

## **Abstract**

CHANCY, ERIC JOSEPH. The History and Implications of Technology on School Counseling in North Carolina School Districts. (Under the direction of Dr. Edwin R. Gerler).

The world has changed as technology has been invented, created for mass distribution and implemented. The ways in which people interact, communicate, tell jokes, express dismay or displeasure, and find information and entertainment have changed tremendously in both scope and breadth, and school counselors have a choice to make: They can fight technology integration, or they can learn to use technology to assist with the work that they do, and integrate it for to facilitate the ever-growing workloads and help students meet the constantly shifting graduation requirements.

The object of this study was to determine how technology has changed the duties and the services of the school counselor, in both positive and negative ways. The research method combined historical and collective case studies in order to obtain the historical perspective of technology inception in school counseling and to gain perspective on the current state of technology integration in school counseling departments.

The study ultimately revealed that technology integration in school counseling programs has been haphazard, often lacking in support and driven by innovative school counselors. The most positive impacts included better communication, global access to information and portability of technology tools. The primary negative impact, and strongest discussion by counselors, was in regard to the impact of social media on the work of the counselor. In discussing recommendations going forward, counselors were largely concerned with the need for direct and current training, and a focus on best practices.

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The History and Implications of Technology on School Counseling in North Carolina School  
Districts

by  
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## **Dedication**

Stephanie – There is nothing I can write here that would begin to cover the depth and breadth of my love for you and my thanks for your support of me. In every sense, you are my true companion.

Jacob and Andrew – Read, watch, learn, grow, live and love. You are the greatest accomplishment I will leave the world, so let them know you are here. I love you.

Joe and Lory Chancy, who would always rather be known as Mommy and Poppa – I'm here because you asked for and fought for me. You supported me, loved me, understood when to let me fail so that I could learn, and helped me succeed at every turn. You are two of the most loving, hardworking people I have ever met, and I am incredibly fortunate to be your son.

## **Biography**

Eric Chancy was born and raised in Miami, Florida, having attended Visitation Elementary School in Miami, Florida and Chaminade-Madonna College Preparatory High School in Hollywood, Florida. Eric earned his bachelor's degree in Secondary Education with an English concentration in 1993, and completed his master's degree in K-12 School Counseling in 1996. Eric subsequently worked with the Hampton School District and the Pittsburgh Public School District, then moved to North Carolina and accepted a high school counseling position in 1999. Since then, Eric worked as a high school counselor until 2013, at which time he accepted a position as a Senior Administrator with the Office of Student Assignment, overseeing the transfer of students to and from 39 schools within the Wake County Public School System. Eric has also authored "The Mechanics of School Counseling Workbook", a guide to help counselors acclimate to new counseling positions, and speaks with school and community groups about the proliferation of and cautions necessary when engaging in social media. Eric frequently seeks to learn about and share information on how technology is affecting our culture, and in turn how that technology is affecting relationships with students.

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## **Chapter One: Introduction**

### **Background of the Problem**

The human race has been through an amazing transformation. Since its appearance on the planet, the human race has gone from “knowing” that what we were capable of seeing, hearing and smelling was all that existed, from “knowing” the earth was flat, and “knowing” that the earth is the center of the universe to learning that the earth is a sphere and is nowhere close to the center of the galaxy, much less the universe. As a species, we have shared our story through different media, handed down knowledge, determined methods for extending subsistence living into means of efficient sharing and trading of resources, found ways to improve health and suppress the spread of disease, and all of this in the blink of an eye in comparison to the lifespan of the universe. In the movie, “Men In Black”, Tommy Lee Jones character, Agent K, states, “Fifteen hundred years ago everybody knew the Earth was the center of the universe. Five hundred years ago, everybody knew the Earth was flat, and fifteen minutes ago, you knew that humans were alone on this planet. Imagine what you'll know tomorrow.”

In the twentieth century alone, we created widespread ways for average people to travel long distances without the need for walking or for animals to carry us and the load with combustion engines and automobile and airplane travel; regular, everyday people could receive news and information rapidly with the proliferation of radio technology, and shortly thereafter, many were able to see real-life events taking place in their own homes via television; plastic was invented, which holds our food and beverages, wraps and protects our consumer goods, allows us to carry things and sometimes protects us from inclement

weather; we developed ways of printing quickly, then of copying quickly, then of self-publishing and having the ability to distribute information worldwide in just seconds (Time, 2014). And in the last decade, we have learned astounding things about our own genetic structures. Within the last 20 years, computing and the advent of blended technologies like three-dimensional (3D) printing, created by Charles Hull in the mid-1980s (Hoffman, 2011, par. 1), have allowed some people to change the course of their own lives, and help others as well. Recently, a group of engineering students at the University of Central Florida used 3D printing to create a prosthetic arm for a six-year old boy that would normally cost 40,000 dollars. Their cost was only 350 dollars (Jameson, 2014, par. 4).

It is not only the physical body that benefits from advances in technology. A recent article in the *Journal of Consulting and Clinical Psychology* reports that adding an internet component to treatment of opioid dependence significantly improved the results of the participants. The researchers took special note to communicate that, "...a growing literature suggests technology-based interventions are more reliable, provide greater program fidelity, are easier to develop, reach larger populations, are more cost-effective, and provide similar levels of client satisfaction than traditional face-to-face therapies." (Christensen, Landes, Jackson, Marsch, Mancino, Chopra & Bickel, 2014, p. 970) As previous studies have shown, human contact to support treatment therapies can substantially enhance the outcomes. With technology as a facilitating medium, it is possible to achieve similar results and reduce costs.

Many marvels of modern technology bear a downside as well. The ability to share information, to create and freely and quickly distribute information means it can also run amok quickly; health improvements for some have potentially dire consequences for others, and clearly not the entire population of the planet has yet to benefit from advances in modern

medicine; engines and the burning of fuel affect the air that we breathe and the environment in which we live; radio and television, and now the world wide web are difficult at best for varying cultures and populations to monitor and regulate according to what they determine is in their own best interest; plastic consumes a great deal of space in our landfills, and often has adverse effects on animals on our environment.

The implementation of technology has changed the face of our individual, independent societies and our global society. It has created new roles that people take on, some for their entire careers. There have been tasks and work created since the invention of the wheel that did not exist prior. There are roles in the workforce that are created and eliminated as a result of the evolution of technology. There are jobs that will exist in five and ten years that do not exist today, and there are careers that will be ended by force of technology evolution, because they are no longer relevant. *The Occupational Outlook Handbook*, created and updated regularly by the United States Bureau of Labor Statistics, reveals that there are professions in existence today that were unheard of even 15 years ago (U.S. Bureau of Labor Statistics, 2014). Green energy jobs now include solar thermal technicians and wind farm engineers. Healthcare includes nursing informatics as a profession, and in the areas entertainment and media, new roles include user experience designer and social media managers (U.S. Bureau of Labor Statistics, 2014). Occupations are pieces of identity that may potentially bear tremendous effects on our students, because of the weight occupations carry in society.

As an integrated and important part of our civilization, technology has changed our culture, and anything that changes our culture, and both brings together and divides our culture becomes a point of necessary understanding for school counselors. “Society is

bombarded daily from the impact of technology. Email, Web sites, cellular phones, and handheld computers are just a few examples of technology that are taken for granted today. Culturally, technology has gone beyond being a tool to becoming an integral part of daily living.” (Anderson, 2002, p. 317) However, when new technology is first brought to the market, it is often very expensive. Education has never been the vanguard for technology, and not for lack of desire to learn about new technology but more for reasons of lack of funding and lack of training. Business relies on technology to make money. Business will adopt technology, and will spend the money on infrastructure for technology, in order to see dollars multiply. By and large, education is not a profitable venture. Education, whether considered to be public or private, winds up being a secondary adopter and user of technology.

It does not make sense that education would adopt every new technology that comes to market. Not every technology becomes part of the world culture, whether business or social. As good stewards of public dollars, administrators and educators must take care with public funds to make sure they are being used appropriately to educate students, so that they have skills and abilities that allow them to be contributing citizens, and a positive part of the workforce. As such, education is left as a trailing user on the information superhighway, picking up widely used technology when available either by charity or by price point, and left in the rear view mirror of the technology speedway.

### **Statement of the Problem**

When anything has an impact on our culture, it has an impact on our students. Those impacts are realized in the community, and a major component and focal point of that

community for students in grades K through 12 is the school they attend. It is the place where students are gathered for at least seven hours per day, five days per week, typically one-hundred and eighty days of the year. Students spend a great deal of time together, and what is taking place in the community and affecting the community then emigrates into the school community.

There was a time that there was a much clearer separation between things that affected the community and things that affected the school. Technology has blurred those lines for people all over the world, not just for school age children. As technology has made information transmission almost instantaneous, and has placed devices in most people's hands that resemble the famed communicators from Star Trek and other science fiction, the expectations placed upon people to be accessible has grown tremendously. And it is computer and mobile network technology that has had the most recent impact on our society, changing the way we live, work and in some cases, think.

Communication and the ways that technology affects how people relay information has been massively impacted by technology. The question is no longer *whether* the cyber-medium affects the environment, but *in what ways* facilitating technology affects the environment, both positively and negatively. There are many unanswered questions concerning cyber-communication and distance learning for school counseling practice and education: What are the academic, social, and emotional outcomes of distance learning versus those obtained in the traditional classroom? For which students, under what circumstances, and for which content areas is distance learning an appropriate means of providing an education? What are achievement and attitudinal outcomes for school counselors who receive training through the Internet? Does training via computer technology

foster the development of psychologically distant counselors? What will be the impact on children and adolescents whom these future school counselors serve in schools? How does technology influence social/emotional communication and understanding? What are salient cyber-ethical issues?

In a slightly different vein, knowledge of how technology has affected communication and social relationships among students does not translate into a practical and thorough working knowledge of technology itself. Understanding the potential impact on how communication is shared by school counselors in practice does not necessarily translate into an understanding of the implications that type of communication can bring. In other words, knowledge of the actual technology does not infer an understanding of the consequences, and the reverse is true as well. Both need to be thought through and duly considered in this day and age. As a potentially powerful tool for collaboration, online communication has been discussed and cautioned before: “First, school counselors and the counselor educators who prepare school counselors may want to get involved in and become familiar with the network and then communicate their creative ideas and programs over the network. Second, school counselors need to push the network toward innovation. The simple sharing of ideas through text is useful and stimulating. But like much of what appears in professional journals, the text currently shared is difficult to bring to practice in the schools.” (Gerler, 1995, par. 8)

Additionally, people in schools who are concerned with personal social/impacts, academic impacts, and career oriented impacts for students need to be aware of the effect that new technology is currently having on people in the real world regarding personal/social, academic and career oriented behaviors and consequences. Almost ten years ago, 97% of

youth ages 12-18 used the internet at some location and at some level (Ybarra & Eaton, 2005, p. 75). The majority of teens indicated that the internet was the preferred source for information (Skinner, Biscope, Poland & Goldberg, 2003, par. 7)

Today, students in U.S. schools have some level of computer technology access at school, and most students have some level of access independent of the school. According to Pew Research: “In overall internet use, youth ages 12-17 who are living in lower-income and lower-education households are still somewhat less likely to use the internet in any capacity — mobile or wired. However, those who fall into lower socioeconomic groups are just as likely and in some cases more likely than those living in higher income and more highly educated households to use their cell phone as a primary point of access.” (Madden, Lenhart, Duggan, Cortesi, & Gaser, 2013, par. 5). If we need information, we don’t look for it; We “google” it. It is common for people, especially frequent users of technology as a shorthand communication medium to speak out loud in terms standardly used for text messaging and online chat: LOL (laughing out loud), ROFL (rolling on the floor laughing), TTYL, IMHL, O\_RLY, and the list goes on (Netlingo, 2014). If we want people to find a subject we are messaging or “tweeting” about, we “hashtag” it. Hyperlinks help us jump from webpage to webpage to find information. We might occasionally need to unfriend someone from our lists if his or her social media posts make us a little leery.

Along with the advent and widespread use of the internet is also the concept of “Net Neutrality”, which the FCC regards as the “Open Internet, with two overarching principles: 1) That consumers are free to decide which content and level of access they want, and 2) that the open internet “makes it possible for anyone, anywhere to easily launch innovative applications and services, revolutionizing the way people communicate, participate, create,

and do business...” (Federal Communications Commission, 2014). Net neutrality unfortunately makes certain assumptions that should not be overlooked, including equitable access to digital media and information sources by all potential consumers. The proliferation of smartphone technology, phones that can access networks to send and receive digital information as well as transmit phone calls, has changed levels of access and equitable usage dramatically across the United States: There are 314 million people in the U.S.; 173 million of them own a smartphone.

Changes in the world surrounding the school drive changes in the schools. If the mission of schools is to ready community members for participation in, citizenship in and active contribution to the larger society, then maintaining pace with the changes in that society is paramount to accomplishing the mission.

### **Purpose of the Study**

The primary goal of this work is to give school counselors a perspective on how the nature of the work of school counseling has changed with the continued evolution and introduction of new technology into communities and schools alike. “(Technology) can streamline the clerical work of school counseling as well as help in gathering data and delivering information and even assisting with on-line counseling. But, increased dependence on technology is a major reason for school counselors not to diminish individual and group counseling as their primary roles.” (Anderson, 2002, p. 317) One intended result of this research is to help school counselors see how technology will continue to impact the role of school counselor. In turn, this will hopefully help school counselors gain an understanding of the implications and consequences technology is bringing to bear in the world outside of

school, and to hopefully then assist students, parents, and the community at large realize the benefits of appropriate use of technology, and stem the consequences of inappropriate use.

### **Research Questions**

The fundamental research question is: How has technology changed the role and the work of the school counselor? This question is posed in both positive and negative lights to the participants throughout the research in order to obtain a clear understanding of the scope of the impact of technology. This question is very broad in its nature, and requires a qualitative approach in order to explore the stories and nuances of the historical changes to school counseling.

### **Importance of the Study**

It is clear to most that technology is affecting our world on a daily basis. There are very few left in the world population, if any, whom technology does not impact at some level. The generalized definition of technology according to *Miriam-Webster Dictionary* is as follows:

“: the use of science in industry, engineering, etc., to invent useful things or to solve problems

: a machine, piece of equipment, method, etc., that is created by technology.”

In that regard, technology started by using nature-made items to help facilitate solutions for mankind’s needs. Olduvai stone was used two-and-a-half million years ago to remove carcass and meat from dead animals (BBC, 2010, par. 4). Acheulean tools included a

stone affixed to a handle with some kind of fiber could be used to crack open softer objects and to act as a hand axe, whether for good or for greedy purposes (Wynn & Tierson, 1990, p.81). A stick, sharpened to a point and the process of sharpening that stick became important for fishing, for hunting and for defending one's person and loved ones.

We've come a long way since those early days, but sometimes still rely on rudimentary tools and the pointed stick. The importance of knowing about and conceptualizing technology for school counselors comes both in (a) their day-to-day practice of delivering information in large-scale two stakeholders in their communities and schools (This is how you use the pointed stick), and (b) understanding how technology is playing out in the lives of K-12 students so that counselors are better prepared to assist with personal/social impacts, academic deficits and opportunities and career-related obstacles (If you use the pointed stick, here are the potential outcomes and ramifications).

### **Scope of the Study**

This study involves experienced school counselors throughout the state of North Carolina. When solicited for the study, the requirements stipulate that the study will include professional school counselors having 15 years or more of experience in education, which may include counselors who had originally been teachers, or have even served in other capacities in different schools and school districts.

## **Definition of Terms**

Agency – the ability of an individual to initiate action and work toward a desired effect through digital means; this has wide possibility, and could be through resourcing information or controlling a character in a game

Application – App for short, a software program with a specific purpose such as playing a game, researching information for a specific purpose, conducting personal banking, etc.

Artificial intelligence – Computer hardware and software that attempts to replicate human intelligence and reasoning

Asynchronous – taking place at different times, i.e. email conversation or online forum post

Avatar – an online representation of the individual user. Has different representations, and is not always uniform across applications

Big Data – Massive amounts of data that cannot be stored in traditional databases nor processed by traditional database tools

Blog – Originally Weblog, a location online where an individual can self-publish

Cloud computing – Storing, retrieving and accessing information not stored on the individual's personal storage. Examples include Google docs, social media sites, forum posts, some types of email.

Cyberbullying – Repeated, focused harassment of an individual online by another individual or group

Digital footprint – The data trail an individual creates by using digital resources. These exist on one’s own personal computing resources as well as the internet.

Digital Immigrant – a person who has not known digital technology throughout his or her life, but has learned to incorporate digital technology in various capacities

Digital Native – a person who has known digital technology as a part of everyday life

Flaming – Insulting another person by digital means in a public space, possibly in a forum post or social media

FTF – Face to face, referring to communication and interaction as opposed to telecommunication

Gamification – the deliberate attempt to make an application more interesting and user-friendly through the application of gaming features

Internet – a network of networks around the world that links digital devices and information resources together

Listserv – an online forum for sharing ideas and information that can be delivered to individuals by email or forum post and answered the same way. Listservs collect information in “threads”, which string together relevant information on the topic.

Mobile device – an electronic tool not directly connected to a digital access port used to access and / or facilitate information and communication

Online forum – Dedicated web space for sharing information about a topic or topics

Self-publishing – The ability of an individual or organization to publish a piece of media for widespread consumption

Social Media – Applications that allow users to post information and communicate with others within the network.

Synchronous – taking place at the same time, i.e. face-to-face or telephone conversation

Technology – any tool deliberately created with the purpose of facilitating a task

Telecommunication – human communication and interaction facilitated by device (telegraph, computer, mobile phone, etc)

Trolling – Continually and repeatedly communicating aggressively with another person in a public space through digital means

Virtual Community – a group of people who communicate primarily online through computer networks, and generally share some common interest

World Wide Web – the means by which individuals access the Internet

## **Delimitations and Limitations**

A notable limitation of this study as a qualitative study certainly is one of time spent in interview and analysis, as well as one of trying to locate school counselors with the level of experience required. Each interview typically takes a minimum of 45 minutes, with additional analysis to occur afterwards. At some point, it may be beneficial to take the saturated elements of the qualitative study and place those in a quantitative platform to more widely and efficiently assess if other school counselors have had the same type of experiences, both within the same state, and in other states.

