not always have the ability to talk to each other. I also like to see how my former students are doing. Now that they are older and have moved on to college and other aspects of their lives, I can keep track of them this way. But

it was hard for my mother to use Facebook. We are all on the system, but she refuses to use it. Instead, she drives to Austin or we drive down to see her.

She just thinks it will take too much time to learn and she prefers to volunteer her time with her various causes.

While this is a limited sampling, each interviewee identified the system as being used to communicate new events and occurrences in their lives with people that they did not regularly see. However, a key theme was navigating the rules and policies that Facebook regularly updates. Beth, an assistant principal, stated:

Facebook is a great tool. I regularly use it to communicate with family and friends. However, I cannot see using it in a classroom setting. It isn't because I do not think it can work, it is because the rules for such use would be daunting to create and would have to be constantly monitored as Facebook is always changing its privacy statement. Because we are dealing with children, we have to be very careful about what information is made available. This is not just a safety issue, but a matter of federal law. Who will train people on this? What teacher or principal or counselor has that time? I like the thought of it, but I just don't think it is practical.

Josh and Jenna had to be especially careful about their postings, as Josh had to maintain strict operational security in his role as a military aviator. Jenna stated, "The Ombudsman told us to be careful about our posting to family and friends about military deployments." Danny had to be careful not to disclose financial information that compromised his position in the field of investments. The other couples were careful to not share too much personal information on

these sites either. Several used Twitter as means to quickly communicate with each other about mundane things or happenings in their immediate world. James found it easier to tweet discretely than to make a phone call while on a rig. There was no explanation for their rationale other than simple conditioned behaviors. Each indicated that there was a learning curve to using the technology and understanding the rules that govern the systems. One thing that each of the respondents agreed on was the complexity of the privacy policies and the ever changing Facebook policies and technologies that made them have to go and review every aspect of their pages to ensure they were maintaining the privacy that they personally wanted. The educators interviewed admitted that the continuously changing policies were a major factor in their reluctance to use such a system for communicating any school related information.

Training was the best term to describe the various challenges that users faced when utilizing social networking systems. As all were familiar with the systems, training on the use of the actual systems was not the issue. It was the intangible aspects of using the systems that were of concern to many and the way in which the systems were continually changing their terms of use agreements. Issues of security and comfort with the technology were problematic for all the participants. Beyond this, external issues presented themselves as reasons that, in the case of Robert, his older mother did not take the time to learn the technology. Other interests and desires were taking up time available to learn a new system. There was simply no motivation to learn the skills necessary to utilize the systems.

Time

Time was a critical issue for each of the interviewees. All of the respondents faced time constraints of some sort, either based on career requirements, family obligations, or being socially engaged in other activities. They all had limited amounts of time to dedicate to social networking sites. For the educators, time was not on their side. Lori stated, “Grad school, teaching, and a teenage daughter. There are not enough hours in the day to do everything I want to do.” Each had unique responsibilities related to grading, administration, individual academic work, parenting, and life in general, as Lori summed up in her succinct statement. Their time was already stretched thin. Spending time reviewing new policies and procedures was counter-productive and in some cases, making them move away from the world of Facebook. Beth stated:

In the end, we just don’t have time to implement such a system. We have too many procedural and policy issues that would need to be addressed and we are in the business of educating children. While I may personally like it, I have a responsibility to the children, parents, and teachers in my school that is more important at this time than the possibilities.

Rather than trying to understand the new policies, they simply used the system less. Lori took the time to read and understand the policies, but she regularly used the system as part of her academic endeavors. Despite this, Lori had expressed dismay with the ever changing rules of such systems. Robert and Suzanna were power Facebook users, having recently uploaded all of their

wedding pictures on-line, only to discover that certain friends were reluctant to have their photos posted on the internet. Said Suzanna:

One guest at our wedding asked us to remove pictures of him and his new girlfriend from Facebook. He did not want the pictures to be made public.

Apparently, he had another girlfriend that knew he went to the wedding and she might have found a way to see the pictures. He did not want to deal with that. So, we had to deal with removing the pictures. It is easy to upload them, but not so easy to permanently delete them.

The time it took to sift through the photos and remove pictures of certain persons in their wedding parties was cumbersome and annoying to them individually, but they had to respect the wishes of their guests. When asked if they had guests sign a release document so their pictures could be uploaded, both failed to indicate that they had given that option any thought. Cathy, the teacher's aide, had little time to update her page, as she worked not only for the district, but had a part-time job as well to make ends meet. According to her, "I am trying to get ahead. I have to pay bills and reduce my debt. I do not have time to be online that much." Without the additional income, she would not be able to pay her monthly obligations. While she would have liked to devote more time to her on-line presence, she had to determine what on-line presence best suited her and that has been her Linked-In profile, which allowed her to build professional relationships, and was less social in nature.

The resounding sentiment was that various life events prevented these people from dedicating more time to their on-line presence. There was not a lack

of desire to learn to use technology, just a lack of time and knowledge to research all the possibilities that existed or to determine ways that the technology could be used more efficiently. Both the issues of training and time were, in some cases, negated by the fact that some schools are lacking the resources to implement programs that utilize social networking systems for educational communication. Beyond that, teacher advocacy groups were suggesting that teachers may be overworked and not as interested in creating new programs that teachers would have to learn. In short, the next theme discussed proved to have a significant impact on the innovation for a variety of reasons.

Resources

A common theme identified amongst all the interviewees were resources, although the strength of this theme varied between the couples interviewed and the educators interviewed. Parents indicated that they had the technological resources to adapt to a program that utilized social networking systems to communicate general work-related information. If there was a need for a device, they simply bought it, salary permitting. As each of the parents had the necessary technology already or the ability to purchase technology as needed, they understood this issue, but did not frame it as a concern.

From an educator perspective, the concept of resources was two-fold, personal and professional access. Each of the teacher interviewees had a computer and had the personal resources to utilize such systems. Even Cathy, who openly stated she had a part-time job and was trying to better her financial situation, had an entry level iPhone with a basic data plan. The resources they

had available in the classroom presented a different problem. Acquiring new equipment was not as easy as going to the local retail outlet and purchasing the needed technology. Three of the educators interviewed indicated that they did not have the resources readily available to scan and upload documents to the internet. Cathy stated:

I work in a poor area of the city. The school claims to have equal access to resources as every other school, but there is no way you can compare my school to a school like Zilker. When a teacher there does not have something, I have heard parents provide it. When we do not have something, we just do not have it. If my parents had the technology to see these documents, I would still have to go down to the library, scan everything in, email it to myself or try to upload it from the office there. I wish I had the ability to do it from my class, but I do not.

Whether it was a scheduling issue with a software specialist or a corrupted version of the software install, two interviewees said that their versions of Microsoft office were not functioning properly. As the most common document to upload would be a word file or a PowerPoint file, this presented a problem for them. Miriam stated, "Word is not printing PDF documents. PDF is free and I want to be sure parents without access to Word could see documents I send. It needs to work right."

Beyond this, the individuals indicated that during their Facebook use they had not found a way to upload anything other than pictures to the system. For the innovation proposed by the researcher, this would be problematic, as the

preferred file type to use would be Word or Portable Document Format (PDF) for longer assignments. In this sense, they would not have the necessary resources to utilize technology in the way proposed. It would require the use of a system similar to Dropbox or some other cloud based storage device, such as SharePoint, that would provide parents with access to documents. Lori was an advocate of such systems, stating:

Using a SharePoint or Blackboard site would be wonderful, but the reality is that the district does not use such technologies. Not only that, but the prevailing notion is that those systems are used by academic institutions for academic institutions, i.e., students in college. While I used blackboard to communicate with my classmates, I do not really see parents using it to stay abreast of the goings on in the classroom. So, we have Gradespeed, a system that allows us to post grades and assignments. I can't speak for everyone, but I know that that I get frustrated with the system and I use technology on a daily basis.

Educators had access to teacher web pages that could be used to deliver documents, but they all agreed that the system was difficult to use and they did not have the time to dedicate to learning the system in the way they should.

The distinction between the themes began to overlap at this point. While resources were critical, it was inferred that the time needed to master the existing solutions being used in Austin schools was greater than the benefit provided by the solution. This insures that the use of the existing systems will be minimal and

a cursory search of AISD teacher web pages indicated that many only had basic information present.