An unexpected limitation that the researcher experienced during the pilot study was one of access. As a school counselor in the state of North Carolina, the researcher had hoped to have less difficulty obtaining access to school counselors throughout the state to solicit them for participation in the study. The process actually realized to solicit participants for the study will be further defined in the Data Collection section of the completed dissertation.

A more obvious limitation is that this study is limited to school counselors who work in the state of North Carolina. It is possible that further qualitative and quantitative research may yield different results, whether by a specific state, or by the nation as a whole. Preliminary indications, drawn from the review of literature would suggest that these findings would be widely applicable, which will be somewhat unknown and untested without further research.

The opinion of the researcher on technology and its affordances are of relevance to the manner of conducting the study and potentially the outcome. I recognize that technology has had an incredibly powerful impact on our world, and subscribe to the notion that the impact is largely positive, though not in all cases. I view technology as always helpful to the

accomplishment of some task, but also subscribe to the notion that the intent of the user is the determining factor in whether the technology is used in a way that is good or bad. An example of this would be an identity thief. Technology will be used to help the thief accomplish a goal. The intention of the thief is what makes the use of the tool positive or negative. The same can be said for nearly every tool man has created. The wheel can be used to grind cornmeal, or the wheel can be used to crush someone's finger. The screwdriver can be used to fix a lock or break into a home by breaking or picking the lock. Internet access can be used to communicate and share with people worldwide, or it can be used to hurt, shame and blame.

I also see technology instruction and integration into education as a major artery for both keeping up with our students and staying connected with our communities, and believe that technology will forever be a crucial element to education as well as day-to-day life around the globe.

This lens puts me at a slight disadvantage to conducting interviews regarding technology and how it is used by school counselors, because it excites me to see people recognizing the potential and the problems with technology, and then working to discuss options regarding the concern. Therefore, my use of language encouraging continued discussion may also act as agreement with the participant's particular focus for a topic of discussion. It was important for me to be mindful of that position in conducting analysis of the interviews and compile the results.

## **Chapter Two: Review of the Literature**

### **History of relevant technology**

While the researcher could digress into a complete history of technology, an attempt to limit the discussion of technology in terms of relevance to education and to the school counseling profession will be earnestly made.

There are things that are now not so obvious to anyone reading this that once qualified as high technology, and now sit on the low end of our technology spectrum. The mass production of this dissertation, or the ability to read it in whatever format you have at your disposal; the means to distribute it to all the readers easily and without needing to hand print an entire copy with a quill and ink on vellum, or even on an animal hide. Yet being able to replicate and widely disseminate information is important in our world, not only for business, but for education, and for widespread, programmatic school counseling delivery.

Not many people will think of the telephone as high-level technology anymore, especially a tool so rudimentary that it was at one time hardwire-connected to a port in the wall and provided very little mobility. And yet, that telephone gave school counselors the ability to reach beyond the walls of the school and make contact with support systems for students outside of the school walls that before would have relied on word of mouth via the student, the postal service, or an in-person visit to the home or place of employment on the part of the counselor. That one device saved time, energy and money that could be then dedicated to other tasks.

Duplicating machines have changed the way that school counselors conduct many tasks, from providing and evaluating formal assessments to disseminating opportunities for enrichment activities. Because cost is at times prohibitive, early on schools could not bear

nor justify the cost of early duplication equipment, such as polygraphs, letter copying presses or hectograph equipment. Many years after the introduction of the mimeograph machine in 1884, they were affordable enough to actually be used in schools, generally in the early 1950s (Doss, 1955). A counterpart of the mimeograph machine was the spirit duplicator, invented in 1923 by Wilhelm Ritzerfeld (Doss, 1955). Photocopiers became widely available beginning in the 1970s, and migrating to schools over the next two decades. The makers of office equipment to copy and print grew to include Xerox, IBM, Hewlett Packard, Brother, Lexmark and others, and broadened to include an array of functionalities, such as printing, copying, scanning and faxing.

The most powerful, publicly accessible technology in the hands of the masses today is the computer. The amazing computing power we utilize almost daily, and that has had tremendous influence on our lives started with an entirely different focus. The researcher had the opportunity to visit the Henry Ford Museum where the evolution of the loom was introduced, the device that helps human beings weave together fabric for use in our daily lives. The researcher learned a fact that was stunning: Modern computing is based on a concept developed for intricate loom production by Joseph Marie Jacquard. “The mechanics of the Jacquard weaving loom is often referred to as one of the predecessors of computer science, and even though it is an altogether mechanical construction without electrical components, its sophisticated design of a long series of interconnected punched cards, used to produce patterns on fabric, has been regarded as an early form of computer programs.” (Essinger, 2007, pp. 17-18)

The first loom allowed people to weave fabric at a rate of about an inch an hour, but only in simple, plain patterns. Newer looms stepped that production up to a rate of roughly

one foot an hour for very simple fabrics. More complicated fabrics with intricate patterns required intensive manpower and labor, and were incredibly slow. Jacquard developed a system of punch cards, which were strung together, and as the punch cards were rotated and material was added to the fabric, would create a pattern on the fabric being woven. It increased the production of intricate fabric by over 1500%, an amazing technological feat at the time, and a considerably higher yield than previously thought possible (Essinger, 2007, pp. 17-18). No one could have foreseen that this punchcard system would be the foundation of modern computing.

While many people found varying uses for punchcards through the years, including storage of information, Herman Hollerith was the first to store data on cards that could then be read by a machine other than a loom, and this process was used to record data for the census in 1890. His company, the Tabulating Machine Company later became a major component of a powerhouse in personal computing, the International Business Machines Corporation, or IBM (Cortada, 1993, pp. 53-58). Many machines were developed for business, but the predecessor of the most powerful of these machines was a government project. The world was about to turn upside-down.

Enter the personal computer or PC. "...The IBM PC was introduced in 1981 with a floppy drive, no hard drive, a green phosphorous monitor, and 128 KB of RAM." (Connell, 2001, p.1). But to really understand how we even got the PC, we must first talk about the original computer: the ENIAC (Electronic Numerical Integrator And Computer). The ENIAC, originally called Project PX, is touted as the first general-purpose electronic computer, implying that there were precursors to the ENIAC that held more specific and

dedicated functions. Completion of this machine in 1946 cost around \$500,000, or about \$6,000,000 by today's standards.

“The ENIAC contains about 18 000 tubes, 70 000 resistors, 10 000 capacitors, 6000 switches, etc. It is 100 ft long, 10 ft high, and about 3 ft deep. The filaments require 80 kW of power, the direct-current power supplies produce 40 kW, and the blower system consumes 20 kW of power.” (Burks, 1997, p. 1173)

A few years later, the magazine “Popular Mechanics” published a forward-looking article, stating, “Where a calculator on the ENIAC is equipped with 18,000 vacuum tubes and weighs 30 tons, computers of the future may have only 1,000 vacuum tubes and perhaps weigh 1 ½ tons.” (Hamilton, 1949, p. 168) There is no comparison between these numbers and the desktop computers and laptop computers we use today. The proliferation of technology in our schools is a necessary and logical consequence of the constant, consistent drive to create more computing power, faster processors, smaller but more powerful hardware, and the ever-growing hunger for big data in both the government and private sectors.

So what is this “big data” we keep hearing about? Big data is described as “...now the domain of storage clouds, where the dimensions of data reach the size of terabytes, if not petabytes, and are referred to as Big Data. This term identifies the massive amount of information that is produced, processed, and mined, not only by scientific applications but also by companies providing Internet services, such as search, online advertising, social media, and social networking. One of the interesting characteristics of our Big Data world is that the data are represented in a semistructured or unstructured form. Therefore, traditional approaches based on relational databases are not capable of efficiently supporting data-intensive applications.” (Buya, Selva & Vecchiola, 2013, p. 309)

Only 10 percent of big data is structured, meaning specifically data that are stored in formal databases (Pope & McNeill, 2013, p. 1). That leaves 90% of data as unstructured. Examples of structured data include: social media posts, self-published video footage, e-mail, and data used by means of your smart phone, whether seeking information on the web, for making a phone call. According to Autonomy (2012, infographic), 90% of the data that exist in the world today has been created just in the last two years, and that 2.2 million terabytes of new data are created every day. In order to provide the reader with a better idea of what 2.2 million terabytes the equates to, the table below provides equivalencies in two contexts, one of the processor, or computers ability to think through information, and the second of the strict storage capacity, such as on a hard drive, a compact disc or a flash drive.

The important part of the big data concept for counselors is two-fold: (1) It means that a portion of that unstructured ninety (90) percent of data are being created by, shared with, observed by and consumed by students in our schools, and (2) That is would be logistically impossible for anyone in the role of influence in a young person's life, be it parent, guardian, teacher, counselor, principal to be constantly and consistently up-to-speed with all of the media available for young people to engage. Consider this table for a moment regarding the level of storage capacity readily at the disposal of the general public:

Table 1

*Data Storage Comparisons*

Processor or Virtual Storage	Disk Storage
· 1 Bit = Binary Digit	· 1 Bit = Binary Digit
· 8 Bits = 1 Byte	· 8 Bits = 1 Byte
· 1024 Bytes = 1 Kilobyte	· 1000 Bytes = 1 Kilobyte
· 1024 Kilobytes = 1 Megabyte	· 1000 Kilobytes = 1 Megabyte
· 1024 Megabytes = 1 Gigabyte	· 1000 Megabytes = 1 Gigabyte
· 1024 Gigabytes = 1 Terabyte	· 1000 Gigabytes = 1 Terabyte
· 1024 Terabytes = 1 Petabyte	· 1000 Terabytes = 1 Petabyte
· 1024 Petabytes = 1 Exabyte	· 1000 Petabytes = 1 Exabyte
· 1024 Exabytes = 1 Zettabyte	· 1000 Exabytes = 1 Zettabyte
· 1024 Zettabytes = 1 Yottabyte	· 1000 Zettabytes = 1 Yottabyte
· 1024 Yottabytes = 1 Brontobyte	· 1000 Yottabytes = 1 Brontobyte
· 1024 Brontobytes = 1 Geopbyte	· 1000 Brontobytes = 1 Geopbyte

Using the second set of equivalencies for strict data storage, a very common storage volume on a flash drive at the time of this writing is a 32 gigabyte flash drive. It would take 68,750,000 of those flash drives to hold one day's worth of the data created around the world in one day. Our colleagues, our spouses, brothers, sisters, parents, grandparents, children, cousins, mentors, teachers, students, leaders, followers- just about everyone makes a contribution to, and makes meaning of some piece of big data on a daily, if not hourly basis.

The manner by which big data affects your work as a counselor depends on the type of counselor you are. As a mental health counselor, you may find that sharing new techniques for reflection, introspection and even meditation are helpful for your client population. As a substance abuse counselor, you may find that research conducted by means

of the Internet, or even a forum for substance abuse counselors helps keep you both nurtured in the spirit of the work, and apprised of the newest clinical perspectives, also providing you with the ability to determine their worth and clinical value. As a college level counselor, big data can assist you with providing direction to a student who still seems to be having trouble finding direction regarding his or her major coursework into the opportunities that are available once obtaining the college diploma.

School counselors rely on big data constantly, whether they necessarily believe in its utility or not. Web sites are created by school systems and individual schools to inform its employees, students, parents and communities about its policies, procedures, activities, important events and vital needs. Student records, including demographic, testing, class performance, immunization and attendance information are part of big data, and used every day to make decisions that help shape thudding futures. Whether or not a student pays for lunch or pays for admissions and placement exams is shaped by big data. The options that students consider for life beyond high school are in large part determined by the big data brought to their attention, in part by their own exploration, but in addition, by their peers, parents, and school employees, and regarding the career and college exploration piece, by their school counselors.

Academically, big data is being used throughout our schools to make determinations of all types, and counselors in particular need to be aware of how that data are being utilized to be able to approach a position of advocacy for a student who does not meet the big data standard. It also can be effective in determining best practices for a particular school counseling program, as pointed out by professor Trish Hatch, answering on the American School Counselor's Association website:

*“I'm not much of a statistics expert; is the data portion of the ASCA National Model really all that important?”*

Yes. Data may be the most important part of the ASCA National Model! For many school counselors data has been a four-letter word. Most school counseling programs in the past didn't train us to use data; luckily that's changing. But not to worry. You don't have to be a statistics expert, just willing to begin to look at the data. Data are invaluable because they can tell us what needs to be done, what's working, what is not and what needs to be changed. Data should drive our decision making (what are our student needs?) and validate our activities and interventions (did students gain the knowledge, attitudes and skills we were trying to teach them?) Data also provide feedback on what we either need to stop doing (because it isn't working) or need to do better. Without data, school counselors often perform what we call “random acts of guidance.” School counselors often tell us they teach lessons because “we've always done it this way.” But are the lessons effective? They don't know. My advice is to start slow. Pick one thing to measure or one area on which to focus. Then give it a try. You'll be surprised how enlightening it can be. – Trish Hatch, Ph.D., director, school counseling program, San Diego State University (ASCA website, 2014)

It is worthwhile to discuss just how all that data came to be so present in so many of our lives, and Goldman succinctly brings that forward in his 2014 law casebook. Here are some points to consider when considering the internet and its reach, and accompanying 2014 statistics:

1. “The Internet is not a physical or tangible entity, but rather a giant network which

interconnects innumerable smaller groups of linked computer networks. It is thus a network of networks.” (Goldman, 2014, p.1)

2. In 1981, fewer than 300 computers were linked to the Internet, and by 1989, the number stood at fewer than 90,000 computers. By 1993, over 1,000,000 computers were linked (Goldman, 2014, p.1).

Contrast that to Cisco Systems’s white paper “The Internet of Things: How the Next Evolution of the Internet is Changing Everything”, in which it is reported that 8,700,000,000 devices, including desktop computers, laptops, mobile phones, game systems, household appliances, road vehicles, etc., are connected to the internet (Evans, 2011, pp. 5-7).

3. The Internet had its origins in 1969 as an experimental project of the Advanced Research Project Agency (“ARPA”), and was called ARPANET. This network linked computers and computer networks owned by the military, defense contractors, and university laboratories conducting defense-related research (Goldman, 2014, p. 2). Today, anyone globally can access the internet.
4. No single entity—academic, corporate, governmental, or non-profit—administers the Internet. It exists and functions as a result of the fact that hundreds of thousands of separate operators of computers and computer networks independently decided to use common data transfer protocols to exchange communications and information with other computers (which in turn exchange communications and information with still other computers). There is no centralized storage location, control point, or communications channel for the Internet, and it would not be technically feasible for a single entity to control all of the information conveyed on the Internet (Goldman, 2014, p. 3).

As widespread as the use of computer technology and the internet are, many make the unfortunate assumption that technology is primarily and more heartily used and accepted by males. There is a different viewpoint, though: “The take-for-granted association of men and machines is the result of the historical and cultural construction of gender” (Wajcman, 2010, p. 144). Sometimes, it takes someone outside of the normative circles of power to help people think differently. Dr. Sherry Turkle, a renowned and at times controversial professor from MIT, stepped away from crowd to challenge people to reconsider computers and technology with two bold propositions: First, that the computer and the software it uses are not inanimate, cold data crunching objects and programs, but are evocative tools, used to think with (Turkle, 1995, pp. 17, 141-151); second, that moving among identities with a realization of the process, of who we are in one context (i.e., family) versus who we are in another (i.e., work) is more healthy than attempting to maintain one sense of identity throughout every context (Turkle, 1995, pp. 9-12).

More recently, at the Delight 2014 conference in Portland Oregon, Intel labs anthropologist Genevieve Bell wanted to remind technology workers to “remember the humanity”, and reminded the audience that there are essential unchanging characteristics common to the human condition, five things that in her words “make us resolutely human”. (Bell, 2014) In short she stated:

1. We need friends, family and connection.
2. We want to belong to a community.
3. We want our lives to have meaning and to have meaning in our lives.
4. We need objects and artifacts to talk about who we are.
5. We need to keep secrets and tell lies, with research citations in support.

If there is a human condition to be remembered where education and technology meet, school counselors are the first people in a school building who should be working to bridge that lost connection and keep in mind the humans and human needs among the wires and devices and information transmissions facilitated by technology.

### **History of school counseling**

In order to better appreciate where the roles of school counselors are going, it is worthwhile to briefly explore the history and changes in the profession. School counselors' positions grew out of a technology background. The original school counselors were teachers in who were pressed into service to provide students with more guidance in choosing careers and opportunities beyond the school setting. Some credit Jesse Davis with the first schoolwide comprehensive guidance program. When Davis became a principal in 1907, he is reported to have utilized English teachers to ensure certain uniform competencies were met by students in order to transition to life beyond high school (Pope, 2009, p. 253). Another position is that the inception of the role of the school counselor was in response to the Industrial Revolution, and was not a solitary role, but one added-on to the duties of an existing vocational education teacher. This was the construct of Frank Parsons. Parsons created a vocational bureau at a settlement house with the help of the Boston in YMCA. Settlement houses were used to help immigrants and indigent citizens transition to the workforce. In collaboration with the city schools of Boston, Parsons implemented districtwide vocational counseling (Jones, 1994, pp. 288-290). Without additional compensation for the extra duties, the vocational counselor was expected to provide six major services: orientation, assessment, information, counseling, placement and follow-up.

The primary function of schools at this time was to prepare students to go to work (Gysbers & Henderson, 2001, pp. 246-247). Gysbers & Henderson outlined 15 primary duties of those early school counselors, which included: meeting with students in grade six and above who were failing, finding out why they were failing, and attempting to find a remedy; encouraging teachers to make connections between what they were teaching and occupational problems; using the cumulative record card when advising children; consulting records of intelligence; urging students to stay in school; and interviewing and “checking cards” of all students who were leaving school to ensure understanding of the requirements for obtaining a work card (Ginn, 1924 as cited in Gysbers & Henderson, 2001, p 247).

Paisley and Borders (1995, p. 150) report the primary duties of the school counselor during this time period to include promoting character development, teaching socially appropriate behaviors, and assisting with vocational planning. School counseling models contained elements of this approach well into the 1960s, and the role of the school counselor has been constantly evolving ever since. Paisley and McMahon (2001, par. 5) stated that, “The most significant challenge for school counselors rests in the ongoing debate over role definition”. With the current emphasis on comprehensive programs, it is counselors that must daily cope with varying priorities, expectations, and demands. Paisley and McMahon delineated 13 roles that a counselor may be asked to fulfill in a day, particularly in comprehensive programs (2001, par. 5-7).

In the early 1950s, the American Personnel and Guidance Association (later the American Counseling Association) was created. Later that decade, the launch of Sputnik propelled reform efforts, both socially and educationally, and spurred not only changes in science and technology education, but also in the structure and purpose of school counseling

(Wittmer, 2000, pp. 2-3). There are two reform acts were instrumental in providing funding for those efforts: the National Defense Act of 1958, and the Elementary and Secondary Education Act of 1965 (Beesley, 2004, pp. 259-261; Gysbers & Henderson, 2001, pp. 247-248; Paisley & Borders, 1995, p. 150; Wittmer, 2000, pp. 3-5). The funding allowed schools to create full-time positions for counselors, actually hiring three-times as many counselors (Wittmer, 2000, pp. 3-5; Baker, 2001, pp. 76-78) and no longer requiring the sharing of roles as teacher and counselor.

In the late 1960s, a national conference was held in Missouri focusing on the role of the school counselor and how it needed to develop and grow. A joint effort of the U.S. Department of Education and the University of Missouri-Columbia occurred five years later, producing a document, providing direction and structure for the development of school counseling programs, the first of its kind.

The 1970s and 1980s found school counselors' jobs at risk of elimination, due to a combination of "identity crisis" and a lack of data to support the positive impacts counselors make in schools (Baker, 2001, pp. 76-78; Beesley, 2004, p. 260). Fortunately, a resurgence and redefinition, with clear objectives and focused goals directing school counseling, toward a "services approach" (Mauer & Gysbers, 1990, par. 2 & 9) took place, driving the focus of school counseling on a student's personal development (Baker & Gerler, 2008, pp. 30-32; Mauer & Gysbers, 1990, par. 20). Galassi and Akos (2004, pp. 147-148) indicated that the comprehensive school guidance and counseling programs that arose from that movement deemphasized administrative and clerical work and crisis counseling, emphasizing proactive actions and structured experiences focused on developing and reaching personal, social, educational and career goals.

During the 1990s, a push to revamp elementary school counseling led to the redesign of comprehensive school counseling programs, supported by the Elementary School Counseling Demonstration Act of 1995 (Paisley & Borders, 1995, p. 150). The funding it provided enabled cooperation among additional pupil support personnel, attempted to limit student-counselor ratios and also attempted to maximize direct service to students (Baker & Gerler, 2008, p. 34-35). Additional legislation and national initiatives to improve school counseling include the School-to-Work Opportunities Act of 1994, and the 2003 Transforming School Counseling Initiative.

Much effort has been expended to deliberately define the roles of school counselors, leading to legislation and national standards, and yet the roles of middle and high school counselors vary depending on the district and the school administrators (Bailey, 2012, p. 42 & 99). Additionally, school counselors have come to simultaneously navigate personal, academic, social and career issues, sometimes all within the same conversation.

Training requirements across the United States include graduate-level work, with practicum and internship experiences as a requirement, and some states require additional specialization courses in education. The majority of states require a level of standardized testing in order to meet the requirement of licensure as a school counselor, and a majority of states require criminal background checks (Stateuniversity.com).

There are two governing bodies that school counselors are wise to stay in tune with regarding concerns for ethics and technology. There is the American Counselors Association (ACA) and the American School Counselor Association. The ACA has a dedicated section in its Code of Ethic, titled *Section H: Distance Counseling, Technology and Social Media*. With additional references throughout the Code encouraging counselors to be certain that

technology used is appropriate and professional, and is being used with prudence and competence.

Section H.1 states:

#### H.1. Knowledge and Legal Considerations

##### H.1.a. Knowledge and Competency

Counselors who engage in the use of distance counseling, technology, and/ or social media develop knowledge and skills regarding related technical, ethical, and legal considerations (e.g., special certifications, additional course work).

Unfortunately, it is a well-defined problem in academic literature that educators overall are not being provided adequate training relative to the technology they are expected to use. School counseling programs have the ability to incorporate general technology in their programs, but due to the specific state and district adoptions of student information database software, counseling programs cannot teach students to use the array of software that exists. This is one major concern about the adoption of technology in counseling, although the ACA makes reference to technology 32 times in its Code of Ethics.

The American School Counselor Association has made great progress in defining, supporting and promoting the role that school counselors should ideally play in schools. From providing a central hub and resource from which counselors can obtain information and learn more about new and innovative ways to assist students and parents to establishing a structure under which schools can examine their school counseling programs for core functionality and effectiveness by way of the ASCA National Model, ASCA has helped to shape both how school counselors are viewed and how they operate and are utilized in schools.

ASCA defines the three primary dimensions of school counseling as: Academic, Career Development and Personal Social (ASCA, 2004). When thinking about these three dimensions, how well versed are counselors relative to the changes technology brings, and sometimes imposes upon those three dimensions? In order to improve practice and continue to develop professionally, counselors across the country question their core competencies in each of the dimensions. In a computer technology savvy society, it makes sense to posit questions directed at those areas with specific regard to technology proficiency. For instance:

**Academic.** Do school counselors appropriately identify technology that students are using that is both beneficial and detrimental to academic success? Are counselors able to creatively use technology to both assist individual students and provide wide-scale opportunities for academic progress?

**Career Development.** Are school counselors aware of the options that exist relative to career development and how to use these tools with students individually and in classroom settings? Can counselors convey to community stakeholders the importance of these tools and help instruct community stakeholders in how to more fully engage in career development using these tools?

**Personal/Social.** Do school counselors have enough grasp on the background of technology to be able to assist students with difficulties living a life surrounded by and inundated with technology? Are school counselors capable of recognizing the benefits and detriments that different forms of technology that accompany our young people walking through the doors of our schools?

In this regard, ASCA is like each other education focused and student-centered arena. It is not an early adopter of technology, and the standards of technology that ASCA has

included in its competency framework for school counselors must be vague enough to capture the expansion that technology has and continues to undertake. Those technology competencies are as follows:

## I. SCHOOL COUNSELING PROGRAMS

School counselors should possess the knowledge, abilities, skills and attitudes necessary to plan, organize, implement and evaluate a comprehensive, developmental, results-based school counseling program that aligns with the ASCA National Model.

### I-B: Abilities and Skills

An effective school counselor is able to accomplish measurable objectives demonstrating the following abilities and skills.

I-B-1g. Uses technology effectively and efficiently to plan, organize, implement and evaluate the comprehensive school counseling program

## IV. DELIVERY

School counselors should possess the knowledge, abilities, skills and attitudes necessary to deliver a school counseling program aligning with the ASCA National Model.

### IV-B: Abilities and Skills

An effective school counselor is able to accomplish measurable objectives demonstrating the following abilities and skills.

IV-B-1f. Knows, understands and uses a variety of technology in the delivery of school counseling core curriculum activities

## V. ACCOUNTABILITY

School counselors should possess the knowledge, abilities, skills and attitudes necessary to monitor and evaluate the processes and results of a school counseling program aligning with the ASCA National Model.

### V-B: Abilities and Skills

An effective school counselor is able to accomplish measurable objectives demonstrating the following abilities and skills.

V-B-1i. Uses technology in conducting research and program evaluation.

(ASCA, 2012)

Relating the technology competencies to the technology available and the counseling tasks is part of a discussion that involved ethical concerns and comfort of individual counselors. A hammer can be used to hammer nails. It can also be used to tear out drywall or trim. It can be used as a paperweight or to break bricks and blocks. The intent of the user helps define the purpose of the tool, and as such, technology tools can be applied in different ways by different users. Reviewing the technology and tasks found in the literature review, the technology and tasks might be applied to the following technology competencies:

Table 2

*ACSA Competencies and Technology Usage (per Literature Review)*

<b>Technology</b>	<b>I-B-1g</b>	<b>IV-B-1f</b>	<b>V-B-1i</b>
<b>Tools</b>			
Telephone	X	X	
Duplicating machines	X	X	X
Computer	X	X	X
Web pages	X	X	
Assessment	X	X	
Data mining software			
Data analytic software	X		X
Word processing	X	X	
Spreadsheets	X	X	
Self-publishing	X	X	X
Email	X	X	X
Listservs	X		X
<b>Counseling tasks</b>			
Record-keeping	X	X	
Consultation	X	X	
Referral		X	
Supervision / training	X	X	
Therapeutic intervention	X	X	
Establishing rapport	X	X	
Confidential discussions	X	X	
Evaluating presenting problems	X	X	
Implementing affective interventions	X	X	
Word processing	X	X	
Spreadsheets	X	X	
Research best practices	X		X
Collaborating	X	X	X
Consulting	X	X	X

There is a need for a body of researched, focused body of literature to be developed around the growth, proliferation and expansion of technology into the profession of school counseling. There have been some fundamental and initial attempts made to speak about technology as it relates to school counseling, but best practices related to the ASCA National

Model are not being academically researched and validated. The kernels that are being offered in academic literature vaguely reference technology, or at best address Excel as a tool for data analysis. Some examples:

Hartline and Cobia, writing about the need for school counselors to provide clarity in the reporting and accountability of their services to support student achievement stated that, “the integration of technology via the utilization of an online calendar; the time analysis tool of School Counselor Accountability and Task Analysis Program (SCAATAP); other technology programs such as Excel” could be utilized (Hartline & Cobia, 2012, pp. 72-73). Lewis and Hatch, in their 2008 article on strength-based professional identities said only that, “The high expectations challenge preservice school counselors to contribute talents for technology, marketing, accounting, and event planning,” with no other mention of technology (Lewis & Hatch, 2008, p. 116).

In 2010, Clemens, Carey & Harrington indicated that, “Knowledge of school counselors' use of computer software may be important because it could help identify opportunities for professional development and improve data management.” (Clemens, Carey & Harrington, 2010, p. 132) There is no other identification of specific software or hardware to be used in conducting the work. Mason, for the NASSP (National Association of Secondary School Principals) in 2010 indicated that, “The purpose of the SCPIS is to evaluate the comprehensiveness of the school counseling program on constructs that are consistent with national movements in the field (e.g., use of data and technology, collaboration with other staff, an emphasis on serving all students).” (Mason, 2010, p. 280) The emphasis of the SCPIS is a quick audit of a school counseling program, and its

references to technology tie to the National Model, but again are vague and broadly cover accessing, analyzing and using data for program improvement. (Appendix E)

The most extensive and direct mention of school counselors using technology is found in Poynton and Carey's 2006 article, "An Integrative Model of Data-Based Decision Making for School Counseling": "The use of technology tools such as Microsoft's PowerPoint, Publisher, Excel, and EZAnalyze can facilitate the summarization and dissemination of the DBDM team's work." (Poynton & Carey, 2006, p. 128) The focus here is reporting out the results of an analysis of the school counseling program, not in actively conducting work with students, parents and community members.

Regarding formal technology integration, in the 2002 edition of *Theory into Practice*, Hayes and Paisley (2002, pp. 169-170) forewarned of the changes that should be undertaken in school counselor preparation programs. In a list of five basic assumptions, they stated that, "learning to use available technologies has become a vital life skill, and embracing change in the application of technology to the problems of work and daily living has become an essential attitude for surviving and thriving in the 21<sup>st</sup> century." (Hayes & Paisley, 2002, p. 171) While this a fantastic position, there is not a framework provided anywhere further in the article to direct and guide counselor preparation programs going forward regarding technology usage. Writing for the National Association of Secondary School Principals in 2008, McGlothlin, Miller and Guillot attempted to provide guidance to principals on what to look for when trying to assess if a new hire will be an effective secondary school counselor. The section on Assessing Technology Competencies is 10 lines long, and involves only two questions:

"1) Describe your technology competence.;

2) What type of continuing education do you need regarding technology?"

In 2013, Maras, Coleman, Gybsers, Herman & Stanley published "Measuring Evaluation Competency Among School Counselors". The focus of this article regarded "The Effective Practices Survey", in which counselors in Missouri participated in research to determine validity of this survey. There were particular items that specifically spoke to the use of data, and some others with direct reference to technology pieces. Many of the technology inferred items had a primary focus of either using data to conduct student needs assessments or evaluate programming pieces and implementation, which is a vital piece of technology's importance to the modern day school counselor. Based on the evaluation items, there were only two specific technologies addressed, and both were software. The first was PowerPoint in item 6: "I can create a PowerPoint presentation to share my evaluation results." (Maras, Coleman, Gybsers, Herman & Stanley, 2013, p. 104). The second was item 17: "I know how to use technology (e.g. EZ Analyze, Excel) to manage and use data (e.g. create graphs, create databases). (Maras, et. al, 2013, p. 104)

Instead, best practices are being shared on a peer-to-peer basis informally. Much of that informal sharing is taking place electronically, and the Facebook groups High School Counselors' Network and Caught in the Middle School Counselors are wonderful examples. Those group discussions range from creating visuals at the school environment and inviting office décor to procedures for reporting self-harm and managing suicide crisis. (Appendix D)

There is another component of ASCA that specifically deals with the Ethical Standards for School Counselors, and is an ongoing point of concern for counselors in utilizing and implementing technology for school counseling programs, particularly as it

relates to social media. Each of the areas listed below has the possibility of being tied in with, facilitated by or otherwise intertwined with technology:

#### A.2. CONFIDENTIALITY

b. Explain the limits of confidentiality in appropriate ways such as classroom guidance lessons, the student handbook, school counseling brochures, school Web site, verbal notice or other methods of student, school and community communication in addition to oral notification to individual students.

e. Promote the autonomy and independence of students to the extent possible and use the most appropriate and least intrusive method of breach. The developmental age and the circumstances requiring the breach are considered and as appropriate students are engaged in a discussion about the method and timing of the breach.

h. Protect the confidentiality of students' records and release personal data in accordance with prescribed federal and state laws and school policies including the laws within the Family Education Rights and Privacy Act (FERPA). Student information stored and transmitted electronically is treated with the same care as traditional student records. Recognize the vulnerability of confidentiality in electronic communications and only transmit sensitive information electronically in a way that is untraceable to students' identity. Critical information such as a student who has a history of suicidal ideation must be conveyed to the receiving school in a personal contact such as a phone call.

#### A.4. Dual Relationships

Professional school counselors:

a. Avoid dual relationships that might impair their objectivity and increase the risk of harm to students (e.g., counseling one's family members or the children of close friends or

associates). If a dual relationship is unavoidable, the school counselor is responsible for taking action to eliminate or reduce the potential for harm to the student through use of safeguards, which might include informed consent, consultation, supervision and documentation.

b. Maintain appropriate professional distance with students at all times.

c. Avoid dual relationships with students through communication mediums such as social networking sites.

d. Avoid dual relationships with school personnel that might infringe on the integrity of the school counselor/student relationship.

#### A.8. Student Records

Professional school counselors:

c. Recognize the limits of sole-possession records and understand these records are a memory aid for the creator and in absence of privileged communication may be subpoenaed and may become educational records when they are shared or are accessible to others in either verbal or written form or when they include information other than professional opinion or personal observations.

#### A.9. Evaluation, Assessment and Interpretation

Professional school counselors:

b. Consider confidentiality issues when utilizing evaluative or assessment instruments and electronically based programs.

#### A.10. Technology

Professional school counselors:

a. Promote the benefits of and clarify the limitations of various appropriate technological applications. Professional school counselors promote technological applications (1) that are appropriate for students' individual needs, (2) that students understand how to use and (3) for which follow-up counseling assistance is provided.

b. Advocate for equal access to technology for all students, especially those historically underserved.

c. Take appropriate and reasonable measures for maintaining confidentiality of student information and educational records stored or transmitted through the use of computers, facsimile machines, telephones, voicemail, answering machines and other electronic or computer technology.

d. Understand the intent of FERPA and its impact on sharing electronic student records.

e. Consider the extent to which cyberbullying is interfering with students' educational process and base guidance curriculum and intervention programming for this pervasive and potentially dangerous problem on research-based and best practices.

## B.2. Parents/Guardians and Confidentiality

Professional school counselors:

a. Inform parents/guardians of the school counselor's role to include the confidential nature of the counseling relationship between the counselor and student.

## C.3. Collaborating and Educating Around the Role of the School Counselor

The school counselor, school counseling program supervisor/director and school counselor educator:

- a. Share the role of the school counseling program in ensuring data-driven academic, career/college and personal/social success competencies for every student, resulting in specific outcomes/indicators with all stakeholders.
- b. Broker services internal and external to the schools to help ensure every student receives the benefits of a school counseling program and specific academic, career/college and personal/social competencies.

#### D. RESPONSIBILITIES TO SCHOOL, COMMUNITIES AND FAMILIES

##### D.1. Responsibilities to the School

Professional school counselors:

d. Delineate and promote the school counselor's role, and function as a student advocate in meeting the needs of those served. School counselors will notify appropriate officials of systemic conditions that may limit or curtail their effectiveness in providing programs and services.

g. Assist in developing: (1) curricular and environmental conditions appropriate for the school and community; (2) educational procedures and programs to meet students' developmental needs; (3) a systematic evaluation process for comprehensive, developmental, standards-based school counseling programs, services and personnel; and (4) a data-driven evaluation process guiding the comprehensive, developmental school counseling program and service delivery.

##### D.2. Responsibility to the Community

Professional school counselors:

a. Collaborate with community agencies, organizations and individuals in students' best interest and without regard to personal reward or remuneration.

b. Extend their influence and opportunity to deliver a comprehensive school counseling program to all students by collaborating with community resources for student success.

c. Promote equity for all students through community resources.

## E. RESPONSIBILITIES TO SELF

### E.1. Professional Competence

Professional school counselors:

d. Strive through personal initiative to stay abreast of current research and to maintain professional competence in advocacy, teaming and collaboration, culturally competent counseling and school counseling program coordination, knowledge and use of technology, leadership, and equity assessment using data.

e. Ensure a variety of regular opportunities for participating in and facilitating professional development for self and other educators and school counselors through continuing education opportunities annually including: attendance at professional school counseling conferences; reading Professional School Counseling journal articles; facilitating workshops for education staff on issues school counselors are uniquely positioned to provide.