The couples interviewed fared much better on the issue of resources, but had no need to send documents or post items on-line other than family photos or the occasional family newsletter. For these people, resources were not critical, but nevertheless, one that they acknowledged existed. Danny and JoAnna both indicated that they grew up in families with limited incomes. JoAnna stated:

Neither of us had much growing up. But, hard work and being dedicated allowed us to reach a certain comfort level. Now, we are able to provide for our children and our families when they have need. Some may say it is excess, but we work hard to have the things we do. As a principal, I also see the other side of it; there are those that do not have the resources. It is much harder for them to buy computers and iPads and other devices. They struggle to make ends meet. I do not expect them to have these things. I can see the benefit of using technology to communicate, but there are just too many parents who do not have the ability or the money to get these devices and I am afraid it would not benefit them in any way.

When questioned, each couple indicated that they had either an iPhone, Blackberry, or Android smart phone. Three of the four couples had iPads, and two of them regularly used the cloud feature that Apple recently introduced into the market. Each respondent indicated that they had some type of multi-function printing device that allowed them to scan, copy, and fax. This transcended their demographic groups and financial status, as not all of them were well to do. In

fact, each indicated having to tighten their budgets due to the recent economic downturn that had occurred in the United States. When asked for more detail, Robert and Suzanna summed it up best with the statement:

Before our relationship, we had individual expenses. I never had to worry about kids because I had none. Suzie had to worry about kids, so she lived at home to conserve money. Being together means that I do not get to go to concerts and shows like I like to because that money goes to the welfare of the children. It is a sacrifice that I knew would have to be made. We need to get a bigger home, bigger car, spend more for groceries, combine our money for clothes, and all the other expenses associated with a family. It is a big of a shock, but we have become smarter in our spending. We both have iPhones, but it came at the expense of something else. I was a teacher, so I know that not everyone can be lucky enough for that, and Suzie works with technology, so there is some need to have these devices. I can see both sides and I am just not sure which one I believe in anymore. As a teacher, I think it is ridiculous to say that technology can make a difference. As a technology user, I can see how easy it makes it to stay connected.

The common answer was that children necessitated more expense. A larger home, a different personal vehicle, multiple other expenses associated with raising children, and losses in their retirement funds had made them more careful about spending. So, despite having financial concerns, they did still have the resources necessary to utilize technology to their benefit if they chose to do so.

The bigger issue that was discovered was that schools did not always have the resources needed to effectively utilize technology for communication purposes. If they did, the software systems they had were either cumbersome, antiquated, or not working properly. Unlike the parents interviewed, teachers were not able to simply go and buy new technology to place in the classroom. If they did, it was at risk to them, both financially and professionally, especially if the administration determined that some rule was violated by bringing unauthorized technology into the classroom.

Access

Of all the common themes, access was the weakest for the couples and the strongest for the educators. When discussing resources, a notion of unauthorized technology in the classroom was presented. Technology could be used for multiple purposes. School districts installing technology resources in classrooms had loaded specific software, log-in protections, firewall programs and a myriad of other checks against unauthorized student access. Personal technology would not have those protections.

Four of the five teachers interviewed framed access as the physical manipulation of technology. Cathy framed it as an issue of access due to financial status, but acknowledged that even with the limited technology at her school, she had to be mindful of what children were viewing on any given day.

From an educator perspective, access in the classroom had to be well protected. Access for them was not simply having the technological resources present in the classroom and working. It also meant having the necessary time to

utilize these technologies in a way that would be beneficial to the educational and parental communication process without disturbing existing practices. Dealing with academic, personal and behavioral issues in the classroom meant that there was less time to dedicate to technology use. Several indicated that leaving the system logged in was inviting disaster. If focus was lost on the technology, a student could wreak havoc with the system in little to no time. Miriam recounted:

I was reviewing a colleagues Facebook page when I noticed statements that seemed out of character for him. After reading more, I realized that this could not be my friend, not because the statements were out of character, but because the language was poorly written and structured and did not reflect his ability to write. I immediately texted him to check his profile page because the statements on it were particularly offensive. He messaged me back later that his page had been hacked into by a student and that the student admitted to playing a prank on him. Luckily, he caught it in time. I cannot imagine what would have happened if someone else had seen it and reported the things said that day.

While the offending entries were deleted, the memory stuck with her and made her more careful about leaving passwords stored in memory or her back to her computer for too long.

Karen had access to technology, but saw that the people she was serving were hard pressed to utilize the curriculum she recommended in the way she envisioned it because of limitations in the classroom. Karen stated:

It was always difficult to get my co-workers to use the technology they had in the classroom beyond what was required of them. I would repeatedly suggest new and interesting ways to utilize the technology, but was often met with reluctance. I finally asked a friend working in the school why and she stated that they had not all received the technology in the rooms or that if they had use the technology, it was not always configured properly. I know that our technologists worked to make each classroom functional in the same way, but I also understood that to some people, an easy use device may not be so easy to use. I think some were limited because of their lack of training, others due to technological issues beyond their control, and still others just lacked the time or energy to go that extra mile.

For Karen, the ideal vision of technology use often clashed with the reality of what teachers faced in the classroom. Lori was more measured in her response, as she had been around students that were very skilled at using computers. She stated, "A capable student does not need much time to wreak incredible amounts of havoc on a computer system. You have to be very diligent around technology."

In this case, access meant literal access to the educators. The act of the student being able to physically manipulate computers was more problematic for teachers. Parents viewed it as not having the resources to access technology, so this was not as relevant to the parent interviews. All of the couples had access and the resources to utilize technology to communicate. Still, many of them were focusing on other aspects of their lives. For some, it was parenting, others it was

advancing their nascent careers, and others still it was developing their interpersonal relationships with each other as they embarked on a new life.

While technology was important to each of them, four out of the five educators described the occasional feeling of being burned out from having to use technology all the time in their everyday lives. Six of the eight parents indicated that they were suffering from technology overload at the end of their work week. They preferred to be disconnected from technology at home when they had family time on the weekends. These views tied in closely to the final identified theme of motivation. For some, technology had become a necessary part of their lives. For others, it had become a constant distraction that served to undermine other goals they had.

Motivation

Motivation was briefly alluded when reviewing the access theme. In fact, this theme was most closely associated with access. Aligning the findings for the access theme, four of the five educators interviewed mentioned motivation as an issue for them. Miriam was the only one that did not consider a lack of motivation to be an issue. She stated, "I use my iPhone everyday. I would be lost without it. I can use it discretely whenever I have a need, even in class." Five of the parents indicated that they were not motivated to use technology outside of their daily requirements at the office, with Suzanna, Robert, and Jenna indicating that they had just become accustomed to using technological devices despite being aware of the fact that they might be using them too much. Said Suzanna, "Rob and I have been in the same room texting each other. It is just easier to say things that

way sometimes.” Danny was required to review financial reports and stock trends daily, which caused him to get tired of using a computer. However, he said that he would still actively use technology, especially during the sports season to stay in contact with his fantasy football league friends. Due to having used technology so much, many just shut down when they had the chance. The best way to describe this was to say they were burned out on using technology after a busy day. Josh stated:

I am sitting in a cockpit for several hours a day. When I am not in the cockpit, I spend time in the simulator working on my flight skills. When I am not doing that, I am sitting at a computer terminal writing up my mission reports or writing evaluations of junior pilots. I get tired of looking at screens after a while. You would be surprised how relaxing it is to just look at the ocean sometimes.

James used a computer to calculate figures all day when he was in the field, taking precise measurements and calculating various engineering related factors on a daily basis. James said:

I have a demanding job. Being in the field means I am always needing to be aware of safety and monitoring the rig. I just do not have the time to be checking email or surfing the computer. However, I do have moments when I can look at my phone. I have a minute or two to myself when I am moving from place to place on the rig. That is when I send a brief message or check my messages to see what is going on. We have found that we can stay in touch, send pictures, or just tell each other that we love the other. It isn't ideal,

but it beats not communicating at all. And at the end of my day, I relax with the guys, so there is not as much time as you would think, because the next day we start the process all over again.

Each of the individuals were required to use technology on some basis everyday of their working lives. Whether it was a job requirement or a personal desire to communicate, no respondent could deny the power that technology had to communicate with friends and family. However, they were aware enough to realize that technology was also draining the face time they had with their family. It was inferred that technology might be eroding the very fabric of the traditional communication structure that people knew and used. Face to face communication was slowly slipping away, as Suzanna had stated when she said that she and Robert often texted each other while being in the same room.

The couples with children preferred to spend their time doing family bonding activities when they were all together. Using technology was an activity that promoted less family collaboration and more individual, alone time, which was counterproductive to building a strong family unit. Educators felt much the same way. They were all focused on multiple other aspects of their lives. Even Miriam was focused on other aspects of her life despite not indicating having reached a state in which she was tired of technology being a part of her life. JoAnna as a parent and educator was particularly keyed in on this issue as she was the least interested in the interview because she tired of discussing school related issues when her children needed her attention. Lori was the most eager to continue using and discussing technology as it was a part of her academic

goals and her teenage daughter was self-sufficient and at an age where she needed less parental oversight. It was clearly evident that individual circumstances and experiences clearly influenced the interest in and use of technology by individuals.

Summary of Findings

Based on the interviews and beliefs of the participants, technology was an important part of all of their lives. Whether they consciously admitted it or not, they had a vested interest in the use of technology in their daily lives. Each interviewee would have had difficulty carrying out his or her daily life without the use of some form of technological device that kept him or her connected to an information stream. When the ubiquity of technology was discussed, the interviewees at times did not realize it applied to them. Yet each interviewee described the ease with which they checked their email, accessed their personal banking information, and did a myriad of various daily tasks on their individual devices. They were connected to their devices in a way that would have changed their daily lives without them. While these findings could not be generalized to the overall public, anecdotal conversations with people that used advanced phones or a tablet computer illustrated just how dependent people had become on these devices.

This was a critical point of this research. People are connected to their technology and to each other. They use technology to communicate and to stay connected with the global flow of information, most often social information in the way of Facebook or Twitter. Teachers, parents, investment bankers, pilots, and

students (the careers of the interviewees) were using technology to send or receive information to and from a variety of places around the globe. Electronic mail was still popular, but Facebook, text messaging, and tweeting were just as popular and just as effective for relaying information and often quicker as electronic mail had to make multiple stops along the digital path to its destination. People had instant access to information and could set alerts to receive messages the moment they had Facebook or Twitter updates. Mobile technology had allowed people to become connected to an information stream instantly, and if the flow of information included academic assignments or classroom updates, then those same people would be plugged into the academic lives of their children. While not easy to achieve, the purpose of this research was to demonstrate that it was possible and that people were connected enough to make this a reality.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

Technological devices, the web, and Internet use has become more prevalent now than ever. Over half of the adult web population was between the ages of 18 to 44, with larger percentages of the silent generation actively participating in web use (Pew, 2011). This was particularly important to note as the goal of this research was to identify new and improved ways for educators to improve parent teacher communication and create more engaged parents that supported educators in their endeavor to educate children.

Literature Review

The theoretical framework for this research study was built on themes drawn from the Concerns Based Adoption Model. CBAM was a thoroughly researched and validated theoretical framework for examining an innovation and the stages of development associated with the innovation based on significant research (Tornatzky & Fleischer, 1990; Havelock & Zlotolow, 1995; Hord et al., 1998). In the case of this research, the use of Facebook and Twitter to improve parent-teacher communication was the suggested innovation.

Hord, Rutherford, Huling-Austin, and Hall (1998) stated “the single most important factor in any change process is the people who will be most affected by the change” (p. 29). Adopting a system in schools that used existing social networks was a difficult proposition, complicated by multiple factors, including external pressures on both educators and parents, administrative barriers that existed from a school district, privacy laws that needed to be strictly followed when dealing with minors, and general reluctance to adopt changing technologies across a broad system, such as a school district.

Rogers (1995) examined the diffusion of innovations across a system, with a specific emphasis on technological innovation. Specifically, he examined hardware and software innovations and the impact on a given system as related to critical characteristics of a change – relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1995). This was especially topical for this research as the focus was the adoption of existing social networking software solutions, Facebook and Twitter, to meet the needs of Austin Independent School District parents. The use of these technologies was driven by a need to connect people together in ways that standard practices could not and is the central point of this research. Facebook produced a product that could be easily and safely adopted within an existing school structure at no cost to the school district and provide a communication backbone for teachers and administrators to successfully communicate critical and non-private assignment and work related information to parents.

In 1978, Mezirow introduced the concept of transformative learning, depending on two critical constructs drawn from Habermas' communicative theory, *communicative* and *instrumental* learning (Taylor, 1998). This research focused on the instrumental component of Habermas' work as a task oriented process in which a person must successfully master gaining understanding of new software and hardware technologies. To expand on this idea, *meaning schemes* and *meaning perspectives* informing ingrained behaviors were examined. Practically speaking, meaning schemes were "made up of specific knowledge, beliefs, value judgments and feelings that constitute interpretations of experience" (Mezirow, 1991a, pp. 5-6). Meaning perspectives is a general frame of reference, world view, or personal paradigm involving 'a collection of meaning schemes made up of higher-order schemata, theories, propositions, beliefs, prototypes, goal orientations, and evaluations' (Taylor, 1998, p.6). According to Taylor (1998), "meaning perspectives are often acquired uncritically in the course of childhood through socialization and acculturation, most frequently during experiences with teachers, parents, and mentors (p. 6)."

The literature suggested that technological efficacy is possibly connected to generational status. Based on empirical data, the older a person was, the less involved he or she was with technology during his or her developmental years (Jones & Fox, 2009). Thus, the more involved an individual was with technology during his or her formative developmental years, the more adept he or she would be with technology. Conversely, those less involved with technology would be less eager to adopt technological means to do their daily life tasks. In short, a

disconnect was created when a person who was not raised around technology is suddenly exposed to a world in which technology is the cornerstone of action or when a person that was raised with technology is suddenly faced with a group of people that prefer to communicate in a way that is foreign to them.

Furthermore, the research showed that the field of education was a prime example of this convergence of differing meaning perspectives. Based on the observable ages of parents and teachers, the average school contained a population of parents and teachers that did not use technology during childhood or their young adult lives. These people functioned well through direct face to face communication, open-houses, phone calls, and any other medium that allows for more direct communication. There was also a growing population of Generation X and Y parents that were incredibly comfortable using emergent technologies for communication purposes. These people preferred to communicate strictly through digital means such as iPhones, Blackberry's, laptops, iPads, etc.

In 1989, the Transparent School Model was introduced in the field of education (Bauch,1989). This model suggested that using technological means of communicating with parents would produce more engaged parents in the long run and thereby improve parent-teacher relationship. The results of the original Bauch study were positive and indicated that the model was successful. The model showed that creating and improving communication between disparate groups of people, with an emphasis on the field of education, was critically important to educational attainment and does produce positive results.

A more exhaustive review of the literature uncovered issues dealing with policy issues in the Austin Independent School District. AISD had a Vision for Technology, 2001-2005, document on its website detailing technology use by the school district. The third goal in the executive summary stated: “provide access to information for parents and students outside the physical school environment.” (AISD, 2010). Nearly a decade after the creation of the document, the stated practices it outlined were still not being effectively used by the school district. Finally, in 2009, eight years after the creation of a document that mandated the school utilize technology to improve communication between differing groups, AISD adopted an online program to report basic grade and attendance information to parents outside the physical school environment.

Assumptions of this research were that technology adoption would be impacted by the following factors: age, gender, financial standing, parenting status, race, and education level. The Pew Center had examined technology use across a broad spectrum of the population and produced a report detailing the findings of the study (2009). Pew researchers did determine that younger generations were more likely to utilize technology as it was intended, but also discovered that a significant number of older generation Americans were also actively participating utilizing technology that would have only been thought used more frequently by younger generations. The disparity between those that used technology and those that did not based on age was closing significantly. Across the range of factors, research evidence suggested that the gaps were closing. Jones and Fox (2009) found that more than one-third of all Internet users

engaged in the use of social networking sites and instant messaging programs. The data clearly showed (Jones & Fox, 2009; Pew, 2009; Rainie, 2010) that many people used the Internet and that the use of this technology was actually divided amongst all age ranges, gender, and financial capability.

Another key component of this research was how and what emergent technologies were being used to improve communication between educators and parents with a specific emphasis centering around the use of communication technologies such as email, SMS, social networking sites, and instant messaging programs. While the data provided by the Pew Center also included data for systems that would be considered pull technologies, this research is focusing on proactive technologies that have the ability to push data to an end user. The research conducted by the Pew Center did focus on all technologies, but data did indicate that the technologies at the heart of this research (push based technologies) were actively used by all the stakeholders (Pew, 2009).