### E.2. Multicultural and Social Justice Advocacy and Leadership

Professional school counselors:

c. Acquire educational, consultation and training experiences to improve awareness, knowledge, skills and effectiveness in working with diverse populations: ethnic/racial status, age, economic status, special needs, ESL or ELL, immigration status, sexual

orientation, gender, gender identity/expression, family type, religious/spiritual identity and appearance.

d. Affirm the multiple cultural and linguistic identities of every student and all stakeholders. Advocate for equitable school and school counseling program policies and practices for every student and all stakeholders including use of translators and bilingual/multilingual school counseling program materials that represent all languages used by families in the school community, and advocate for appropriate accommodations and accessibility for students with disabilities.

e. Use inclusive and culturally responsible language in all forms of communication.

f. Provide regular workshops and written/digital information to families to increase understanding, collaborative two-way communication and a welcoming school climate between families and the school to promote increased student achievement.

g. Work as advocates and leaders in the school to create equity-based school counseling programs that help close any achievement, opportunity and attainment gaps that deny all students the chance to pursue their educational goals.

## F. RESPONSIBILITIES TO THE PROFESSION

### F.1. Professionalism

Professional school counselors:

c. Conduct appropriate research, and report findings in a manner consistent with acceptable educational and psychological research practices. School counselors advocate for the protection of individual students' identities when using data for research or program planning.

### F.3 Supervision of School Counselor Candidates Pursuing Practicum and Internship Experiences:

Professional school counselors:

b. Ensure school counselor candidates have experience in developing, implementing and evaluating a data-driven school counseling program model, such as the ASCA National Model.

c. Ensure the school counseling practicum and internship have specific, measurable service delivery, foundation, management and accountability systems.

### G. MAINTENANCE OF STANDARDS

Professional school counselors are expected to maintain ethical behavior at all times.

G.1. When there exists serious doubt as to the ethical behavior of a colleague(s) the following procedure may serve as a guide:

3. The school counselor should keep documentation of all the steps taken.

(ASCA, 2010)

As a much longer list, and a direct expectation of school counselors, there are many facets of the technology that, depending on their use, the intent of the use of the technology and the subsequent data generated via the technology, could easily conflict with the ASCA Ethical Standards. It would be a complete academic exercise to examine each of these areas and come up with ways by which school counselors would adhere to best practices in the field. It would also be a worthwhile exercise, and should be considered for future research to help counselors streamline the best mechanism by which to aggregate, sort and review data, communicate with stakeholders and administer the school counseling program.

## **Technology as a Communication Tool**

In order to be of help to students, parent and the community, it is vital for school counselors to define and communicate their role to others (Staley & Carey, 1997, p. 380). School counselors can utilize Web pages to help define that role and promote their program to administration, faculty, parents, and the community. A Web page can also promote certain school-wide guidance and counseling programs, such as peer mediation, student recognition, and character development activities. In addition, a guidance department can post a master calendar on its Web page that advertises special upcoming events (Van Horn & Myrick, 2001, p. 125). In the early development of websites and webpages by individual schools and school counseling departments, one-way communication was the norm. Now, schools and counseling departments have the capability to create mechanisms for two-way communication through webpages. The decision to allow two-way communication through webpages must be considered carefully, and often will not be utilized, prompting the end user to engage in email or another mechanism in order to contact the department or counselors.

As technology prevalence and web application have grown, so have the ways that school counselors utilize technology and the web. In a thesis study conducted, Bell (2011, p.8) asked, “What is the principal’s perception of how technology has influenced teachers, counselors and students?” Relative to counselors, the principals overwhelmingly stated that the influence of technology on their counselors was a moderate one (71.4%), or a positive one (28.6%). No principal indicated that there was any level of negative influence. The open-ended statements from “Positive” responses included:

“Our counselors are able to upload student assessments a lot faster.”

“It has influenced the creativity and the amount of things that counselors are able to complete.”

As Green and Keys (2001, p. 93) indicated, and Paisley and McMahon (2001, p.151) insisted, technology brings with it certain blessings and roadblocks. Technology seems to bring increased efficiency and effectiveness, but only to those counselors who are comfortable with its use. In terms of program delivery, school counseling can “take advantage of technology in its delivery of preventative and developmental school counseling programs” (Paisley & McMahon, 2002, p. 108). But, technology can be expensive. Dependence on technology in delivering counseling services may exacerbate the “digital divide” between families with Internet access from those who cannot afford computers. However, current statistics from Pew Research indicate that 78 percent of teens have a cellphone, and that ninety-three percent of students have access to a computer at home (Madden, et. al, 2013, par. 5), which may actually reduce the divide.

School counselors can no longer sit back and hope that others will recognize the good things they are doing. With accountability a top priority in educational settings, programs are now under increased pressure to prove that what they are doing is successful and effective. A new mindset is needed to convince school counselors to accept the challenge of demonstrating their effectiveness. School board members require a defensible rationale for justifying programs and personnel with concrete data. If professional school counselors do not take an active role in showing how school counseling programs make a positive difference in the lives of school-aged children and adolescents, programs and personnel will continue to be eliminated (Gibson & Mitchell, 1999, pp. 36-38). Quantifying the

effectiveness of school counseling programs and of school counselors has proven to be incredibly difficult.

As a result, many professional school counselors who are convinced about the importance of data collection complain about the lack of relevant data collection instruments, and they rely on published standardized inventories. However, these instruments often are too costly and do not always reflect what the counselor needs. Technology today allows anyone, counselors or anyone else, to efficiently and effectively design and deploy data collection instruments that will measure program effectiveness, community need, etc. However, the training is non-existent, incomplete or ineffective. There is likely no detailed, standard measurement of a counseling program that will provide assistance in the same way in a rural Wisconsin school district as it will in an urban California school district. The population is different, the local options for all levels of education are different, and the needs of the community are different. The urban district may have a higher need for social services interventions, whereas the changing face of agriculture may present a need for education of students and parents and advocacy for information about the looming changes of the labor market. That is difficult to know without a local assessment driven at uncovering the true needs and desires of the community.

It has been addressed previously that there is voluminous data to be used, and so the disparity between what exists and what counselors can use or feel comfortable using is at issue. Embracing some of the newer technology-assisted data-gathering practices that provide for a more current and relevant experience to students may be in line with helping to resolve the concerns. “The development of computerized learning modules enables assessment of students in systematic, real-time ways. Data mining and data analytic software

can provide immediate feedback to students and teachers about academic performance. That approach can analyze underlying patterns in order to predict student outcomes such as dropping out, needing extra help, or being capable of more demanding assignments. It can identify pedagogic approaches that seem most effective with particular students.” (West, 2012, p. 2) This Brookings Institute report also addresses the difficulties created for both education professionals and students due to a lack of immediate feedback for students due to the labor involved in hand-grading everyday assignments. The lack of proactive measures taken to assess comprehension and provide digital resources to address the concerns also was a discussion point (West 2012, p. 1).

In her 2001 dissertation, Cabaniss studied how counselors and counselor educators relied on computer technology in their work, which counselor-related tasks were being accomplished with technology, how counselors were using technology in job-related tasks, and perceptions of how that use of technology would change in the following ten years. The results indicated that more than half (59%) of the tasks counselors and counselor educators accomplished utilized technology. The counselors and counselor educators surveyed made distinctions between appropriate and inappropriate usage of technology for tasks like record-keeping, assessment, testing, consultation, referral, supervision and training. Among those surveyed, inappropriate tasks were considered to be therapeutic intervention, establishing rapport, confidential discussions, evaluating presenting problems and implementing affective interventions (Cabaniss, 2001, pp. 93-101). If studied again in 2014, some counselors and counselor educators might view these items with a slightly different perspective, given progressions in social media and technology practices.

Those surveyed indicated that they used technology for: word processing, spreadsheets, statistical analysis, and publishing for tasks in marketing/client recruitment, report and record-keeping, in-session intervention/therapy/counseling, clinical assessment/testing, and professional development, e-mail, both private and on professional listservs, for activities in therapy, consultation and referral, supervision/training and professional development, use of the world wide web, including websites, chatrooms, and teleconferencing, for tasks in marketing, therapy, consultation and referral, supervision/training, and professional development. The study found that 72% of the counselors believed technology would help increase efficiency and improve the quality of their service provision, and that 92% of the work was predicted to use some level of technology by 2008.

In order to utilize technology at a level of competence, counselors have to understand the current acceptable practices of technology in both realms of education and counseling, but additionally meet the demands of the steep learning curves technology seems to present on a frequent basis. “Challenges exist for school counselors who are transferring technology skills into practice to meet the demands of comprehensive school counseling programs and the developmental needs of students. Before the school counseling profession can address such issues with the goal of advancement, it must know the current state of technology training, comfort, and usage by practicing professional school counselors.” (Carlson, Agahe & Bartlett, 2006, p. 256)

“Many forms of computer technology are already in use by counselors. Internet based technology includes e-mail, websites, computer bulletin boards, searchable databases, and discussion groups. Other non-Internet based technology used by the counseling profession

includes spreadsheets, word processors and computer software. However, the extent to which these technologies are being employed is still insufficient.” (Springer, 2005) In order to follow the growth of technology, school counselors need to increase their awareness and learn to utilize skills through training (Lundberg & Cobitz, 1999). Schools, however, spend money on hardware and software, but often forget to provide adequate training for the staff. Grossnickle, Laird, Cutter & Tefft (1983) told us that technology was not being implemented in schools by school personnel because they were not being trained, and that most school departments felt they lacked information on practical application.

Computer technology keeps developing, and with each step of its evolution comes changes in the uses of computers in counseling (Sampson, Kolodinsky, & Greeno, 1997, p. 203). Counselors are aware of more diverse ways to integrate computer technology into their programs; however there is a need for more in-service trainings to show counselors how it can be done successfully (Hardesty & Utesch, 1994, p. 9; Trilling & Hood, 1999, p. 17-22). However, even with the pieces of technology that are frequently discussed and are among the most frequently utilized, counselors are facing problems with best practices. “In fact, of the accessible Web sites well over half did not include information about the role of the school counselor(s) and even fewer provided an overview of the school counseling program mission or information about counselor credentials.” (Milsom & Bryant, 2006, pp. 214-215)

“Our challenge is to make possibilities seem reasonable and workable to colleagues who are less inclined toward technology and to professionals who have had little opportunity to explore the available technology” (Gerler, 1995, par. 22). Experts agree that there is a high likelihood that technology will facilitate a larger volume and wider array of counseling tasks; thus, counselors and counselor education programs need to prepare for the challenge.

Consistent with these findings, in his literature review, Granello (2000) points out that, especially concerning the keeping of records, computer usage in counseling has become a necessity. He anticipates that 90% of counselors' activities will involve computers in the future.

An additional complication is that technology is evolving faster than anything else in our lives: "The problem, however, is that there has been little systematic exploration of the use of computer networks in counseling. A better understanding of counseling applications available on existing computer networks (the Internet), combined with an understanding of evolving computer capabilities, can help counselors be better prepared to design and use applications to effectively serve clients when the future information highway becomes fully operational." (Sampson, Kolodinsky, & Greeno, 1997, p. 203) A study published in 2006 found that counselors were comfortable using computers, but not comfortable with the expanse of software on which they had no training; The counselors surveyed indicated comfort with e-mail, but concerns with the ethical ramification of utilizing e-mail and lack of training; the counselors surveyed indicated that their most utilized audio / video media was a VCR and monitor, and the researcher's conclusion was that further training would likely drive utilization of more advanced and current media sources; that counselors were being trained in technology through outside or continuing education courses, not through inside professional development; age and years of experience did not drive comfort level, but instead generalized comfort in using technology was the primary factor; and finally, those comfortable with technology used a wider array of software than did other counselors (Wilczenski & Coomey, 2006, pp. 327-330).

Referring to a listserv, which at the time of publication was a primary source for widespread, group information sharing, Gerler stated: “First, school counselors and the counselor educators who prepare school counselors may want to get involved in and become familiar with the network and then communicate their creative ideas and programs over the network. Second, school counselors need to push the network toward innovation. The simple sharing of ideas through text is useful and stimulating. But like much of what appears in professional journals, the text currently shared is difficult to bring to practice in the schools.” At that time, the researcher of this study was actively participating in listservs that were dedicated to spreading information about and discussing legal and ethical issues regarding the Americans With Disabilities Act, and how implementation was and was not taking place at colleges and universities around the country.

In 2002, Brandt and Henning discussed the future of information technology, and its seemingly natural classifications relative to impact on humans: “The use of the new information and communication technologies can be considered on four different levels: individuals, groups, organisations and networks.” (Brandt & Henning, 2002, pp. 210-211) School counselors have realized the impact of the various levels, but the authors, who are not counselors, issued a caution frequently heard by counselors and others whose primary concern is the growth and development of young people: “We may always need to remind ourselves: in reality, human life is not some roleplay, frequently it is not playful at all.” Additionally, they issued this warning: “Reality does not follow a technical code but it is characterised by complex, even chaotic structures. Human interaction is never restricted to a code of a generated reality.” (Brandt & Henning, 2002, p. 219)

A consistently repeated theme for both educators and counselors regarding technology use was their discomfort with technology due a lack of professional development. In one study where a training intervention was enacted to assess the perceptions of school counselors regarding technology, results indicated that the school counseling training intervention was not effective in changing school counselors' perception of self-efficacy or perceptions of the usefulness of computer technologies. However, there were significant differences in computer knowledge, skills, and comfort anxiety levels after participants experienced the treatment intervention (Van Horn, 2003, p. 59). Furthering that point, Sabella offers this advice: "Given the rich array of potential technologies and the hefty demands on professional development they pose, research in the area of school counseling and technology should help to establish a sharper and highly relevant focus on technology (and related competencies) that is useful for ultimately advancing our students' personal, social, career, and academic growth." (Sabella, 2010, p. 609)

Because a large portion of the work of a school counselor deals with the world of work, the ability to access that array of technologies in the interest of assisting students with relevant information is crucial. As a result, the nature of effective school counseling services has been required to adapt to the changes in the surrounding environment. "Increasingly, the "new workplace" is more dynamic and less patient with workers unable to quickly add value. Responsibility for obtaining basic skills, training, and postsecondary education needed for employment has shifted to the employee. Global competition, technical advances, and constant innovations challenge employee tenure and vertical mobility. Workers are expected to be more competent in communication, math, computer technology, and self-management, problem-solving, and decision-making skills." (Feller, 2003, par. 11) Preparing students for a

world of change and lifelong learning has become essential for school counselors in comprehensive school counseling programs. “The nature of the work world has changed considerably over the last three decades. There is less employment stability, more economic uncertainty, and more continuous change occurring than ever before, due to such forces as globalization, downsizing, and advancing technology.” (Lee & Johnston, 2001, p. 177)

The tools for career exploration are changing as rapidly as the world of work. Today, you can access career interest inventories online and obtain instantaneous results without laborious calculation. *The Occupational Outlook Handbook*, a publication of the United States Bureau of Labor Statistics that details job descriptions, median salaries, positive or negative longitudinal outlooks for the profession and information on professional organizations, is readily available online for perusal for anyone with access. “There are several tools available through the virtual career counseling web site which aid users in further exploring and examining the world of work. A single web address which connects users to several different web sites that house hundreds of videos that interview professionals in different career settings or detailing specific aspects of different occupations is one example. This site is not only able to educate individuals about the various career assessments, but also provide different methods that clients may be able use to explore themselves and their potential career interests.” (Vandermeeren, 2009, p. 169) With advancements in the technology in the surrounding world come changes in the mechanisms by which counselors can maintain and efficiently drive directed information to students. Web-based career information provides both the counselor and student with a tremendous deal of career information, more than has ever been available before. Additionally, high school counselors can facilitate their students' exploration of colleges and other

postsecondary options via the Internet. “Vocational assessment is enhanced by the use of technology. More specifically, the advancement in computer-assisted techniques greatly enriches career assessment and intervention.” (Tang, 2003, p. 62)

An additional viewpoint that school counselors can provide to students and communities is a working knowledge of how technology is changing the job search. Resumes are now readily transmitted online to employers, who sometimes use technology to scan the resumes for keywords instead of visually scanning the information. Some companies are advertising for talent through online mechanisms and posting employment opportunities through websites, while other organizations are looking for talent through social media outlets like Youtube and Twitter. Opportunities for people to search online for employment are plentiful, with websites like Indeed.com, Monster.com, Glassdoor.com, Careerbuilder.com and SimplyHired.com, just to name a few. These websites generally have the highest web traffic and subsequently the farthest reach in the world of online job-hunting. (ebizMBA.com, 2014)

Communication about the services provided by school counselors are amazingly important to the work of school counselors. “The key to making this happen lies within the seamless integration of multiple software programs and the far reaching power of the Internet. In essence, technology can carry the message throughout a vast terrain as if it were a baton being carried over a stretch of many miles using many runners. Once making an initial investment of time and work, various technology applications can make your efforts work for you.” (Sabella & Booker, 2003, par. 4) The amazing thing about counselors and communication and technology is that the counselor, hopefully a model of communication, often seems impaired in communicating to the school community, including administrators,

teachers, parents and students. “School counselors need both to have and to know how to use the current computer technology in order to work with the communication opportunities and information databases they need to perform effectively as professional educators.”

(Eichenholtz, 2001, p. 10)

It seems to create a discussion headed into a downward spiral: Counselors must constantly learn to utilize technology in order to perform the work and continually move forward, but there are concerns that the application of technology can undermine the human interaction of counseling. The problem of applying new computer technology, especially in human service areas such as school counseling, is actually greater than the engineering problems involved in designing and creating the technology. There is the concern and true possibility that counselors, like other human beings, may become so wrapped up in the possibilities of the technology that we lose sight how the technology should be applied to meet human needs. This is not just a concern for those in counseling, but even for experts in the world of computing, like Dr. Sherry Turkle: “Human relationships are rich and they're messy and they're demanding. And we clean them up with technology. And when we do, one of the things that can happen is that we sacrifice conversation for mere connection. We short-change ourselves. And over time, we seem to forget this, or we seem to stop caring.”

(Turkle, 2012, 7:05) It is important to counselors and important for counselors to remember the human factor when communicating via technology. Small affordances like a greeting can go a long way in humanizing the digital communication that has many ways of coming across without some forethought and deliberate intent on behalf of the sender.