At this point in the literature, the data showed trends in the use of specific technologies, indicating that those technologies were the prevalent means of exchanging information. Nevertheless, there were concerns by administrators that technology use could have negative consequences. Facebook had and continues to have privacy issues, as did most other forms of online networking websites. It had been proven that teenagers were more than willing to provide personal and identifiable information to join social networking sites (Barnes, 2006). This presented a clear and valid security concern for educational administrators. It could be said that school administrations were encouraging

students to use social networking sites, opening the student's lives to internal and external threats. While threats were manageable, the research also stated that they should never be overlooked. Beyond that, violence levels in schools was a serious social issue (Hoover & Juul, 1993; Charach, Pepler, & Ziegler, 1995; Clarke & Kiselica, 1997; Hoover & Olsen, 2001) that had been steadily increasing, especially in schools with a greater gap between high and low-achieving students, especially those perceived to have more because they have more technological devices (Akiba, LeTendre, Baker, & Goesling, 2002). Cyber-bullying and stalking was also a very real threat in an age of modern technology with instant communication ability and little oversight and monitoring (Li, 2006).

All of this research pointed to a critical point in the evolution of the processes and thinking in school districts. Progress was defined in the dictionary as a movement toward a goal (Soukhanov, 2010). The goal of this research was to improve communication between parents and educators with a resulting outcome being increased educational success. This conclusion was supported by research which showed that engagement between parents and school personnel often resulted in increased academic achievement and educational attainment in children (Stevenson & Baker, 1987; Hoover-Dempsey & Sandler, 1997; Gutman & Midgley, 2000; Epstein, 2001). The difficulty in this research existed in the integration of emergent technologies into the process of improving communication. The literature showed that improved communication between parents and educators would have an impact on student achievement.

As this research focused on emergent and proactive technologies to communicate information to parents, it was important to discuss some possibilities within the context of the literature and to demonstrate that some communities have recognized these needs and have taken steps to address the perceived gaps in the literature and in practice.

Methodology

The purpose of this study was to gain an understanding of the impact of increased technology use via social networking and other technological systems on parent-teacher communication. A mixed method study examining the dominant and less dominant communication practices was chosen for this research. For this study, the dominant behavior was the traditional communication method employed by educators versus the less dominant practice of communicating classroom information electronically. This research study's primary focus will be on the qualitative data with any quantitative data providing a supplementary component to support any findings.

The research for this study sought to examine perceptions and beliefs of parents and teachers using a Concerns Based Adoption Model themed survey and to statistically describe any data that was gathered relating to grades, demographics, performance, efficacy, and use during the data gathering period.

The survey instrument used to collect the initial data for this research study had two parts - a demographics portion and a portion related to CBAM themed technological questions. Race, gender, age, income, education level, and parenting status were captured in the first portion and the second portion

captured CBAM themed questions which attempted to clarify participants' perceptions, beliefs, concerns, and opinions of a certain innovation by asking specific question related to the use and implementation of the innovation, in this case the integration of modern communication technologies into daily routines related to educational communication. This data provided basic descriptive statistical information and showed trends in the use and adoption of technological solutions by different user groups. Based on the Pew (2009) research, there were some expectations going into this phase of the study. The data collected through the instrument during this phase of the research provided information for this particular sample population.

Group and individual interviews helped the clarification process and the understanding of reactions to the use of social networking systems as educational communication delivery systems. If the participants found it to have any impact on performance, communication, or possibly the relationship between parents and teachers; it would be determined once the data were reviewed at the end of the interview process. The interviews were conducted with the selected population to determine participant perceptions and beliefs related to the integration of social networking system educational information streams into their daily lives.

Criterion-based sampling was used for this study, defining the target audience as parents of students in the selected schools and classrooms that agreed to participate in this study. In limiting the sample of parents of students in two schools in Austin, Texas, the responses were pertinent to the research topic,

parental engagement in an educational setting. At the time of the initial design, the belief was that parents would willingly participate in the group and individual interview process. However, engaging parents for more than the online survey portion of the study was more difficult than originally believed. To get more robust data, mixed purposeful sampling was used allowing for flexibility and meeting the multiple needs of the research question (Mugo, n.d.). More specific criteria would have been ideal, but the exclusionary nature of specific criteria would not lend to the credibility of this study.

Conducting the study required approval by the University's Institutional Review Board (IRB). In accordance with the requirements of the board, participants were informed of their rights and asked to read and sign an electronic informed consent form. This consent form was necessary to ensure that participants were aware of their role in the research. All questions asked in the survey process were marked as optional. At any time, a respondent was able to discontinue taking the survey. Respondents were also allowed to expand or limit answers as much as necessary. This process was designed to ensure that no human subjects felt forced to answer questions which were deemed too personal to answer. While the ultimate benefit was intended for minor children in schools, the actual participants in this research were parents and educators. No data were gathered from or for a minor child directly or indirectly.

The sample size consisted of 200 survey invitations with a total response rate of 98 persons completing the actual survey instrument. Once that portion of the research study was completed, the second phase of the project involved a

group interview with various educators. These individuals represented a sampling of the population and were taken from the survey responses. Beyond this group of educators, four sets of couple were individually interviewed for this research study. Each provided information related to their beliefs and perceptions about technology and technology use for communication purposes.

Key Findings

Survey results for this research study suggested that over half of the respondents to this survey were white, upper middle class with an income above \$60,000.00, married, and had at the very least a four year degree from a university or college. Half of the respondents owned blackberry communication devices, while a quarter of the respondents each owned an iPhone or Android powered smart phone. Over three-quarters owned a laptop computer and 91% of the respondents were connected to the internet. These numbers matched and in some cases slightly surpassed numbers from the Pew Generations report (2011). Out of the 97 survey respondents to answer the question related to race, there were no African-Americans or Asian-Pacific Islanders present.

The three largest areas of interest indicated by parents responding to the survey were academics, athletics, and volunteerism. Participation in a parent-teacher association was fourth, but trailed the first three choices by over twenty percentage points. A high number of parents indicated that they accessed their children's academic information utilizing a website provided by the school district, such as Gradespeed. Parents acknowledged that they checked teacher web pages as well for assignment information. One-third of the 98 responses

indicated that teacher web pages contained useful information. One fourth of the respondents answered that teacher web pages contained useful information only part of the time or rarely. Eighty-seven percent stated that they preferred receiving assignment information via electronic mail or via a mobile device such as an iPhone or other similar smart phone. 76% stated they would feel more connected to their child's educational progress and activities if assignment information was provided for them.

The CBAM themed question showed more depth in the responses. When asked if they knew that the innovation was the use of social networking systems, half indicated that it was irrelevant to them and the other half indicated that they knew about the innovation. Sixty-six percent indicated that they were unsure of other solutions or innovations and the remainder believed that they may have some idea of a system that could be beneficial. When asked if their knowledge of the social networking systems was limited, over half indicated it was not. The same held true when asked if they would have enough time in the day to participate in using social networking systems, with 55% of respondents suggesting that time was not an issue for them. 61% stated they did not feel that conflicts between their current responsibilities and interests would be problematic. Similarly, people unconcerned about daily time limitations to receive information via mobile device, were interested in discussing the possibility of implementing such an innovation. The participants were unconcerned about the resources needed to adopt the use of social networking technologies, indicating they possessed the requisite technology to participate and were not occupied by

other activities. Many respondents were not interested in knowing if the innovation was better than what they were currently using, but were still interested in learning about the application of this particular innovation. Based on the response rate, ranges ranged from 40% to 90% in favor of using social networking systems for educational communication. This response rate was varied; indicating differing levels of interest and/or concern, but signals a need to continue research to explore the views of parents with children in schools.

This data were expected based on the fact that most of the respondents were married, highly educated, working professional careers, had a high level of income, and indicated that they were committed to following up on their children's education. Based on the percentages in the responses, it appeared that privilege did allow for increased engagement. It should be noted that the schools surveyed contained parents that were likely to be more engaged and involved and capable of having the resources to utilize such technology.

Since the data were indicating that the respondents were not only educated, but affluent enough to actively participate and be engaged, it was imperative to do more detailed research by conducting personal interviews. The interviews were conducted with a group of educators and individual parents that chose to be interviewed in pairs. The stories of the educators and parents painted a similar but more detailed picture of the situation.

Each educator had knowledge and access to technology. They all owned some sort of internet connected device, had computers at home, and regularly used social networking technology. The educators varied demographically in

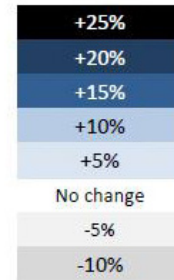
ages, experience, income levels, and efficacy level with various forms of technology. Even the educator that identified as having the most financial difficulty indicated that she owned an internet enabled iPhone. Based on the interviews and the survey data, it was evident that a high percentage of all study participants were connected to the online world via a telephone device that they carried on their person daily. Each educator interviewee was familiar with technology and used technology in her daily life to produce some or all of her daily work.