This is one of the reasons that counselor education programs and professional development should reach beyond the normal counseling paradigm to include

communication and social psychology theories such as Social Identity Theory, Social Presence Theory and Actor Network Theory. These theories deal with the philosophy, ideology and analysis of social structures as well as technology implications and impacts on society. The creator of Social Identity Theory, Tajfel defines social identity as “the individual’s knowledge that he belongs to certain social groups together with some emotional and value significance to him of this group membership” (Tajfel, 1972). If this sounds familiar, it should; Erik Erikson said much the same thing regarding cultural relativism when discussing the stages that affect adolescence, and Erikson is a standard in school counseling curriculum. John Turner, a student of Tajfel’s, assisted with the development of the theory of social identity. Together, they posited that people have a natural tendency to self-categorize into groups, with an individual self-affiliating with one group or more. This self-affiliation builds identity by means of group membership, and by setting and flavor to the myriad ways our young people develop, a great portion of which is currently affected by a technological revolution. The focus for school counselors and school personnel then becomes larger than solely the world of school counseling, but broadens out to draw for context, for depth and breadth the expansive ways that our young people communicate and are affected by two dimensional screens through which they seem to live and breathe.

In order to remain relevant and connected, professional school counselors must become information purveyors, teaching process, and modeling appropriate behaviors socially, educationally, professionally and technologically. School counselors must learn and relearn how to communicate effectively with the entire school community using the tools of the day, because today’s social media are not going to be the communication vehicle of choice for the students of tomorrow. “As in most professional occupations, school counselors

have no choice but to become part of the technological revolution.” (Eichenholtz, 2001, p. 37)

### **Societal Change**

Our young people, who are growing up with technology at their disposal literally from birth, are using and discovering technology at an incredibly rapid pace. “Most of today's youth live in a world surrounded by technology and have more of a grasp of living in the 21<sup>st</sup> century than most of the teachers do.” (Bell, 2011, p.10) A major obstacle to understanding how technology is affecting today’s youth is in combatting the assumptions that often accompany the stereotypes of youth and technology. “Just because teens can and do manipulate social media to attract attention and increase visibility does not mean that they are equally experienced so or that they automatically have the skills to navigate what unfolds.” (Boyd, 2014, p. 13) Some young people are able to learn the etiquette and social norms of the internet on their own. Unfortunately, some young people do not have guiding forces to help them avoid the pitfalls of technology use overall, much less the intentional misuse and the repercussions that can follow.

We have a generation of young people who fall under a series of different popularly growing definitions, one of which is “Digital Natives”, coined by Palfrey and Gasser (2008, pp. 1-15). A Digital Native is a young person born into a technology-driven culture. There is a distinction drawn between the Digital Native and the “Digital Immigrant” (Palfrey & Gasser, 2008, p. 4), in that the Native operates a bit differently than a person who gradually drifted into a technology-driven culture, or the Digital Immigrant. The Native, having experienced technology in various forms while growing and learning and forming identity,

conceptualizes and utilizes technology in a tremendously different way. In 2012, a CNN journalist commented on her own experience in raising a Digital Native, an experience very much akin to one other parents experience:

“My sixth grader has a secret life online. It wasn't so secret about a week ago when I discovered his public profile on Instagram, where he was posting dramatic photos and soulful "Versagrams" (graphical text messages), for all the world to see. One moment he was in love, the next full of despair. I was stunned.” (Sachs, 2012)

Generationally, there are differences in how technology is used and adopted, and the younger generation seems more fluidly able to grasp technology as it is introduced. In a recent Huffington Post article, Diana Graber's headline asked the question, “Kids and Technology: Can We Ever Really Keep Up?” (Graber, 2014, Title) Graber is the co-founder of an organization called Cyberwise, focused on helping adults keep in touch with the constant changes and new technology to which their children are introduced. In a study conducted by Harris Interactive on behalf of Crucial.com, two in five parents reported frequently asking their children for technology assistance, and in 2009, Symantec reported that, “While nearly half of the Town Hall participants reported having a social networking site, Symantec learned that many had not thought about the consequences of posting personal information on sites such as MySpace, Facebook or Friendster. During a review of a faux social network site, youth discussed what content was appropriate to share privately and publicly, including the types of information to keep private.” (Symantec, 2009, par. 6)

This is a growing trend, with organizations being created to help parents stay abreast of the rapid change taking place and the implications for youth. “Helping young people navigate public life safely should be of significant public concern. But it's critical to

recognize that technology does not create these problems, even if it makes them more visible and even if news media relishes using technology as a hook to tell salacious stories about youth...the internet mirrors, magnifies and makes more visible the good, bad, and ugly of everyday life." (Boyd, 2014, p.24) It is important to note that Boyd recognizes that there must be intent behind the use of the technology, or any other tool for that matter, that determines how the tool is used, positively or negatively. There are some technology theorists who oppose this view, and this is part of a larger discussion that revolves around Actor-Network theory, which includes objects and the intent in their design as a determinant in the tool's or technology's ability to affect others (Latour, 2005, pp. 21-25).

Driving home the point to further blur the generational question is the concept that, with technology, all of the global, generational and hierarchical limits and boundaries are potentially unnecessary. "It is essential to be savvy about generational differences because in the twenty-first century generations are working together more than ever before, thanks to the demise of the bureaucratic organization in favor of a horizontal style, new technology, globalization, and a more information-friendly atmosphere." (Arsenault, 2004, p. 125) Essentially, the world is operating on a different plateau than before. For counselors this could have several implications, including the need to help individuals move through the obstacle of technology interference in the perpetual discussion about generational understanding. Plainly, many young people already think that older generations do not understand them. Now, technology may in fact complicate that discussion, because it is one more facet of life with which we are intensely involved that younger generations could see as a divisive wedge between young and old.

The world in which we are receiving entertainment and information is so markedly different from those of previous generations that it can be incredibly difficult to encapsulate the disparity in short commentary. “This makes the Internet fundamentally different from previous communications innovations such as the development of the printing press or the introduction of radio and television. These are hierarchical technologies - inflexible and centralized. By contrast, the new media is interactive, malleable, and distributed in control. The new media will do what we command of them. And tens of millions of N-Geners around the world are taking over the steering wheel.” (Tapscott, 1998, p. 26)

Working with students and young people developing along the spectrum of ages 5-18 and sometimes older takes a very special set of skills, and a lot of perseverance. Learning, and learning some more, and relearning and rethinking the ways we envision students as the world changes is not just important, it is vital. Being aware of the ways the world is changing and how our young people view and access the world is a massive part of that undertaking. “If we are not able to tap into that tool (the internet) as educators, we are not preparing students as best we can.” (Bell, 2011, p. 30) The reality is that the world wide web is where young people are going for information and help. “Internet help-seekers can opt for anonymity, experience a reduced sense of risk, and access cost effective services at their convenience. Internet counselors may be able to reach those who are typically members of underserved populations or who are reticent to seek face-to-face counseling.” (Knapik, 2008, p. 58)

More and more academic media outlets, as well as mainstream media outlets, are being devoted to the ramifications of everyday life brought about by computing technology. The journal, *Computers in Human Behavior* frequently carries scholarly articles that

expressly deal with this impact. Articles such as “Friendship 2.0” (Davis, 2012, pp. 1527-1535), and “Text-based communication influences self-esteem more than face-to-face or cellphone communication” (Gonzales, 2014, pp. 197-203) delve further into the dynamics. The former study compares how adolescents engage in casual vs. intimate digital communications, and seeks to determine the effects on sense of belonging and self-disclosure. The latter gauges how self-esteem is heightened when “computer-mediated communication...reduces in-person social pressures, and puts greater emphasis on message content...” (Gonzales, 2014, p. 201). A social media journalist recently stated, “We have become so used to measuring and evaluating our popularity and strength of our friendships by our digital presence and social media interactivity that we’ve begun to lose sight of what a friendship should be.” (Stolz, 2014, par. 14) Daily, there are examples of researchers and media observers taking note of the effects technology is having on human beings. In a study published in October 2014 of computers in human behavior it was “found that digital media decreased children’s ability to read other people’s emotions.” (Morin, 2014, par. 1)

**Legal Governance.** It is fair to say that the law is a substantial marker of our values and our changing culture, and as such, the law has only recently started to acknowledge the need for limits and definitions related to computer technology. School counselors must also be aware of the implications of technology use not only for students but for themselves. The appropriate use of computer technology, whether at one’s home, at one’s school, or at one’s place of business has to become part of the discussion because so many students do use computer and mobile technology. But as has always been the case with technology, the law can barely keep up. A 2003 case in California {Intel Corp. v. Hamidi, 30 Cal.4<sup>th</sup> 1342 (Cal.

2003)) found that an Intel employee did not have the right to send emails that were critical of the company to other employees, regardless of his opinion that his first amendment rights were being violated (Goldman, 2014, pp. 94-98).

Copyright laws now have to deal with the fast and widespread distribution of digitally produced material, instead of the time when photocopying pages and books was much more difficulty, when essentially stealing a work product was much more cumbersome. In 1999, an online peer-to-peer file sharing service called Napster became available, and gained widespread use. In 2001, the rock band Metallica challenged the ability of the service to freely distribute its music without royalty or permission. {A&M RECORDS, Inc. v. NAPSTER, INC., 239 F.3d 1004 (9th Cir. 2001)} While the outcome of that case was found in favor of the plaintiffs, the reality became clear that the long standing paradigm of the music industry was in question, and that now smaller players in the business had more individual power. “Even when artists had not authorized their songs to be released through Napster or another service, the potential for such a market was clear. Tim McGraw’s jump to the top of country music charts was linked to an unauthorized release of his new single onto Napster. Similarly, the release of Radiohead’s album *Kid A* was met by a tremendous consumer reception following unauthorized availability of tracks from the album on Napster before the album was released.” (Rayburn, 2001, II.A.13)

Just years ago, courts of law wanted nothing to do with digital media as a mechanism for evidence in court proceedings. Now, it is frequent that video taken by mobile phone, text messages and email exchanges are being used to substantiate claims of harassment or proof of dialogue between two or among several parties. In a recent instance, Facebook was used as the delivery system for divorce papers. “Twenty-six-year-old Ellanora Baidoo of

Brooklyn, New York, was granted permission by Manhattan Supreme Court Justice Matthew Cooper to serve her husband divorce papers through Facebook. The divorce papers would be sent in a private message directly to her husband, Victor Sena Blood-Dzraku.” (Heater, 2015, par. 3) Since Baidoo was unable to physically locate her husband, and had been unable to locate him for an appropriate amount of time, the court felt that publishing her intent to divorce through social media would suffice, as she had been able to prove delivery and response of other social media messages. Recently, a federal court ruled that social media could be used to notify potential class-action lawsuit participants in an action taken against Gawker Media, LLC. “Plaintiffs sought to be allowed to “follow” former interns on Twitter, “friend” on Facebook, and “connect” on LinkedIn in order to be able to send direct, private messages from their lawyers to the former interns regarding the class.” (Wu, 2015, par. 6)

A great deal more could be said and explored regarding the challenges to the law and the changing boundaries that technology brings to our society. The examples above do not reflect issues of law in trademarks and domain names; the worldwide phenomenon that is Google; or questions of constitutionality when laws are enacted in an attempt to protect minors {*Reno v. American Civil Liberties Union*, 521 U.S. 844 (1997)}, such as COPA, or the Child Online Protection Act. All of these issues have dynamic interplay on how young people in a technology-oriented culture live their lives.

**Identity Development.** In *Born Digital*, where Digital Natives are defined and discussed, this example was used regarding identity development: “Imagine a sixteen-year old living several hundred years ago in the agrarian age. She had a home in a remote village. She had two forms of identity: a personal identity and a social identity. Her *personal* identity

derived from the attributes that made her unique: her personal characteristics, her special interests, her favorite activities. By contrast, her family members, friends and neighbors contributed to her *social* identity.” (Palfrey & Gasser, 2008, p. 17) The changes in how identity is being developed for the current generation is astounding to many, particularly for counselors who value human interaction, and yet, our ability to participate in identity development at this level relies on our education and knowledge about how those identities are being developed and the technologies driving that development.

Young people access the internet to seek out like minded individuals, and establish a sense of identity, which technology also affects tremendously. As influencers in the development of young people, counselors knowledgeable about technology and its impact have an integral role to play. It is important that counselors can grasp the dynamic interplay that technology and computing bring to our young people. A recently renowned Microsoft researcher took note of her own experience with technology, and how it shaped her worldview as a teen: “The internet presented me with a bigger world, a world populated by people who shared my idiosyncratic interests and were ready to discuss them at any time, day or night.” (Boyd, 2014, p.4)

Boyd explicated the ways in which computing technology has drastically changed the ways in which young people live their lives, making their abilities to connect with the outside world more widespread and viable. Specifically, she addressed four items that at one time were very separate and isolated aspects of telecommunication that have congealed via the world wide web to change the way people in general access and share information.

"Although these affordances are not in and of themselves new, their relation to one another because of networked publics creates new opportunities and challenges. They are:

persistence: the durability of online expressions and the content ;

visibility: the potential audience who can bear witness ;

spreadability: the ease with which content can be shared; and

searchability: the ability to find content." (Boyd, 2014, p.11)

**Issues for Counseling and Technology.** In order for computers and technology not to be impersonal, Wood and Smith (2005, pp. 48-67) advised that consideration must be given to telepresence; that is, the extent to which one feels connected and present is dictated by means of the medium in play, which can vary dependent on the medium and the device utilized. An area affecting telepresence is vividness, or how much sensory information a medium provides to the recipient. Another factor affecting telepresence is interactivity, which deals with manipulating the medium in terms of both speed, or how quickly the medium responds to attempts at interaction, and range, or the extent to which one is able to make the medium different. The example used by Wood and Smith (2005, p. 51) pertains to an exclusively auditory instance of a recording made in a studio versus a recording of the same music made in a live setting, and how it changes with crowd noise, and less-controlled effects, like sound waves in the open.

In Wilczenski's 2006 study, it was found that counselors were comfortable using computers, but not comfortable with the expanse of software on which they had no training; The counselors surveyed indicated comfort with e-mail, but concerns with the ethical ramification of utilizing e-mail and lack of training. Those comfortable with technology used a wider array of software than did other counselors. In 1995, Gerler noted that one of the

fundamental problems a school counselor faces is in experimenting with and creatively applying that knowledge, then sharing with others.

Schools have difficulty keeping up with the tremendous curve in technology advances, and one of the chief documented complaints of educators, and also of the counselors interviewed for this study, was that rapid changes in technology changes create a constant problem for educators and counselors to actually conduct their work and maintain that constant learning curve. It could be that perspective is driving the view of a constant problem, instead of a forward-moving opportunity: “The integration of technology can be viewed as a transformational process. Honey and Moeller (1990) have argued that traditional teaching methods are incompatible with methods that support technology adoption.” (Kurt 2012, p. 559) The complications that arise in the nature of how schools, and subsequently counselors are provided and trained on new technology adds to this dynamic. In some cases, little to no training is provided for hardware and software counselors are expected to use, and often, the technology is dated when it finally reaches the school level.

Another problem for counselors is confidentiality. While confidentiality is a primary tenet of the work of counselors, a guarantee of absolute confidentiality using any form of computer technology is not realistic (Casey, Bloom, & Moan, 1994, p. 2; Spinello, 2000, pp. 109 & 120). Encryption software is available, but expensive and unwieldy. “Even though privacy protocols are time-consuming, they are essential for communication and record keeping. Assurances that sensitive information can be revealed only when ethically appropriate to do so must be in place. It is imperative that cyber-supervision also include a plan to address crisis management.” (Wilczenski, 2006, p. 329)

There are other concerns Wilczenski & Coomey raise, which really should be of primary concern for counselors as professionals for whom clear, open and honest communication is considered to be of primary importance: “Because one cannot see or hear another in a computer exchange, doing harm is experienced as less personal. Inappropriate or unethical behaviors so apparent in face-to-face contact are more subtle online. Breaches of ethics also can occur unintentionally because of lack of familiarity with codes of cyber-ethics, and because counselors and students can become desensitized to others by the lack of interpersonal feedback inherent to cyber-communication.” (Wilczenski & Coomey, 2006, p. 321)

It is suggested that effective and efficient uses of technology among school counseling professionals are necessary for making guidance and counseling programs more comprehensive and an integral part of our schools (Carlson, et. al, 2006, pp. 255-256). Black (2002, p. 1), along with a host of others, delineates the disparity between the ASCA recommendation for personnel to pupil ratio. While ASCA advocates for 250 students per counselor, the realities of school district funding and conducting the core business of education are tremendously different. While not viewing technology as a panacea for these issues, Black sees technology as an opportunity to reshape presentation models and repetitious paperwork to better meet student needs.

Technology adoption will keep most people who are not directly intertwined in technology fields behind. The rate at which our society adopts new technology is amazing, and increases over time with the proliferation of communication options. After electricity was introduced for the use of the public in 1873, it took 46 years for one quarter of the American population to use it. The telephone, 35 years; the radio, 31 years; the television, 26

years; the personal computer, 16 years; the mobile phone, 13 years; and the world-wide web, only seven years. (Appendix B)

A fantastic example of how quickly we adopt technology exists with the monolith of the world-wide web, Google. Google was registered as a domain name in September of 1997. Today, it is the king of web search, and the brand name has become a verb in our vocabulary. With its search engine, you can find almost anything in the world for which you are looking, and often will find things you did not intend or did not even know you were seeking. Google attempts to calculate your intended search, as well as things you may have mistakenly searched. But beyond that, Google can take you around the world, and has made it so that I can see the house I grew up in from a street perspective, even though I am 787 miles away. (Appendix C) Google allows me to share and edit documents with another person, or with the world.

An aspect that is constantly shifting and changing for the school counselor, and is largely based on how technology progresses returns back to the roots of school counseling, namely assisting students in looking at potential careers. However, in today's job market, as technology evolves, as robots become increasingly utilized for production purposes, as technology both eliminates and creates jobs, the school counselor is often not in a position to knowledgeably coach students regarding particular careers. The focus then for school counselors in a technology rich age must primarily be one of coaching the career development process, so that students have the ability to engage in self-led career development several times in life. In 1900, the average life expectancy in the United States was 47.3 years of age. In 2012, the average life expectancy in the United States was 78.4 years of age. Technology, in the form of medical advancement, has helped us live longer

through better nutrition, better food, health conscious practices, and advanced medical procedures. Where a person in 1900 might only ever experience one career, the potential exists for the average person in the United States today to experience three full 20 year career tenures if he or she starts working at the age of 18. And sometimes, with the rapid deployment of technology, comes a substantial shift in the economy.