Four parent groups were interviewed. These individuals all indicated high level of efficacy with technology and regularly used technological devices to communicate. All respondents had iPhones, iPads, Blackberry's, or other internet enabled devices. They all indicated that the devices made their lives easier and allowed for more ease of communication using text messages, electronic mail, Twitter, and Facebook. During the interview process, it became clear that their lives were directly connected to the devices and an interesting observation that was noted was that several times during the interview process they would glance at their devices to check something. Since this process was being observed, it was not mentioned, but noted that the devices were being frequently checked during the actual interviews. According to the Pew Generations report, individuals across a broad spectrum of age range use technology for a variety of tasks. The report provided the following graphic to support this observation:

Heat map: Change in activity over time, by generation

The following chart shows the percentage point change between surveys for certain online activities. Darker areas indicate strongest growth; white areas indicate no change; gray areas indicate negative growth.

Survey dates vary—for details, see the **Methodology** section at the end of the report.



Key: Percentage-point change

	Millennials Ages 18-33	Gen X Ages 34-45	Younger Boomers Ages 46-55	Older Boomers Ages 56-64	Silent Generation Ages 65-73	G.I. Generation Age 74+
Email	Email	Email	Email	Email	Email	Email
Search		Search	Search	Search	Search	Search
Use social network sites		Get news	Get news	Get news	Get news	Buy a product
Watch video		Govt website	Govt website	Govt website	Travel reservations	Get news
Get news		Travel reservations	Travel reservations	Buy a product	Buy a product	Travel reservations
Buy a product		Watch video	Buy a product	Travel reservations	Govt website	Govt website
IM		Buy a product	Watch video	Bank online	Watch video	Bank online
Listen to music		Use social network sites	Bank online	Watch video	Financial info	Financial info
Travel reservations		Bank online	Use social network sites	Use social network sites	Bank online	Religious info
Online classifieds		Online classifieds	Online classifieds	Online classifieds	Rate things	Watch video
Bank online		Listen to music	Listen to music	Financial info	Use social network sites	Online classifieds
Govt website		IM	Financial info	Rate things	Online classifieds	Use social network sites
Financial info		Financial info	IM	Listen to music	IM	Rate things
Rate things		Religious info	Religious info	Religious info	Religious info	Donate to charity
Religious info		Rate things	Rate things	IM	Listen to music	Listen to music
Online auction		Online auction	Online auction	Online auction	Donate to charity	Podcasts
Podcasts		Donate to charity	Donate to charity	Donate to charity	Online auction	Online auction
Donate to charity		Podcasts	Podcasts	Podcasts	Podcasts	Blog
Blog		Blog	Blog	Blog	Blog	IM
Virtual worlds		Virtual worlds	Virtual worlds	Virtual worlds	Virtual worlds	Virtual worlds

Above the line: more than 50% do this activity

Below the line: less than 50% do this activity

Source: Pew Internet surveys.

pewinternet.org

Figure 2 - Heat Map: Change in activity over time, by generation

As was seen in the graphic, social networking use had grown dramatically for every generation. While the interviewees were not asked what specifically

they were looking at each time they checked their smart phone device, the data showed that over 50% of all persons in all age groups were using their internet enabled devices for a variety of tasks that had become integral to their daily lives. This phenomenon was directly observable during the interviews as the interviewees were actively using their devices while we talked for a variety of reasons. While it could not be determined what the interviewees were doing, it was evident that they were using their devices for something other than conversation.

Finally, the five themes were identified as related to technology and technological system use in schools: training, time, resources, access, and motivation. Each theme presented problem in the minds of educators and was alluded to by the parents interviewed. For educators, training and time were the biggest factors. However, resources and access were clearly considerations for them as well. While motivated, it seemed that they were also frustrated with the level of commitment and bureaucracy that was faced when attempting to implement technological solutions to common problems. Parents actually used technology to give them time, as resources and access were not problems for these people. For many of them, training was irrelevant as well, as they were well versed in how to use the technologies suggested by this dissertation, namely social networking systems that have been in use for the better part of the last decade. Overall, the findings indicate that people are willing to use these technologies as they are intended, to increase communication between different

groups and to share vital information, in this case, school assignment information that would keep parents informed.

Conclusions

Based on research and direct observation, it is evident that technology has become an integral part of the daily life of people. While this research was limited in its scope, the reality was directly observable in daily life. Millions of people were connected to their internet enabled devices and Facebook had over 800 million active users in the system, with 350 million mobile users (Facebook, 2011). Organizations such as the Defense Advanced Research Projects Administration and the Federal Emergency Management Agency were actively investigating the use of social technology platforms to relay real-time data from around the country and the world (Worthington, 2009). Current unrest in the Middle East, specifically Syria, illustrated just how powerful social networking and communication devices had become, with much of present day topical news being delivered via social networking systems. The world was moving at the speed of thought and technology had revolutionized the way people actively communicated on a global scale.

When Bauch (1989) first proposed the Transparent School Model, even he suggested that advances in technology would allow for his model to grow in ways that could not be imagined at the time. Communication could be instant and information had the potential to be relayed faster than he ever imagined. Twenty years later, the technology had arrived, but it was not being used in the way it was intended. Parent-teacher engagement was still a critical component to

student success, but it did not seem to be moving forward. As a parent, the researcher was frustrated by his inability to effectively communicate with his son's teachers and find out what assignments had been given and were due. Coming from a university environment, with a syllabus clearly outlining due dates for specific assignments; it was unfathomable to not know when specific assignments were due or what the nature of those assignments were. When pressed, educators and administrators adopted a highly defensive stance and argued that providing such information was too much work and too demanding for career educators who had made it their life's goal to serve students. Ironically, the engagement of a parent would best serve students as many have believed for years, yet this was the very thing that was lacking in schools.

As a researcher, it was determined that the best thing to do was study this situation at a micro level to determine if these experiences were anomalous or reflective of the greater whole. In interviews and discussions with various stakeholders, it was determined that technology was actively being used in other places, but that the Austin Independent School District could be doing more to incorporate new communication technologies to reach parents. AISD had tacitly created a culture in which a dated technology policy was not being enforced. Beyond this, a technology director expressed concern about the lack of forward progress in the deployment of advanced systems that would improve communication while creating greater ease of use for end users. Simply put, Austin schools and educators were not where they should have been considering

the fact that Austin, Texas, was one of the more educated and technologically advanced cities in the country.

Based on the survey responses and interview sessions, the following conclusions were made:

1. Educators were willing to consider using technology as a tool, but there were reservations that technology use would interfere with their existing task of educating students.
2. Educators faced challenges from internal and external pressures that impact their ability to integrate certain technologies into their practice.
3. Parents were interested in using technology as tool to improve parent-teacher communication as long as it did not add any more burden to their lives.
4. Technology use was ubiquitous and all the interviewees owned or used advanced technological devices for the purposes of communication and sharing of information.
5. Representation of a more diverse population was needed to more accurately understand how the use of technology would be beneficial for the purposes of educational communication with parents.
6. People were willing to consider the notion of social networking technologies for the purpose of educational communication, but there clearly needed to be more research done, preferably supported by the major stakeholders in this debate, Facebook, Twitter, Google, and Apple.

Parents were interested in using technology to its full extent, as they were already engaged in the use of these technologies to begin with. Educators were no different. Many lamented the fact that time was their biggest constraint, but were still willing to make an effort. However, they also faced the added challenge of dealing with upper level administrators that would not approve of the use of certain system for communication purposes. Instead, they were greeted with a system that, by the admission of the teachers and the school district technology director, was antiquated and difficult to use. Based on personal conversations with school administrators and various technology professionals in various schools, there was the added issue of local teachers advocacy groups deeming the system too time consuming. This created a situation in which teachers were given the right to only upload information once per week. This did not present an environment in which open and transparent communication was encouraged.

Furthermore, social networking technologies had still not been readily adopted in schools (Barnes, 2005). Some schools even went as far as asking students to take down personal information due to privacy concerns (Kornblum, 2005). Issues pertaining to security and safety were present and federal law prevented the sharing of private student information by schools. These issues became more important with the advent of cyber-bullying via social networking systems. Yet again, the issue of social networking proved to be nuanced and multi-faceted and presented many problems for school administrators.