In his book *The World is Flat*, Thomas Friedman expounds upon the changes he has researched throughout the world economy. Friedman refers several times to companies like UPS, who have needed to reinvent ways they do business in order to stay current, and maintain relevancy in a technologically turbulent economy (p. 167). While he notes that there are occasionally opportunities created in the United States through these shifts, the overwhelming theme is that we are en route, all of us, to a more global economy, where jobs that deal with information are no longer domestically exclusive. A doctor in India has the capability to provide a second opinion on an MRI scan that was taken in Kentucky (p. 79, p. 82). Computer programs can be written from nearly any location in the world, as long as the code can be digitally transmitted to the client. The world of work, particularly as it relates to information technology is now a moving target (pp. 95-96).

Take for example the numbers posted in a recent “Scientific American” article (Sept. 2, 2014). The following jobs did not exist in 1999: computer network support specialist, computer network architect, security analyst, web developer and logistician. In 2013, 509,550 people were employed in jobs with one of those titles (D’Costa, 2014, par. 4). So in a world where counselors are a purportedly a foundational block of career exploration for students, how can counselors keep up with the changes in the job market, the new

opportunities for youth moving forward and the training they will require? Another question altogether is, do they?

Additionally, do counselors know and can they communicate to students, parents and community members the importance of looking forward to see how technology will potentially affect the students' career trajectories? Almost daily, articles are published that reflect a lack of understanding on the part of people in general as to how technology is used by employers, and that it is used by employers to make decisions about an individual's employability. In July of 2014, a nurse was fired for showing the world via Twitter the aftermath of a hospital room where she and others worked diligently to save a man's life (Bundy, 2014, par 1-3). There was no malicious intent, just an effort to share the pride she took in helping to save a patient's life. In September of 2013, a teacher in Ohio found himself without a job and the pariah of his community after he posted a racially-charged rant on Facebook (Teachers Racist Facebook Post, 2013). It begs a question: If the adults and purported role models don't seem to know any better, how can the children be expected to know how to behave with technology? Yes, the kids are alright, but will bad examples lead them astray?

### **The Disadvantage of the Research Process**

With a subject like technology, counselors and schools are at a clear disadvantage relative to private industry: with severely hampered budgets, serious time constraints already maximized by students-per-counselor ratios, constantly changing graduation standards and requirements, and constantly evolving technology, how do counselors stay on top of the latest technology, and how invested should they be in learning new tech. Driven by private

enterprise and seeking shares of the billions of dollars spent on technology each year, companies are constantly striving to invent a better smartphone, a newer microprocessor, a more powerful and complex video card, and create larger data memory storage that will fit on the head of a pin. Black's dissertation, which noted the trouble with counselors constantly trying to ride the learning curve related to splintered technology tools reinforces the need for a clearinghouse of sorts, a testing ground for counselors who do the work in offices, hallways and cafeterias of our schools. Even were such a filter created, would the almighty dollar then continue to overrule decisions about practicality?

Even should schools find the ability to keep up with technology, can they keep up with the different ways to use and the different contextual points that inevitably accompany a person's individual choice to use or not use a device or technology, use a particular device or technology as intended or not use as intended. "...an interesting aspect raised by some of the questioned adolescents refers to the fact that through online communication they have the opportunity to speak openly and honestly, to say things that usually do not say in face to face interactions, because in this type of interaction "we are not judged." (Oprea & Stan, 2012, p. 4091). But what other effects are being realized by frequent and sometimes unfettered use of technology? How is that affecting the manner in which our young people are connecting with others and developing a sense of identity? "Human social responses can be altered by how virtual-self representations are implemented, and those can play a role in shaping the way people interact with others" (Yoon & Vargas, 2014, p. 1044).

The rapid nature of the change taking place was captured well by Boyd in *It's Complicated*, published in 2014: "Quite probably, what's popular when you're reading this book is different still. As I write this, Facebook is losing its allure as new apps like Instagram, tumblr, and Snapchat gain hold. Social media is a moving landscape; many of the

services that I reference throughout this book may or may not survive. But the ability to navigate one's social relationships, communicate asynchronously, and search for information on line is here to stay." (Boyd, 2014, p.27)

## **Chapter Three: Research Methods and Methodology**

In this chapter, the researcher's context and role, research methods, including philosophy, ontology, epistemology, and methodology will be outlined. Data collection, sources and analysis will be discussed, with consideration given to the nature of qualitative inquiry, and the benefits and limitations of such inquiry. Focus will also be applied to the ASCA national model, specifically regarding the three technology-specific competencies within the model.

### **Researcher Context, Approach and Role**

Researchers all hold their own contextual views and life experiences that shape and impact how they design, conduct and share their research, and the researcher's individual lens also holds sway in the reporting of the findings, with theoretical orientations and professional and personal ethics in tow. The researcher's approach to research and the research paradigm is primarily interpretivist, with world view that the meanings of many things are ascribed by people, and that socially we create structures and classifications with few exceptions. The ascription of meaning, in the researcher's opinion takes place by virtue largely due to technology, without which we would not be able to discover and uncover the microscopic processes that create life, see the far off celestial bodies that exist or know more about our own earthly bodies without some mechanism to see beyond the limits of the human eyes. Intuition helps us to survive, but technology can help us to thrive or can cause us to decline as a civilization.

## **Reflexivity**

In qualitative research, reflexivity is a tricky concept at best, depending on the contextual approach of a researcher. Alvesson and Skoldberg tell us that, "...in the literature there are different uses of reflexivity or reflection which typically draw attention to the complex relationship between processes of knowledge production and the various contexts of such processes, as well as the involvement of the knowledge producer." (Alvesson & Skoldberg, 2009, p. 8) Ritchie and Lewis point out that the object of inserting reflexivity into research is to work diligently for objectivity and neutrality, analyzing our own biases that might work their way into our research and skew the data (Ritchie & Lewis, 2003, pp. 10 & 20). Regarding the confounding question of reflexivity, Holloway and Jefferson remind us that, "What distinguishes between good and bad use of reflexivity is obviously a vexed question for social science." (Holloway & Jefferson, 2013, pp. 56-83).

Vital to reflexivity then is the need to constantly reflect back on any interpretation of the research, assumptions in the line of questioning, directed focus in qualitative interviewing that limits or change the data and possibly the result due to the researcher's individual focus or contextual narrative. It is important for the researcher to remember that the individual experience brought to this study and experienced prior to this study is not the lived experience of all the participants. The values and goals the researcher brings into the field of school counseling are not the shared values and goals of all participants in the research, and so careful attention must be paid not to attribute value or meaning to data that seem more valuable due to one's own lived experience. As the instrument through which the data are collected, the researcher's frame of reference and context must be considered: "...the

resulting narratives are always a product of the relationship between interviewer and interviewee.” (Holloway, et al, 2013, pp. 27-55).

The researcher’s background is from a middle-class family in a metropolitan, urban environment. Technology was not rampant, but it was evident and available, moreso to more affluent young people than to the researcher. Schools were not versed or steeped in technology during K-12 schooling for the researcher; the first computer the researcher worked on was a magnetic cassette tape system, programming Basic and using word processing features. The next opportunity to work on any technology-related to school was with TRS-80 computers, using large and truly “floppy” discs in the secondary school environment. It was not until undergraduate student teaching, and then graduate school in the university work environment when the researcher truly became invested in technology for educational purposes. Creating worksheets on an Apple MAC computer to supplement teaching in English was the first use. Word processing, without constant recreation of documents and use of online forums for information sharing came next in the graduate and work environment. Very little of what the researcher learned, and continues to learn about technology has been fostered through a formal learning environment; some was technology-delivered tutorial, some was trial and error, some was word of mouth.

As is often the case with professional development in education, very little is directed toward developing technology for useful solutions in schools, and even less is focused on the use and implementation by school counselors. The researcher’s bias in this regard has two directions. The first is the level (and perceived lack thereof) of useful information focused around technology and how counselors can and should utilize these tools in their work. The second is the knowledge shared with school counselors about how technology is shaping the

lives of the students with whom they work, and subsequently changing the issues with which counselors are faced on a daily basis.

Personally, the researcher has an ongoing interest in technology, relative to how it empowers the individual person if accessible, regardless of gender, ethnicity or other factors by which people make classification and distinction. Today, if an individual has access, she or he can learn about nearly anything in the world, whether the inquiry is about legal matters, chemistry or auto mechanics. An individual can watch tutorials on cooking, can read instructions on using technology tools, or can listen to podcasts about religion and philosophy. The world is now an individual's differentiated-learning "oyster". Information is available in printed form, audio, form and video form at our fingertips.

## **Research Design**

The methodology for this study was a combination of historical and collective case study interviews, detailing the individual ethnographies of each participant relative to their individual experiences with technology in their education and school counselor capacities. The historical perspective was important because its purpose is to describe and examine events of the past to understand the present and anticipate potential future effects. A case study focus allowed the researcher to describe in-depth the experience of each person. Speaking to evaluative case studies, Stenhouse wrote that, "...a single case or collection of cases is studied in depth with the purpose of providing educational actors or decision makers (administrators, teachers, parents, pupils, etc.) with information that will help them to judge the merit and worth of policies, programmes or institutions." (Stenhouse, 1985, pp. 49-50) Unique to case studies, "...in comparison to other qualitative approaches, within case study

research, investigators can collect and integrate quantitative survey data, which facilitates reaching a holistic understanding of the phenomenon being studied.” (Baxter & Jack, 2008, p. 554)

Regarding case studies, “The need for case study research arises out of a desire to understand complex social phenomena.” (Yin, 2014, p. 3) Combining these two elements for research purposes allowed the researcher to capture the individual, lived experiences of school counselors over a durable period of time, and also elicit from them any positive or negative elements that have existed in their experiences regarding the implementation of technology in school counseling. A caution for case study research is that, “A common pitfall for the novice case study researchers is to include too many propositions and then find that they are overwhelmed by the number of propositions that must be returned to when analyzing the data and reporting the findings.” (Baxter & Jack, 2008, p. 552)

The historical perspective is not necessarily separate and apart from the collective case study experience, because this research specifically sought participants who have longevity in the profession and can speak about events of the past in order to understand what is taking place now, with the ultimate purpose of developing a plan in moving forward as new technology is constantly introduced to the world, to education institutions, and at another level, to school counselors. The collective case study perspective drew from multiple sources which included the participants and a body of literature that elicits both qualitative and quantitative data from education professionals across the spectrum, with more focus in that literature on classroom teachers than either administrators or on school counselors.

## **Research Questions**

As stated previously, the overarching research question guiding the study revolves around an exploration of the ways in which technology has changed the role and the work of the school counselor. The direct line of questioning intends to uncover that overarching focal point by asking counselors (a) to review the technology they have seen historically implemented in their work over a longitudinal period of time, (b) to detail their perspectives on the impacts that technology has had on their work as a school counselor, (c) elicit which technologies have been the most helpful and the most harmful, and (d) to provide suggestions for technology integration going forward.

There are six questions that have been asked of the participants. While six questions may seem limiting, those six questions have yielded interviews that often had to be shortened to honor the time of the participants, and provided a wealth of information about the current state of technology in school counseling programs and departments. Due to the open-ended nature of the questions, the counselors interviewed spoke at length about their individual histories with technology, the growth of technology in education and school counseling, the benefits and disadvantages of introduction and implementation of new technology, the training available or lack thereof, and their individual recommendations for implementation of new technology as progress takes place.

## **Content Validity**

Through the pilot study, participants were asked for their feedback on the protocol items, with no revisions suggested by those professional school counselors. Additional feedback was obtained through consultation with professors of counselor education, with

revisions suggested for two questions to allow for deeper exploration of the phenomenological experience of the individual participant. Following is an explanation of the purpose and focus of the questions in the study.

1. How long have you been in education, and in what capacities (please list chronologically)?

This question collects the length of time the counselor has served in an education-centered capacity, and the scope of the capacities in which the counselor has served.

2. Over the course of your time in education, what technologies have you seen implemented, and what have been their evolutions?

The goal of this item is to gather information on the technology pieces that have been introduced into the work of educators and schools, also drilling down to the technologies implemented in the school counseling offices. This also establishes a point of reference for the questions that follow.

3. How have these technologies impacted your work? How have they impacted the lives of students, parents and the school overall?

This item intends to capture the experience of the changes in the work of school counselors due to technology, and the observations of school counselors on the effects and trends to which they bear witness as technology is introduced in our society.

4. What one technology has been the most beneficial? Please describe how it has been beneficial.

Allowing latitude for individual perspective and reference, this question will allow counselors to pinpoint an individual technology that is having impact on their work,

and the way(s) in which it has been beneficial.

5. What one technology has been the most harmful? Please describe how it has been the most harmful.

Allowing latitude for individual perspective and reference, this question will allow counselors to pinpoint an individual technology that is having impact on their work, and the way(s) in which it has been .

6. What professional development has been made available to you or have you engaged in related to technology, and by whom was it offered?

In all of the interviews, this was answered within the context of other questions, and became moot.

7. What suggestions do you have for technology integration going forward, specifically as it relates to school counseling?

### **Criteria for Participation**

Collective case studies allow for researchers to view issues from varying perspectives, and in this case, querying school counselors across a spectrum of grade levels in order to obtain a clearer picture of the overall dynamic that technology plays on the work of school counselors as they help our children from youth to adolescence. The study encompassed counselors from varying experiences, including some who have been classroom teachers, some who have been administrators, some with professional education experience outside of school counseling. In studying the impact of technology with some historical perspective, the study was limited to counselors with a minimum of 15 years of

experience in education. It was difficult to obtain high numbers of participants with that criteria in place, so there were no further limitations set for sample criteria.

**Limitations to the participant sample.** A primary limitation to the participant sample was that the target sample limited and exclude many counselors from participation, as the majority of school counselors do not have the career lifespan in education sought through the study. There is not accessible literature to draw from regarding the professional lifespan of a school counselor, however if U.S. News and World Report is to be taken for its reporting, the profession of school counselor has a higher than average stress level and lower than average upward mobility, which would both be indicators of a career with little promise for tenure (U.S. News and World Report, 2014; Bureau of Labor Statistics, 2014), and subsequently providing a potentially low target population to draw from in completing this study.

A secondary limitation was created by the method of access to school counselors facilitated by the administration of the Department of Public Instruction, which could be best described as third-party, indirect contact. That created several layers through which the researcher had to solicit and review participants. The researcher was required to:

- a) Collect email addresses of school principals through the public online directory;
- b) Request for the study information to be passed forward to the counselors by the school principal;
- c) Wait for response and conduct any follow-up directly with any school counselors who responded with interest in participating.

This may have severely hampered the participation of other counselors, considering that the researcher now receives frequent requests by email to participate in doctoral studies that appear to be facilitated through that same administrative conduit.

## **Philosophy**

School counseling was born of technology being implemented in society, and subsequently introduced into our schools. With the growing introduction of technology specifically into the counseling setting, the evolving nature of technology in our schools, and a requirement of schools to produce 21<sup>st</sup> century learners who are equipped with tools to succeed in modern times, it has become vital that school counselors have a working knowledge of technology on different levels to be able to assist students, parents, administrators and the general community to reach goals in a more efficient, more productive, thorough and widespread manner. Many counselors still think it is important in the face of efficiency and productivity to keep the human beings in mind, and keep those relationships in the forefront of school counseling.

## **Ontology**

School counselors cannot choose technology. It is a component of our culture and our life in the United States. It affects students, thereby affecting the work that school counselors conduct because they work with students. The issues that our students face in our communities are frequently brought into the schools with them, and school counselors in school counseling programs are faced with two choices: 1) ignore the implications of technology on the students, parents, school and the community, focusing on traditional

school counseling practices, or 2) recognize that the culture and global community is having impact on the way young people grow up, communicate, advance in school, and move forward toward their adult lives in an ever changing world. As agents of advocacy and of change, it seems counterproductive for school counselors to limit themselves by ignoring the changing world around them, and the students and communities they serve.

## **Epistemology**

The study of technology travels back thousands of years in our movements and migrations throughout the world. The study of school counseling extends back to the era of the Industrial Revolution, for which the implementation of school counselors, individuals tasked with introducing students to new roles in the workplace was a response. Both the study of technology and the study of school counseling have in common that the progression of humans has effectively put them in play. As a critical component of a modern era, technology holds sway over most everything we do and the manner by which we conduct our lives.

If school counselors are to remain relevant to current educational processes, to schools in general, and to societal changes that are affecting lives, families, careers and communities, it is important to examine technology in school counseling, how it is being utilized, how it has traditionally been utilized, and to look forward and make plans for where the future lies. To that extent, the epistemological approach to this study is interpretive / constructivist (Merriam, 2014, pp. 35, 207-208; 242), with a critical lining to it; the objective of the study is to understand the history of technology's impact in changing the work of the school counselor, which is intended to uncover also how that technology has been implemented and collect recommendations from the participants as to how technology

implementation down the road can be improved and work to make the two worlds more harmonious.

## **Qualitative Methods**

### **Individual interviews.**

The benefits of individual interviews in this study include (a) the ability to elicit from seasoned school counselors information related to their own experiences of how technology has changed their work in school counseling over a durable period of time, (b) the opportunity to obtain perspective from school counselors in varied settings, both in terms of educational grade levels served, and of urban and rural demographics and (c) interaction that allowed for further exploration when a particular discussion point did not appear to be fully explored. “Qualitative inquiry, which focuses on meaning in context, requires a data collection instrument that is sensitive to underlying meaning when gathering and interpreting data. Humans are best suited for this task...” (Merriam, 2014, p. 2).

The largest drawback to the individual interviews was the amount of time spent to collect information for the individual interview. A secondary drawback was the need for synchronous scheduling of the participant, whether face-to-face or by telecommunication device. Cost was not prohibitive for these individual interviews. Since “...the researcher was the primary instrument for data collection and analysis” (Merriam, 2014, p. 212), the individual researcher then had to be able to coordinate all of these efforts among the constraints of the researcher’s life, in conjunction with the constraints of all the participants’ lives.

## **Data Sources**

The data sources will be the interviews and the stories of the school counselors themselves. Through the interviews the researcher will obtain rich data to saturate and give an accurate picture of the areas of technology that are actively affecting and changing the practice of school counselors. Other sources of data consist of published media including but not limited to: scholarly journal articles, podcasts, academic presentations, printed periodicals and online publications, foundation reports and oversight organization reports.

## **Data Collection**

Participants were solicited through mechanisms available via the North Carolina Department of Public Instruction. In preliminary discussion with the NCDPI Student Services liaison, the researcher had been informed that requests for participation had to first be sent to school principals and passed forward to school counselors. The researcher needed to collect the contact information of school principals through the publicly available directory on the NCDPI website, and emailed the request for participation to the principals. The researcher then communicated with school counselors as they responded directly to the researcher regarding the request for participation. The school counselors were provided with the protocol and consent in Appendix A.

Interviews were coordinated with school counselors who met the criteria, a portion in face to face interviews which were videorecorded, and a portion that were conducted by telephone. While attempts were made to conduct the interviews by videoconference, all of the study participants either reported not having access to or not knowing how to use

videoconferencing through their school or district. That limit of access ran from a lack of resource to the inability to use the district network for videoconferencing. Ultimately, interviews were conducted in a FTF manner and videorecorded, or were conducted by telephone and recorded.

## **Data Analysis**

The researcher listened to each of the interviews recorded on audio, and watched through the video interviews to record salient points regarding the interview questions. The results were placed in a matrix to consider overlapping answers, to determine overarching themes, and to look for commonality and disparity among the counselors. To that end, organizing the data for comparative analysis and in-depth study was necessary. A coding scheme was developed in which responses could be compared and contrasted, and allowed for reflexive action (follow up) with participants to clarify any ambiguous responses in order to best attribute responses to the appropriate coding, with attention to the following caution from experts: “Reliance on coding isolated responses strips any remaining context from these responses...” (Holloway, et. al, 2013, pp. 8-26)

Several interviews of this nature were also utilized from an additional study, and all interviews were reviewed in the same fashion. While reviewing the video and audio interviews, transcripts were created and the participants’ answers were fully entered into a spreadsheet matrix, then reviewed again to ensure complete and accurate data have been recorded.

The responses were coded, and an initial coding scheme was developed. The coding scheme was revised and expanded through the data analysis, and the coding scheme was

evaluated on an ongoing basis. The research questions have guided and shaped the analysis, with the epistemology and ontology providing both background and reference for evaluation.

Responses were also considered for their connection to the three technology competencies that exist within the framework of the American School Counselors Association National Model for School Counseling (mentioned previously on p. 34).

### **Credibility**

Prior to enlistment for the study, each participant was provided with the email originally sent to the school principal, identifying the researcher, the researcher's background, and the purpose of the study. Potential participants then had the opportunity to ask questions or to clarify any other concerns. Once confirmed that the participant was eligible for the study, the participant was provided with the study protocol and consent document, and again asked to contact the researcher with any clarification necessary before proceeding with the interview. In this regard, the researcher developed a rapport with the participants that will last over a series of several months, although cursory in its contacts.

Triangulation was sought through the use of multiple sources of data, including literature review, audio interviews, video interviews, and member checking. The open ended nature of the questions and the interviews was able to remove concern for progressive subjectivity checks, as the purpose was to uncover what others have observed, not what the researcher had observed about the process or about the participants over time. The nature of the questioning did not leave much possibility for interpretation of the participants' answers, confirming the emic nature of the final outcome, as opposed to the etic or subjective nature of the researcher's single, limited perspective. There could be some discussion that the etic

nature of the protocol focused on technology and specifically addresses only technology without regard for other forces that have had effect on the profession, therefore the perspective is imposed by the researcher that technology has changed the profession, and that it is a foregone conclusion.

### **Transferability**

The answers to the interview questions are from counselors who serve or have served across the K-12 spectrum, and from a range of backgrounds and areas in which they serve. The range of backgrounds, the array of areas of service provision and the longevity of the counselors to interview gave the researcher confidence that the responses are generalizable for use across the spectrum of K-12 school counselors.

### **Dependability**

Participants were selected to participate based on several limiting factors. Participants were required to have at least 15 years of experience in education for the purpose of being able to provide a historical overview of how technology has been implemented and has effected change in the school setting. Participants were required to have been or be actively working as a school counselor. Finally, participants had to be willing to participate, and that ultimately came through invitation forwarded by their school principals. The same protocol was utilized to conduct each interview in all forms (audio, video or face-to-face).

## **Confirmability**

Throughout the responses and literature review, themes and at times direct answers were confirmed regarding the changes, affordances and difficulties that technology bears on the daily operations and work-related tasks of school counselors, as well as meeting the expectations of students, parents, teachers, school administrators and other community members with technology in play.

## **Ethical Considerations**

Opponents of qualitative research often express concern about its less rigid nature and more broad approach to eliciting and uncovering information, which can also pose questions of ethics. “Qualitative enquiry raises distinctive ethical issues because, as already indicated, it generally involves emergent and flexible research designs and usually entails collecting relatively unstructured data in naturalistic settings.” (Leavy, 2014, p. 68) The methods and mechanisms involved in this study were focused on improving the way in which school counselors can conduct the practice of counseling in schools. There is no harmful element to the participants nor their schools within the research or the methods by which the research is conducted.

School counselors value confidentiality as a part of their work. During the pilot study, several of the interviewees had concerns about the recorded nature of the interviews. A few of the counselors identified a lack of support on the part of their building administrators as reason for difficulty in implementing technology, and did not want their expression of that lack of support to be viewed as a lack of commitment to their school team. A few also

expressed concern about a lack of support at higher levels, both in terms of professional development and lacking financial backing to implement technology.

The researcher's goal has been that all participants were well informed about the purpose of the study, the rationale behind the study, and the manner by which the study is conducted. Any questions about the use of the results will be answered directly by the researcher. That should assist in establishing a rapport with the participants, and a continued dialogue about the nature and focal point of the study. Likewise, that conversation should assist in underlining the limited nature about the intrusiveness of the study in the participants work. All interviews will be conducted with appropriate standards in place, and with careful consideration given to allowing the participant to fully and completely express his or her viewpoint and perspective. Careful consideration will be given to the veracity of the statements in the study, and the application of overarching themes to the fidelity of the participants' responses.

### **Profiles of Study Participants**

In this study, 13 participants were identified as meeting the criteria for participation. Consistent with the varying levels of gender participation in the profession, only one male is represented in this study. "Among school counselors, women outnumber men by a considerable margin. More than three-quarters (77 percent) of counselors are women." (CACRAO, 2011) Even fewer of the males in school counseling remain in this role for an extended period of time.

Andrea is currently a secondary level counselor, with ten years of middle school teaching experience, 11 years of middle school counseling experience and six years of high

school counseling experience. Her cumulative experience in education overall totals 27 years. She has worked and lived in several states, including Florida and North Carolina.

Elaine started her education career in another state as a volunteer teacher in a non-academic area, who then became interested in fully becoming a licensed teacher. C.C. then taught in the district for the following 12 years, then becoming a school counselor, in that same district. A few years later, Elaine moved to North Carolina, and obtained the position she has currently held for 15 years. Elaine has a cumulative total of 32 years of overall experience in education.

Bridget has taught at both the high school and college levels in three states. She has worked as a school counselor, and has additionally served as a Dean of Students in two different high schools, Pupil Personnel Director and as District Testing Coordinator. Her cumulative time in education has spanned 36 years, and she currently serves as a Dean of Students.

Wendy currently serves as an SAP (Student Assistance Program) Coordinator, and has for five years. She started her career as a Math aide, and during her career, she has been an academic counselor in two North Carolina counties, as well as fulfilled the duties of Alternative School Counselor, and Community College Admissions Counselor. Wendy's total career in education has spanned just over 41 years.

Charles currently serves in an administrative capacity at a district level. After obtaining his Bachelor's degree, Charles taught for ten years in another state, and then took a role as a counselor in a placement program for non-traditional students. Following that work, Charles became a counselor, and subsequently a Dean of Students for 19 years. Charles has served in education for 31 years.

Teri has served parents, students, administrators and teachers for 39 years, starting her career as a middle school Math teacher, helping institute ISS (in-school suspension) programs in an effort to reduce the rate of external student suspension and expulsion, acted in capacities of both secondary school counselor and Dean of Students, and also spent time as a district level administrator.

Tonya has served 16 years in Education, starting out as a long-term substitute in Special Education, moving forward to a position as a Special Education teacher in grade 8 for an additional two years. For four years, she served as an Academic Intervention Teacher for grades 6-8, and for three years as a School to Work Coordinator for high school. She has served specifically as a school counselor for four years.

Monica started as a 4<sup>th</sup> grade teacher, and taught for three years. Monica then became an elementary school counselor in 1994 and continued working as an elementary counselor for 11 years. She worked for one year at an alternative middle school, and then accepted a position as a middle school counselor, where she has been working eight years.

Heather has been in education for 31 years, first spending seven years in the classroom as a Spanish teacher in Georgia. She made the shift to counseling, and has served as a high school counselor for 24 years. For the first two years, she worked at the same school where she had taught Spanish, and then her family moved back to North Carolina (Heather is originally from this state), where she has been a high school counselor since.

Angela has served for 34 years in the same capacity, as a high school counselor in the same building, serving the same function. She noted that while there have been functions that have shifted, her title, position and general responsibilities have remained the same.

Ginny started her career as a Teacher’s Assistant (TA) in New York, then began to teach Fourth grade, also in New York. Moving due to her husband’s employment, she accepted a position to teach Kindergarten in Kansas. Ginny obtained her Master’s degree, and began working in the Department of Defense schools in Germany as a school counselor. Moving back to the United States, Ginny found employment for two years as school social worker, and has since worked as an elementary school counselor in North Carolina.

Glenda is in her 20<sup>th</sup> year as a school counselor, all at the high school level. She has served in two schools, the first for 11 years, and the second for nine, but both within the same county.

Haley began her career as a 5<sup>th</sup> grade teacher. During her time as a teacher, Haley had the opportunity to participate in a cohort program with a local (regional) university, and acquired her Master’s degree. She acquired a position within her same school as a school counselor, and has now occupied that position for 15 years.

Table 3

*Statistics of Study Participants*

Participant	County	Gender	Ethnicity	Age Range	Years in Ed.
Andrea	Wake	F	Caucasian	60+	27
Elaine	Wake	F	Black	60+	32
Bridget	Wake	F	Caucasian	60+	36
Wendy	Wake	F	Caucasian	60+	41
Charles	Wake	M	Caucasian	50-60	31
Teri	Wake	F	Caucasian	60+	39
Tonya	Cleveland	F	Caucasian	40-50	16
Monica	Orange	F	Caucasian	40-50	23
Heather	Guilford	F	Caucasian	40-50	31
Angela	Franklin	F	Caucasian	50-60	34
Ginny	Catawba	F	Caucasian	40-50	23
Glenda	Guilford	F	Black	50-60	20
Haley	New Hanover	F	Caucasian	30-40	17

## **Profiles of the Counties of Study Participants**

The demographics of counties is a no consideration when dealing with a subject like technology, because as ubiquitous as technology is becoming in our society, it is still important to remember that some counties have a deeper, wider resource pool than others. A complete narrative detailing the demographics of the counties of the participants is available in Appendix F.

It takes dollars to fund technology implementation, and subsequently those who have worked in North Carolina counties with higher economic values are more likely to have access to more recent technology innovations, with the exception of instances where administrators have a focus on upgrading and maintaining recent technology practices in classrooms and related to overall professional development. In the interviews, some of those economic differences become evident regarding the varying levels of technology implementation in counseling. County population demographics are reviewed in Tables 4 (p. 96), 5 (p. 97) and 6 (p.98) below:

Table 4

*County population demographics by race*

County	2010 Pop	Hispanic/Latino	Multiracial	Pacific Islander	Asian	Native Am	Black	White	Other
Catawba	154810	9.40%	1.14%	0.05%	3.10%	0.03%	8.50%	87.10%	Unr
Cleveland	98078	3%	0.68%	0.01%	0.69%	0.15%	21%	74%	Unr
Franklin	60619	7.90%	1.80%	0%	0.50%	0.50%	26.70%	66%	Unr
Guilford	500879	3.80%	1.45%	0.03%	2.44%	0.46%	29.27%	64.53%	1.81%
New Hanover	202667	2.04%	1.05%	0.06%	0.83%	0.39%	16.97%	79.91%	0.79%
Orange	133801	8.20%	2.50%	0%	6.70%	0.40%	11.90%	74.40%	4%
Wake	900993	5.41%	1.64%	0.03%	3.38%	0.34%	19.72%	72.40%	2.48%

Table 5

*County population demographics by household*

County	Households w children under 18	Married	Single female head of household	Non-family household	Single Individual	65 years or older in household	Average household size	Average family size
Catawba	31.50%	55.10%	10.90%	29.60%	24.60%	9.10%	2.51	2.98
Cleveland	32.20%	55%	13.70%	27.10%	23.60%	9.60%	2.53	2.98
Franklin	30.20%	52.30%	13.40%	29.10%	24.20%	8.80%	2.56	3.04
Guilford	30.40%	48%	13.40%	34.90%	27.90%	8.30%	2.41	2.96
New Hanover	26.10%	46.50%	11.50%	39%	28.90%	8.50%	2.24	2.94
Orange	28.30%	44.60%	9.40%	43%	28.10%	6.10%	2.36	2.95
Wake	34%	52.50%	9.80%	34.40%	25.70%	5.10%	2.51	3.06

Table 6

*County population demographics by age*

County	<18	18-24	25-44	45-64	65<
Catawba	24.30%	8.80%	31.10%	23.50%	12.30%
Cleveland	25.20%	8.80%	28.80%	23.70%	13.50%
Franklin	27.30%	5.50%	26.20%	28.50%	12.60%
Guilford	23.70%	11%	31.40%	22.10%	11.80%
New					
Hanover	21%	12%	30.50%	23.70%	12.80%
Orange	20.30%	21%	29.90%	20.40%	8.40%
Wake	25.10%	10.70%	36.50%	20.40%	7.40%

## **Chapter Four: Results**

Chapter Four contains the outcome of the study, and the answers to the interview questions will be reported. Discussion of the participants will be reviewed and summarized, and key themes from the interviews will be addressed. Tables will also provide a synopsis of the key themes elicited from the participants. The categories addressed in the results are:

- (1) The evolution of technology in school counseling;
- (2) How technology has changed the work of school counseling;
- (3) Positive impacts of technology on school counseling
- (4) Negative impacts of technology on school counseling
- (5) Recommendations from participants on moving forward with technology and school counseling.

Within each of these areas, the interviews were analyzed to establish the key themes of the participants. Progressing through this chapter, the key themes will be supported with excerpts from the participants.

### **Conducting the Study**

Education professionals, 13 in total, were interviewed regarding their experiences over the course and duration of their careers with regard to the ways that technology has been integrated into school counseling, and the effects that the integration of technology has had on the profession, relative to the actual work performed, as well as the external changes these educational professionals have seen taking place in our communities, thereby affecting our

schools. The interviews lasted anywhere from 38 minutes to 81 minutes. Some were conducted in face-to-face settings, and recorded by use of a flip cam, a small portable video camera.

Ultimately due to lack of resources or familiarity with particular technology, most interviews were conducted by means of telephone.

### **The Evolution Of Technology In School Counseling**

With this question, participants were asked to think back upon their collective histories in educational settings with respect to the technologies that were introduced along the way. The goal of this question was to prime the participant to not only think about the technologies introduced, but also to stir a nostalgic sense of how those technologies shaped and directed their current practice of school counseling.

Andrea recalled a time when any original documents were created by hand, without the benefit of preset margins, optional typefaces and automatic spacing. If one wanted to use current images for relevance, one had to physically cut and paste periodicals and newspapers. The mimeograph machine was a primary method for creating replicas of documents in order to distribute a worksheet or page of information.

Andrea remembered the use of overhead projectors and transparencies in order to allow for classroom viewing of material. She stated that she was really excited about acquiring a typewriter with a three line digital input, which could be checked for accuracy prior to typing. It was a huge step up when ditto machines came into play, and then copiers made replication that much faster and easier.

Cards and labels were used for graduation recordkeeping, and Andrea recalled an annual contest, the winner of which was the counselor who miscounted the least. In other words, it was expected that there were going to be errors with graduation requirements, and it was simply a matter of who could reduce that number the most. Additionally, Andrea expressed that lcd (liquid crystal display) projectors were a huge change to her and to education overall.

Elaine began using technology when it was tremendously more cumbersome and less processing-powerful than it is today. Her first experience in any type of technology and data-crunching was utilizing cards to read data, using huge machines in order to process information and calculate the results. She remembers at one time having access to, but not tremendous training in the use of a Commodore 64 computer. The binary programming language required to use the computer was not part of the training, so any utility of the machine was self-motivated and self-taught. She has seen several versions of student scheduling and record keeping, including filed notecards, manual manipulation of class loads (which typically involved students being put in the middle of a push-and-pull relationship between teachers and school counselors) and the adoption of desktop computers, then laptops, then tablets into school counseling.

Bridget remembered utilizing a Smith-corona non-electric typewriter with no correction tape in writing memos, recommendations and student-focused documents. During her counseling program, she was required to take an electrical engineering course in order to learn the guts and inner workings of computers. While working with early computers, Bridget recalled using large eight-inch floppy disks. Early on, any computing that needed to be done required card data input in order to run even what are considered to now be relatively simple calculations and reports

In 1989, Bridget stated that there was no computer in the counseling office, and additionally no printer. At that time, grade-point averages and class rank were calculated by hand, shockingly, if two students were tied for a rank with the same GPA, then they were ordered alphabetically and the student first in alpha order received the higher class ranking. As technology and computers progressed, student databases came into play, creating a more streamlined and efficient way to access student information, which for Bridget came in the forms of SIMS (Student Information Management System), NCWise (the current State of North Carolina student information database) and SAM / SPAN, a Wake County Schools generated database that provided teachers, students and parents a portal for viewing certain types of student information. Bridget mentioned that all of these worked in concert to considerably shorten the time required to accomplish tasks, such as pulling up reports, evaluating transcripts, and assessing student progress.

Bridget also spoke about the evolution of email as both a curse and a blessing. In one sense, e-mail allowed for faster and more efficient return of information to students, parents, teachers and administrators. However, e-mail has also created an expectation of expedited response, sometimes blurring the boundaries of work and personal time. Bridget additionally spoke to the proliferation of portable data storage (flash drives) which also helps counselors muddy the waters of personal and work time, since the data are accessible wherever you are, so long as you have your flash drive. Video data were discussed as an opportunity to record a presentation, and allow the entire community to access the presentation, thereby allowing a larger audience to participate in the communication process.