At the start of this research, there was only one known program in the nation using Facebook for educational needs with the support of school

administration (Friend, 2010). Interestingly enough, this school district was located outside of Omaha, Nebraska. It was unexpected to find the use of advanced social networking systems in a school environment in Omaha due to the fact that a reasonable person would expect to see such practices in the heartland of technology, the San Fernando Valley region. This program gained the attention of the researcher only after an article by CNN highlighted the efforts and successes of the district. In truth, it was a testament to the creativity of the motivated educators in Omaha.

When the findings were analyzed, several themes were identified that impacted educators and parents – training, time, resources, access, and motivation. The findings were mixed, but these main themes became the common thread. All of the respondents alluded to each of the identified themes in various ways and indicated, both directly and indirectly, that these issues were relevant and topical to them. It should be noted that despite the concern that society was becoming too disconnected from each other due to the use of Facebook, electronic mail, text messaging, tweeting, and the use of other social networking systems, each of the respondents indicated that they actively used social networking technologies and smart phones to for the very purpose that they feared. Overall, this spoke to the power and ubiquity of these systems. Despite their concerns, they all still actively maintained accounts and use of these services and systems.

For educators, the concerns that were mentioned had focused on issues that would potentially cut into their personal time. Due to their hectic schedules

and the volume of work that was required, some felt that including a new system of communication would be problematic, despite their comfort with technology. Since the issue was not Facebook efficacy, it was inferred from the literature that the issues affecting educators acceptance and implementation was related to external forces impacting the use of social networking system. Research showed that over the last 50 years, there had been powerful social and political forces impacting the field of public education (Callahan, 1962; Hoover-Dempsey, et al., 2002; Cuban, 2005). These forces had affected the ability of teachers to innovate.

When examining the CBAM Stages of Concern, it was clear that the stages were progressing as one would expect. People had an awareness of Facebook and the power of social networking systems, but had not framed the issue in the context of educational communication. Once they began framing the issue and examining their actions as senders and receivers of information, they realized it would be useful as a tool. Interviewees expressed some concern about the impact to their lives, but felt that it was manageable. While there were issues of resources and access, the general belief was that such programs could work. In fact, data had indicated that these programs would have successful based on Bauch's TSM model (1989). However, the process clearly started to breakdown with managing of the program and the collaboration of peers. External factors were identified as impacting the use of social networking systems as the researcher proposed. No progress was made toward refocusing because no

forward progress could be developed to get educators to use the systems as the researcher intended.

Despite the fact that improved parent-teacher communication had been shown to be critical to improving educational processes (Clark, 1983; Kagan, 1984; Bloom, 1985; Henderson, 1987; Dornbusch & Ritter, 1988; Barton, et al., 2004; Harris & Goodall, 2007), schools were still not adopting the technologies for that purpose. If continued external pressures affected teacher motivation to use social networking systems, then no critical mass could be built towards the use of social networking systems for educational communication purposes. Without the critical mass of users openly advocating and using the system, shifting the paradigm to using the social networking systems for educational communication became more difficult than necessary and was a battle that educators did not want to have with administration.

Beyond the aforementioned issues, there were other issues present that required examination. African-American respondents were limited in this exploratory research. This may have been a result of the specific schools that were targeted for the research and the need to use a random purposeful sample for individual parent interviews. It was important to have a clear understanding how minority technology users feel about the use of social networking systems to communication class work and homework information to parents. The schools used in this research study were diverse; however, a diverse enough population did not participate in the survey and that should be noted as important to this research.

The actual adoption of technology was also an initial issue. At the time this research was starting, many respondents indicated that they did not have iPads. As the iPad became a more ubiquitous device, people began to purchase the system in greater numbers, with fifty-seven percent of the total tablet market being controlled by Apple (Smith, 2012). The iPhone 4s was also introduced in October of 2011, again shifting the landscape of technology acquisition. Apple computers and AT&T telephone reduced the price of an entry level iPhone to one cent and of a more advanced model to \$99. There were also several powerful and affordable alternatives provided by multiple other manufacturers from multiple other wireless carriers. Android based systems had further allowed users to enter the technologically connected world as well. The impact of these changes was noticed in later interviews and may have affected the survey results, but there would be no way to find out unless the survey was redone.

During the course of this study, it became evident that programs around the country were exploring options related to technology, from incorporating the use of social networking technologies to allowing students to use the very devices that allow people easy access to such system, iPhone, iPads, Android based devices, and portable smart phones that allow people to have access to the information superhighway instantly. Programs in Los Angeles began using Twitter to create classroom discussions and allow students the freedom to communicate in a way that screened their identities but not their thoughts (Simon, 2011). Indeed, around the country educators were finding ways to incorporate new technologies in ways that the existent research had not

examined. There were studies being conducted, but as of this date, they were too few and had not tracked success in improving parent-teacher communication via the use of social networking systems.

Implications

The implications for practice and research based on the literature and results of this study reflected a need to conduct more research into the use of emergent technologies for the purposes of improving parent-teacher communication in schools.

Practice

The literature in this study indicated that people developed certain meaning perspectives that served as a general frame of reference, world view, or personal paradigm involving ‘a collection of meaning schemes made up of higher-order schemata, theories, propositions, beliefs, prototypes, goal orientations, and evaluations’ (Mezirow, 1990, p. 2). Taylor believed that these perspectives were gained through socialization or acculturation during experiences with teachers and parents (1998, p. 6). The use of technology was being indelibly burned into the minds of younger and younger generations. The Pew Center had determined that younger and younger users were now becoming skilled at using various technologies to stay connected to the world (Generations, 2011). Beyond this, Hord, Rutherford, Huling-Austin, and Hall (1998) stated “the single most important factor in any change process is the people who will be most affected by the change” (p. 29). In the case of this research, the change was improving communication via the use of emergent

technologies such as social networking systems. This improved communication would ultimately benefit the students in schools by creating an environment where parents were more aware of the current standards and expectations and workload demands on the students. Hartstein (2011) suggested that Facebook was a powerful tool that could be used by schools to relay a variety of information to parents in a number of different ways that did not violate privacy laws, but promoted the free exchange of ideas and information and kept the parent more informed.

Research and Theory

The research indicated that there was still a significant reluctance to use emergent technologies in the classroom. Issues of privacy and security abound. Schools were keenly aware of the need to keep student information private and the ease with which Facebook and Twitter could be viewed was a sobering thought for school administrators (George, 2006; Kornblum & Marklein, 2006). However, school systems could not refute the ubiquity of these systems. With 800 million users currently using Facebook (Facebook, 2011), it would have been difficult to understand the decision to not use such a viable tool for communication purposes.

Research had been conducted into why people join online communities (Backstrom, Huttenlocher, Klienber, & Lan, 2006). It was imperative to extend this research and focus on educational settings. For these systems to succeed in their use in schools and classrooms, administrators had to fully understand their use and how to leverage these technologies in the appropriate way. While it was

easier to deny that these technologies could be adapted to serve as powerful educational tools, it was only hurting students and parents. Transparent educational processes had always been important, but this research showed that it would be prudent to revive the work done by Bauch (1989) and expand it to include new social networking systems.

Recommendations

The findings of this study yield recommendations for further research and practice on the use of technological systems and software solutions in classrooms to improve parent-teacher communication and facilitate better relationships between all the stakeholders involved in the educational processes of children in this country. The advancement of these systems could no longer be denied, nor could their ubiquity in the world.

Practice

The following recommendations for practice were determined:

1. Academic institutions should begin programs that support the use of Facebook pages for the purposes of communicating class work, homework, and project work to parents. These pages should be open to all persons and contain only descriptive information related to work assignments.
2. Schools should begin to develop technology student associations (TSA). TSAs are becoming a catalyst for change in how technology is perceived by schools and parents (Hess, 2010). By creating these programs, schools will give students the ability to share their knowledge of these

systems with the adults of the community. Adults will infuse the students with a greater sense of responsibility and ownership for the knowledge.

This symbiotic relationship should prove beneficial for all parties and allow for the exchange and development of new ideas for using existing technologies to communicate.

3. For parents with lack of access to new technologies, schools should open their computer labs to parents once a week. This community engagement program would allow parents that are financially unable to acquire technologies to not only have access to their children's class information, but also develop skills that may serve them in the future and help them advance their careers by learning new skill sets. A program like this will also serve to further connect teachers and parents in ways that will prove beneficial to children. More endearing relationships will be established and parents will be less reluctant to approach teachers about issues they may feel exist.
4. Contact should be made with the larger corporations, Google, Microsoft, Facebook, and Apple to begin development of applications that would ease the burden on teachers of communicating assignment information to parents. By utilizing the services and resources of the largest corporations with the most talented developers, the issues of time, access, and security could be handled quickly and easily. Applications could be developed that would work quickly, be synchronized with existing software and hardware solutions, and have built in security protocols.

Research

There were several areas of potential research that could add to the body of knowledge concerning the use of emergent technologies in a school classroom for the purposes of improving parent-teacher communication.

1. The Transparent School Model should be revisited with new studies conducted utilizing existing technologies such as Facebook and Twitter and tracking what devices are being used to access these systems. Determinations should be made as to what system provides the most ease of use and what the tangible results of using these systems would be for schools, vis-à-vis, grade improvement, increase in parental engagement, increase in parent-teacher interactions.
2. Research should be conducted in a variety of schools that range across various income and demographic levels. A more thorough understanding of how the use of technology impacts minority populations is warranted. Some administrators may argue that issues of access prevent them from adopting such programs, but without actual research, these assumptions serve no purpose other than to prevent the programs from being evaluated and implemented. Pew Center research (2011) indicates that more users have access to mobile technology and Facebook data (2011) indicates that 800 million active users and growing are using the system. If schools begin to open their technology labs once or twice a week to the poorest of parents, then this issue is moot and there should be no reason why parents cannot engage in their child's educational development.

3. Multiple comprehensive qualitative studies must be conducted in various school systems that will gather the views, beliefs, perceptions, and experiences of parents using technological systems. Researchers must determine what issues are preventing parents from engaging, gauge why these issues exist, determine what steps parents would like to see taken, and ascertain just how much or how little technology is actually present in individual households. This must be done in more than one school and would amount to a massive undertaking that should be funded by companies such as Apple, Microsoft, Google, Facebook, and Twitter. The scope of such research would be massive and would require collaboration between multiple schools and universities and organizations, but should prove ultimately beneficial to students, parents, and teachers everywhere.

Final Thoughts

Technology is ubiquitous. It had become part of the social milieu. It was not uncommon to see a person walking down the street listening to music, surfing the internet, reading a book, have a video conference call with family or friends, or any other number of activities that once seemed impossible. Facebook (2011) had 350 million active users with mobile smart phone applications installed and used on their devices. Put in perspective, this was greater than the total population of every man, woman, and child within the United States. Facebook (2011) actually predicted that they would top 1 billion active members by the end of 2012. That would be one-eighth of the total world population. Entertainment, business, arts and sciences, and military were all adapting the

use of these technologies into their daily operations. It had become time for the field of education to join the ranks of those using these technologies to improve its efficacy. Certainly, the prospect of using such technologies was daunting, but it was not outside the realm of possibility. Programs could be designed that would account for student privacy issues while still providing powerful tools for parents and teachers to communicate information and ideas to each other. The state of education in the United States has been constantly lamented. It became time to add something new to the debate and see where the future would take us. Technology was changing the face of education in this country. It would be incredibly unfortunate if those charged with inspiring, motivating, and educating our youth were left behind because of their own inability to think creatively and leverage existing, free resources to improve education.

Appendix A

Definition of Terms

The following terms will be used in this dissertation:

iPhone: An Internet and multimedia enabled Smartphone marketed by Apple, Inc., containing a camera, portable media player, and full Internet client capability designed around a unique screen interface (Apple, 2011)

Nexus One: An Internet and multimedia enabled Smartphone marketed by Google, Inc., containing a camera, portable media player, and full Internet client capability designed around a unique screen interface (Google, 2011)

Broadband: A high speed and high transmission medium used to transfer large amounts of data. (OED.com, 2011)

Internet: A large computer network that links smaller educational, governmental, commercial, and other related networks together for the purpose of exchanging information. . (OED.com, 2011)

Laptop: A portable, usually battery-powered microcomputer small enough to rest on the user's lap. (OED.com, 2011).

Desktop: A small or compact microcomputer that can be used on a desk (OED.com, 2011).

Electronic Mail: Messages automatically passed from one computer user to another, often through the Internet networks; commonly referred to as e-mail. (OED.com, 2011).

Short Message Service: A message service consisting of short alphanumeric messages used by cellular telephone systems; commonly referred to as SMS. (OED.com, 2011).

Social Networking: A website used to connect with people who share personal or professional interests, place of origin, education at a particular school, etc. (OED.com, 2011).

Appendix B

Email Consent Form/Invitation

Greetings!

My name is Rod Trevino and I am Doctoral Candidate in the College of Education at Texas State University - San Marcos. My research focus is the intersection of technology and parent-teacher engagement in schools. This is a new field of study, but one that is growing by leaps and bounds. Input is needed from both teachers and parents to fill the gaps in knowledge that exist in this field.

Attached you will find two links - one for parents and one for teachers. Each links directly to an online survey. This survey should take no more than 20 minutes of your time. There are multiple questions related to technology knowledge, use, and application. Your answers will help guide future research and possibly impact the field of education for the better.

Parent Survey - take this if you have a child or children in school

Educator Survey - take this survey if you are a teacher in a school

This survey has been given exempt status by the Texas State University - San Marcos Institutional Review Board. The IRB Exemption Request number is EXP2011D6789. The exemption status was granted March 01, 2011. If you have any questions regarding this survey or email, please contact either me at:

Rxxxxxxx@gmail.com

Thank you for your time and support. Your assistance is greatly appreciated.

Appendix C

Educator Survey

1. What is your gender?

Male
Female

2. What is your age?

21-25
26-30
31-40
41-50
51-60
61 and over

3. What is the highest level of education you have completed?

Less than a high school diploma
High School/GED
Some College
2 Year Degree (Associates)
4 Year Degree (BA, BS, etc.)
Master's Degree
Professional Degree (J.D., M.D.)

4. What is your yearly income?

Less than \$20,000
\$20,000 to \$29,999
\$30,000 to \$39,999
\$40,000 to \$49,999
\$50,000 to \$59,999
\$60,000 and above

5. What is your current marital status?

Single
Married
Separated
Divorced
Widowed
Other, please specify

6. What is your race?

White
Hispanic
Native-American
African-American
Asian-Pacific Islander

7. What are the current grade(s) that teach? (select all that apply)

Pre K/Kindergarten

1st

2nd

3rd

4th

5th

6th

7th

8th

9th

10th

11th

12th

8. Do you use any technological methods to convey student assignments,
projects, class work, or homework information to parents?

Yes
No

9. If you answered no to the prior question, please explain why you do not use
any technological methods to convey assignment, project, class work, or
homework information to parents.

10. The following two questions are designed to gain an understanding of your technological awareness and what technology you currently own. Which of the following devices are you familiar with using? (select all that apply)

iPhone
 Android Smartphone
 Blackberry
 Laptop Computer
 Desktop Computer
 iPod
 iPad
 PS3, Xbox, Wii
 Other, please specify

11. Which of the following devices do you own? (select all that apply)

iPhone
 Android Smartphone
 Blackberry
 Laptop Computer
 Desktop Computer
 iPod
 iPad
 PS3, Xbox, Wii
 Other, please specify

12. Indicate your level of proficiency at using the following programs or doing the following tasks:

Not Proficient Somewhat Proficient Average Proficiency Expert User N/A

Word
 Excel
 Email
 Twitter
 Facebook
 Power Point
 Saving a File
 HTML Editing
 Uploading a file
 Attaching a file to email
 Adobe Acrobat (PDFs)
 Using an email contact list
 Online grade management system

13. What is the greatest barrier you face when using technology in the classroom?

Time
Resources
Ease of use
Security issues
Other, please specify

14. What is the greatest barrier you face in using technology to communicate with parents?

Time
Resources
Ease of use
Security issues
Other, please specify

15. Do you believe that providing assignment, project, class work, and/or homework information to parents will have a positive impact on students?

Yes
No

16. If you do not believe that providing assignment, project, class work, and/or homework information will have a positive impact on students, please explain why.

17. Do you believe that providing assignment, project, class work, and/or homework information to parents will have a positive impact on parent-teacher relationships?

Yes
No

18. If you do not believe that providing assignment, project, class work, and/or homework information to parents will have a positive impact on parent-teacher relationships, please explain why.

19. Do you regularly update your existing teacher webpage with assignment, project, class work, and/or homework information for parents?

Yes
No

20. If you do not regularly update your existing teacher webpage with assignment, project, class work, and/or homework information to parents, please explain why.

21. If you were provided with an easy technological solution that could relay assignment, project, class work, and/or homework information to parents, would you regularly use it?

Yes

No

22. If you indicated you would not use an easy technological solution that could relay assignment, project, class work, and/or homework information to parents, please explain why.

23. The previous questions were geared towards understanding your use or potential use of an innovation, in this case an Internet connected computer and/or software to communicate assignment, project, class work, and/or homework information to parents. The following statements are designed to gain a better understanding of your beliefs, feelings, and perceptions related to this innovation.

Irrelevant to me Not true of me now Somewhat true of me now Very true of me now

I don't even know what the innovation is

I know of some other approaches that might work better.

I have a very limited knowledge about the innovation

I am concerned about conflicts between my interests and my responsibilities

I am concerned about not having enough time to organize myself each day.

I would like to know who makes the decisions in the new system

I would like to discuss the possibility of using the innovation

I would like to know what resources are available if this innovation is adopted

I am concerned about my ability to manage all the innovation requires

I am completely occupied with other things

Although I don't know about this innovation, I am concerned about other things about this idea

I would like to know what the use of the innovation will require in the immediate future

I would like to have more information on time and energy commitments required by this innovation

I would like to determine how to supplement, enhance, or replace the innovation.

I would like to know how my role will change when I am using the innovation

I would like to know how this innovation is better than what we have now.

At this time, I am not interested in learning about the innovation

24. Please provide any comments about technology or educational engagement or anything related to this survey at this time
25. If you would like to participate in a group interview related to this survey topic, please provide your email in the box below. All information will be kept strictly confidential.

Appendix D

Parent Survey

1. What is your gender?

Male
Female

2. What is your age?

21-25
26-30
31-40
41-50
51-60
61 and over

3. What is the highest level of education you have completed?

Less than a high school diploma
High School/GED
Some College
2 Year Degree (Associates)
4 Year Degree (BA, BS, etc.)
Master's Degree
Professional Degree (J.D., M.D.)

4. What is your yearly income?

Less than \$20,000
\$20,000 to \$29,999
\$30,000 to \$39,999
\$40,000 to \$49,999
\$50,000 to \$59,999
\$60,000 and above

5. What is your current marital status?

Single
Married
Separated
Divorced
Widowed
Other, please specify

6. What is your race?

White
Hispanic
Native-American
African-American
Asian-Pacific Islander

7. What is the current grade of your child?

Pre K/Kindergarten
Elementary School (Grades 1-5)
Middle School (Grades 6-8)
High School
Other, please specify

8. How involved are you in the educational development of your child?

Very Involved
Somewhat involved
Occasionally involved
Not very involved
Not involved at all

9. If you indicated limited or no involvement on the prior question, which of these

choices best describes the reason for this? (Select all that apply)

Work Conflicts
Time limitations
Limited access to resources
Negative experiences with school administration
Other, please specify

10. If you previously indicated that you were involved on some level in your child's educational development, what specifically are you involved with?

(Select all that apply)

- Academics
- Sports
- Parent Teacher Association
- School Committee
- Parent Volunteer
- Not applicable
- Other, please specify

11. The following questions are designed to understand your current knowledge level and adoption of established or emergent technologies. Which of the following do you use for Internet service?

- Cable modem (Roadrunner, etc.)
- DSL (AT&T U-Verse, etc.)
- Satellite (Dish, etc.)
- Dial-up
- None of the above

12. If you selected none of the above, please provide an explanation as to why you do not have internet service

13. Which of the following devices do you own? (Select all that apply)

- iPhone
- Android Smartphone
- Blackberry
- Laptop Computer
- Desktop Computer
- iPod
- iPad
- PS3, Xbox, Wii
- Other, please specify

14. Which of the following devices do you use to access the Internet? (Select all that apply)

iPhone
Android Smartphone
Blackberry
Laptop Computer
Desktop Computer
iPod
iPad
PS3, Xbox, Wii
Other, please specify

15. Based on the answer to the prior question, which of the devices listed is your primary or preferred device for connecting to the Internet and why?

16. The following questions are designed to understand your views on accessing academic information being posted online by your child's educators. Do you use the Internet to access your child's educational information via a website or some other software?

Yes
No

17. Most school districts have some method to interface with student information online. Do you use your district's online system?

Yes
No

18. Do you visit teacher web pages for information?

Yes
No

19. Teacher web pages provide useful information regarding assignments, projects, class work, and homework:

All of the time
Some of the time
Rarely
Never
I do not check teacher web pages

20. If you stated that you do not check teacher web pages, which of the following choices best explains why? (Select all that apply)

Work schedule does not permit

Not interested in accessing student information online

Unaware that educational information can be accessed via the Internet

Previous experience or knowledge that useful information will not be present

Time constraints that prevent you from being involved in your child's educational development

Other, please specify

21. Would you like to see assignment, project, classwork, and homework information online?

Yes

No

22. Would you like to see assignment, project, classwork, and homework information relayed to you via email or a mobile device (iPhone, Smartphone, Blackberry, iPad)?

Yes

No

23. If you do not want to receive assignment, project, classwork, or homework information via a mobile device, please explain the reason why.

24. As a parent, would you feel more engaged in your child's educational process if you were aware of the assignments your child was given in school?

Yes

No

25. If you indicated you would not feel more engaged in your child's educational process by knowing what work was assigned to him or her, please explain why.

26. The previous questions were geared towards understanding your use or potential use of an innovation, in this case an Internet connected computer and/or software to communicate assignment, project, class work, and/or homework information to parents. The following statements are designed to gain a better understanding of your beliefs, feelings, and perceptions related to this innovation.

Irrelevant to me Not true of me now Somewhat true of me now Very true of me now

I don't even know what the innovation is
 I know of some other approaches that might work better.
 I have a very limited knowledge about the innovation
 I am concerned about conflicts between my interests and my responsibilities
 I am concerned about not having enough time to organize myself each day.
 I would like to know who makes the decisions in the new system
 I would like to discuss the possibility of using the innovation
 I would like to know what resources are available if this innovation is adopted
 I am concerned about my ability to manage all the innovation requires
 I am completely occupied with other things
 Although I don't know about this innovation, I am concerned about other things about this idea
 I would like to know what the use of the innovation will require in the immediate future
 I would like to have more information on time and energy commitments required by this innovation
 I would like to determine how to supplement, enhance, or replace the innovation.
 I would like to know how my role will change when I am using the innovation
 I would like to know how this innovation is better than what we have now.
 At this time, I am not interested in learning about the innovation

27. Please provide any comments about technology or educational engagement or anything related to this survey at this time

28. If you would like to participate in a group interview related to this survey topic, please provide your email in the box below. All information will be kept strictly confidential.

Appendix E

Interview Questions

1. What is your profession? Age? Marital status? And do you have any children?
2. Tell me about your relationship and concerns with technological devices and general technology use.
3. What existing social networking systems or technologies do you use to communicate with friends, family, and/or coworkers?
4. What current technologies do you own to communicate or surf the web with (cellular phones, internet devices, social networking sites, etc.)?
5. Would you consider technology to be useful for the sharing or communicating of information? Why or why not?
6. How has technology impacted your life? Has it made it better? Worse?
7. Do you see obstacles that prevent you from using technology in your daily life?
8. Do you ever get tired of the constant presence of technological devices in your life/lives?
9. How do you most commonly use your technological devices?

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Vita

Rodrigo Trevino was born in McAllen, Texas, and graduated from Mercedes High School. He has lived and worked in various locations around the world, including countries in Central and South America. He currently resides in Austin, Texas.

He is a veteran who served honorable in the United States Navy from July 1992 through July 2000 where he achieved the rank of Petty Officer. He spent time in Central and South America assisting with interdiction operations. He supported special operations and forward deployment of equipment and resources for military units. His awards and decorations include the National Defense Service Medal, Navy Good Conduct Medal, Sea Service Ribbon, and Expert Marksman Ribbon.

He attended Saint Edward's University in Austin, Texas. He graduated in 2001 with a Bachelor of Arts Degree in Political Science. He continued his education at Saint Edward's and graduated with a Master of Science in Organizational Leadership and Ethics in 2003. He entered the Graduate College at Texas State University-San Marcos in the fall of 2004 and completed his doctoral in Adult, Professional, and Community Education in the Spring of 2012.

His work experience in the private sector has been varied. He worked in several charter schools, as an educator and a technology expert. He currently works for the United States Treasury Service as an Education Training Specialist developing electronic learning courses. His focus on technology makes him an expert on compliance with Section 508 of the Rehabilitation Act of 1973. He focuses on issues of compliance in content development for persons with disabilities and special needs.

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