Wendy remembers the use of electric typewriters and whiteout in document creation, eventually graduating to a "portable" electric typewriter. Large, wall-sized computers were used for any calculations that needed to be done. There were no office computers in her rural school, and a student created their first student information database program, which was also able to calculate a grade point average. At that time, there was no printer, and eventually the general office area obtained a dot-matrix printer. She recalled another development - competing computer systems. At one time, both Apple and IBM products were in the office, one of which was used for one type of process and one for another, so in order to be proficient, one needed to know how to manipulate both machines.

The telephone system at the time was a manual operation phone, with a call coming into the main line, which fed into all the counselors' offices. In order for the counselor to take the incoming call, he or she had to be apprised of the call by the receptionist, and then had to plug in a phone line in order to tap into the main line, also compromising anything that might have been considered confidential. There was constant travel to a primary office printer to retrieve documents, if they even printed. Wendy views e-mail as both a blessing and a curse, allowing for fast retrieval of information and quick communication, but the expectation of response on the part of parents and students is more immediate. She mentioned that teachers and administrators do not seem to possess the same expectation, assuming that because they work in the same environment, they are more sympathetic to the response time.

Charles, who also possesses an overall knowledge of the available technology tools throughout both the district and the state, began the interview with current technology and worked backwards. He began reviewing with college applications having recently been made

much more available online, additionally noting the virtual school tours that many schools make available. Charles noted that group multimedia presentations were much easier to conduct now than in his beginning years, as today's students can remain in their homerooms while viewing a presentation, or if necessary to hold a large group, the equipment is definitely more portable and easier to operate, whereas several years back, it was necessary to have a much larger projector for film, or an overhead projector with acetate sheets of the presentation to flip through. In an age of self-publishing, the same presentation can be created at a source, say a laptop computer, shared from that same source, distributed via that same source. Self-publishing has made that level of sharing possible. He also noted that the College Foundation of North Carolina website, CFNC.org, makes it possible for a student to complete an interest inventory at school or at home and store the results, which include instant feedback. That portability allows potential participation on the part of all invested parties (students, parents, counselors, teachers, etc.) It was also discussed that web-based sharing tools that provide standards and frameworks for model counseling programs are of tremendous benefit for driving and improving school counseling programs. The discussion ranged from economic advances, such as affording students unlimited free transcripts for in-state colleges and universities (different from previous years paying for in-state transcripts) to the use of specific multimedia technology like overhead projectors, bulletin boards for marketing programming.

Charles also spoke about the benefits of simply having a telephone in the office. She stated that her ability to self-publish materials was crucial, advancing from using the typewriter each time a new document or even a new version of each document was required, to utilizing

websites and Learning Management Systems, such as Blackboard for the benefit of sharing information in a more widespread way.

Teri remembers a time when she needed to use a slide rule in order to conduct calculations for GPA and class ranking. At that time, any programming and functionality with a computer was completed with cards that contained the data to be computed, and changes in that data required a new set of cards. Teri remembers the advent of videotape observations as a better way of seeing what might truly be taking place in a counseling session, for better feedback to the counselor in the session, providing better and more opportunity for peer review. When carbon copies became more readily available better, more consistent information could be communicated to all concerned parties in a more timely manner. With the advent of ditto machines, communication became much more efficient and could be expedited in helping students. Arriving at a more current state, Teri discussed how Advanced Placement registration coming online was an incredible help, and no longer made AP registration an unwieldy albatross.

Tonya remembers using the Student Information Management System (SIMS), and an application called techtrek (where educators make an application for use), and early technology for her revolved around a palm pilot for maintaining an electronic schedule. She recalls receiving her first laptop, but with no internet or wi-fi access. She stated that wifi has certainly allowed for better utilization of laptops and email. She feels that tech has increased the school counselor's workload because it was portable, and so the expectation became higher in terms of speed of response. She also stated that schools can't keep up with tech changes, change in smartphones and the rapid changes taking place.

When Monica began her teaching career, she did not have a computer available in her classroom, but would take her class to the computer lab about once a week for the first two years. She remembers that the focus was educational games, loaded onto a disk or on the computer. At that time, the internet was not an option. She completed grade reporting in a grade book and her students' report cards were hand written (carbon copy). When she began working at a magnet elementary school, she was fortunate enough to have access to a computer, and subsequently email access using Eudora (she thinks that is the access program).

When Heather began her career in education as a teacher, she was provided an Apple IIC in order to work on the yearbook. When she took a position as a counselor, the office technology consisted of an office typewriter and a rotary phone. She pointed out that at this time, scheduling and testing were manual, with access to a mimeograph machine for classroom handouts. When Heather moved to North Carolina, she had to bring her personal typewriter into the office. The Student Information Management System (SIMS) was accessible through a single computer, only through the data manager. Any report of test scores required a manual review for exemptions. The counselor had no access to a printer, but would instead use the typewriter to print a report. Manual reporting was often done to record testing and achievement scores by accessing each student's physical cumulative file and marking the score, whether by indicating a number or by stamping a card to indicate passing scores. When she needed to scan documents, she had to travel to the central district office, retrieve a scanner, use at the school, then return it to the central office.

Heather reported that soon after, the phone system was updated, providing individual lines for counselors. She estimated that three (3) years later, the counseling department obtained

a fax machine. Sometime in the mid-90s, the department members were provided their own desktop computers, but noted that even until a few years ago, the typewriter had to be used for certain purposes, such as National Merit applications.

Items of recent technology implementation that Heather took special note of included: online applications, email, text notifications, reduced postal mailings, CFNC, electronic transcripts, laptops (no tablets as of yet), and expressed her frustration that Student Services is not considered a top priority for the technology-focused administrators of her school district.

In her recollection of technology implementation in the counseling departments over her career, Angela remembered using mimeograph machines to make handouts for students, parents and teachers. She talked about the use and difficulty of obtaining and at times troubleshooting filmstrip and 16mm projectors. Angela indicated the use of student databases such as SIMS, NCWise, and Powerschool as important technology tools that have been implemented. Another tool that Angela stated is important to her work is email, specifically to create student or parent contact lists. She noted that the ability to download information that is current and relevant has become more and more important in her work. She pointed out that by the time reached her, things that were published were out of date or nearly irrelevant, but that pulling a current source for information gave her more professional credibility with students, parents and teachers.

Ginny reports having started with blackboards and chalk, writing copiously on the chalkboard, and using ditto machines. The progression included copy machines and the thankful end to the smell of duplicating fluid to a mobile cart carrying 30 laptops. Ginny can now plug her laptop computer into a SmartBoard, and guide students to a website activity, where they can each

work on an interactive unit, tailoring to each student. She indicates that she no longer uses worksheets, paper and pencil to deliver classroom guidance lessons.

She indicated that the real push for technology in her district started three to four years ago when classrooms were outfitted with smartboard technology, which she states changes the way she conducts both individual and classroom guidance. She has worked with her colleagues to adapt lessons to the Smartboard so that students could participate more. She indicated that the Smartboard in conjunction with internet access to information of various types have replaced DVDs and other traditional sources for showing media to students.

Ginny indicated that iPads have become prevalent in her school, but expressed frustration that they are being directed toward every other area in the school except the counseling office. Ginny also indicated that the teachers are expressing concern about their inability to download applications for the iPad due to the district constraints on software downloads. She also expressed concern that funding is not allowed to be spent on certain things, such as technology, relegating those funds to disposable items like workbooks, but not digital cameras or printers for the counseling office. She spoke briefly about the expectation that staff members, teachers and counselors alike are now expected to have websites.

When Glenda began working as a school counselor, there was not a computer in her office. Her primary word processing tool was a typewriter, on which she remembers completing all forms, and creating school wide memos. Memos, however could not be easily disseminated to the faculty, so Glenda would need to duplicate those memos on a mimeograph machine. When the computer was introduced to the counseling office, the ability to communicate quickly and efficiently with the faculty was a tremendous change in the work.

Haley indicated that the overriding technology of her early years was the overhead projector, which carried with it the need to make and maintain overlays that would support the material being delivered. She recalled that there were video discs that would occasionally be used for classes, and a device called an averkey, a device which would allow for input from a computer or laptop for transmission to a television monitor. When teaching, Haley had one computer in her classroom, which was designated solely for the teacher, and its primary service to her was email. She recalls as a counselor using VHS cassettes for program delivery, DVDs. Haley reported that her biggest curve in technology has taken place over the last two years, with the utilization of her own personal iPad.

Haley also indicated that the proliferation of various applications has helped her tremendously. She actively uses voicethread with students in small groups to record their stories and sharing. She engages the students in creation of videos using the iPad to solve different problems and demonstrate to each other ideal ways to handle scenarios. Being able to share plans and lessons with other professionals through online sharing and particularly through Google Apps (specifically Google Hangouts) and in turn being able to share with her school community members through sites like LiveBinder was of high importance to Haley. She also mentioned using Prezi, a different presentation modality than the traditional Powerpoint, that she indicated was more in line with the way students are learning currently.

### **How Technology Has Changed The Work**

The participants were asked how the work of school counseling and the functions of school counselors have changed as technology has been integrated in the work over their time in

the profession. The participants addressed 32 ways in which their own work as school counselors and education professionals has been changed. Items mentioned among the interviews dealt with the expanse of data storage now available, the ability to analyze data quickly and efficiently, email as a means to quickly obtain information and communicate with stakeholders, the benefits of a portable LCD projector, having access to school and district policies, procedures and processes when necessary, and that parents, students and teachers had more access to school counselors through technology tools. The five primary themes that appeared within those interviews are reported in Table 7, p. 108 (below):

Table 7

*How technology has changed the work of school counseling*

How technology has changed the work	#
Data collection	9
More / better productivity	8
Saving time / efficiency	8
Current / relevant info	7
Mobility / portability	7
Wide efficient distribution of info	7

A more comprehensive table containing all results can be located in Table 11 on page 203.

**Data Collection.** Data collection was the strongest theme related to changes in the work of the school counselor and the range of ways it was used. Data collection was discussed among a variety of situations, from being able to solicit information from various stakeholders for different reasons (i.e. teachers for updates on student progress and behavior via email, parents for information on the general needs of students related to guidance services and schoolwide

programming) to the availability of instant reports on grades to available programming at various postsecondary schools for a given career.

Bridget: “All my documents are filed on my computer. I use the web to search resources, I communicate daily with staff, parents and outside agencies via email and scheduling is done on the computer. I can access a lot of student data and contact information using SPAN, EVAAS, EASi, NCW, etc. Academic conferences with students are much better since I can pull up specific classes and discuss progress with students.”

Haley: “There is one I really want to get, and it’s an apt, and it’s a way to collect data on the iPad, and they just hit their answer in it, comes to your iPad, and you can use the data really quickly right there. So I think using the iPad to collect data quickly will be around a while.”

**More / better productivity.** More / better productivity had both positive and negative responses, citing that there was clearly more being done and expected of the school counselor with the use and implementation of technology, but also with concern that the clear boundary counselors are encouraged to maintain is becoming more and more blurred, a reflection of the same practices of our technology-rich communities, where employees are more and more available for work purposes through their technology.

**Access to current / relevant information.** Having access to current and relevant information was very highly regarded by the responding participants, citing that previous information commonly made available was often outdated by the time materials were printed, and that spanned the domains of the ASCA National Model. Examples expressed were the ability of the school counselor to present parents and students with current career information and the ability of the school counselor to review changing requirements in processes of all types.

**Mobility / portability of technology tools.** When addressing the issue of mobility and portability, counselors responded that they were better able to address questions on the go and in nontraditional settings for counselors. They also responded that their ability to provide information in different locations was enhanced by technology because the technology is both more pervasive in classrooms and less cumbersome in instances where equipment needs to be transported to the presentation site.

**Widespread, efficient distribution of information.** Email, webpages, social media and external access to student information such as grades and attendance were all addressed as contributing to widespread, efficient distribution of information, having changed the work and the expectations of school counselors. While generally leaning in positive directions, the expectations of response times to questions were discussed and concerns over the heightened expectations of administrative, faculty and parent response were brought to the forefront.

### **Technology With Most Positive Impact To School Counseling**

The participants were asked to identify one area of technology they determined provided the most positive impact on the school counseling profession. The technology was not limited to hardware or software in the office, but could be any level of technology available and implemented. Many of the interviewees were unwilling to commit to only one response.

There were three key themes that became evident, listed in Table 8, p. 113 (below):

Table 8

*Technology with most positive impact to school counseling*

Positive Impact	#
Communication	4
Global access to information	3
Portability of technology tools	3

A comprehensive listing of positive impacts counselors addressed can be located in Table 12 on p. 205.

**Communication.** Communication was a very significant theme. As counselors, being able to communicate and connect, to both establish rapport and efficiently and effectively deliver timely and pertinent information was considered a tremendously positive impact. A portion of that is the benefit of being able to relay a substantial amount of information via a web page or through email and point consumers of the information to that source instead of having to repeatedly relay that volume of information. The manner in which communication has made positive impacts on school counseling

Angela: “And then the other thing, or another way that I have tried to use technology is that for each class let’s say your 2013, 2014 I would put together a student email contact list and a parent email contact list. With the students I can pretty much get the majority of them because they’re here. Parents that sort of hit and miss because it depends on whether the parent comes to school, whether we have a program. Like we still have morning announcements, so I put the upcoming scholarships on the morning announcements, then I forward it to both of those email groups, so they’ve got to go out of their way if they don’t want to find something. But things like that make it a lot easier to disseminate information.”

Haley: “The other thing I’m really loving right now is the livebinder. That’s been really helpful for me, because I have so much stuff, and I’m overall of files and it’s just and really easy way to categorize everything and put them into neat little piles and be able to tell people will go to live binder and check this out. I know our schools have gone to live binder which is where I first saw it, and then I created one for our County. Once you get people to go to it, it’s just such a much easier way to share information. Post that lesson plan on there and we all have it. So I think that’s can be around for a while, more community-based sharing, cloud sharing.”

Heather: “Yes. Not only to the time involved, but the length of time the quickness with which you can respond to a request or send something by email, that has really helped I think to keep up with the volume because our volume has increased. We are 86% attending a two or four-year institution, so that still a sizable amount of paperwork that is been greatly reduced because of the technology.”

Tonya: “If I follow different people for different organizations and it goes through the twitter feed and read those articles and go through I really can expand what I understand, and that’s been a real help me and then I do go ahead if it’s really good article something it’s applicable to the high school level or stuff I’m interested I go ahead tweak that out.”

**Global access to information.** Being able to reach out around the world from the convenience of a desktop, laptop, tablet or smartphone to obtain information that helps inform decisions for students, parents and school personnel has substantially changed the way that school counselors help students. Where previously the counselor might have to be intimately

familiar with certain expensive printed materials, current, relevant information is now available online and at the push of a few buttons.

Tonya: “But the technology has just opened the door for all kinds of options, and then access to information. I’m a Google queen, and if I have a kid seriously needs some information I could just find it. And we never had them before. The only thing that’s bad about it is that there’s a lot of services like CFN see or big futures with college board that are so dependent on the Internet that if the student doesn’t have access, I’ve got a get the material to student. And so many people you get this blank look when you say it’s on the Internet. You can’t just say it’s on the Internet, but that sometimes what we do. Because they are just afraid and totally lost. I do the FAFSA form here, and I bring parents in to actually start them on the computer and it’s just amazing how lost they are. But to me the access to the information, there’s no excuse for not getting information anymore. And so that’s been the greatest thing for me, because it gives me more to give to the kids.”

Angela: “I think one is just the whole access to Internet and information. Just that anybody, anywhere, anytime you can get to information. You don’t need me, you’ve got to have some assertiveness, you can find out anything you want to find on the Internet. And I think that that has just changed everything in every sort of aspect of almost everybody’s life. Not just school counseling.”

Glenda: “Especially over the past few years with the budget situation we have dealt with, I pay out-of-pocket for any professional development like the school counselors conference, there’s no funding for. And fortunately I live in proximity to the conference, but there is no

money or anything if I had to stay overnight, so if there is a webinar that will save me money out of my own pocket...”

Heather: “But to me the access to the information, there’s no excuse for not getting information anymore. And so that’s been the greatest thing for me, because it gives me more to give to the kids.”

Teri: “Well it really is sort of the two-pronged thing. I think one is just the whole access to Internet and information. Just that anybody, anywhere, anytime you can get to information. You don’t need me, you’ve got to have some assertiveness, you can find out anything you want to find on the Internet. And I think that that has just changed everything in every sort of aspect of almost everybody’s life. Not just school counseling.”

Monica: “Internet Access. It’s just a wealth of information. You could drop me in a hole with a student, and if I had Internet access there is nothing I could show or talk to that student about. Nothing. Whereas, you could give me a phone, but I can’t always show them everything. If I had an iPad, and I don’t have Wi-Fi, and it still is limited on some of the absent the iPad has and some of the ways that things work on the iPad or don’t work, it’s still limited but I could leave a desktop that has an Internet with a student and I could show them everything. There’s nothing I couldn’t show them.”

**Portability of technology tools.** The capacities and abilities of current technology have allowed counselors to go beyond the confines of both their respective offices and traditional presentation areas. Standing in the school lobby with a student now can present a chance to have a meaningful discussion with a student that before might have been a lost opportunity, because

while the student intended to come see the counselor about some information, he or she just never made it.

In addition, spaces previously unavailable for student presentation without a cumbersome effort to transport equipment and other technology tools now can be used to address student needs. Instead of an AV cart with a large television on top that appears to be ready to topple over with one caught wheel or large bump, now a counselor can present in a classroom with a laptop and an LCD projector.

Ginny: “They’re great because you can take it with you. For someone like me who goes into the classroom, I have everything down my laptop, so I plug right into the teachers SmartBoard and my lessons are right on my computer, so they go right into the SmartBoard. And then I started to use dropbox, so stuff I can create at home I can put in dropbox so that I don’t have to re-created here. And that’s been a big help for me too. But then we have this safe touch program, where they come in and talk about child abuse or sexual abuse lessons, and they’ve come in but they need access to a laptop. But when I go into a classroom, the teachers take their laptops and they go because they work on their laptops because that’s their planner. So I’ve had to give the company my computer my laptop the conduct their presentation. But it’s become like the lesson plan book.”

Ginny: “I love those flip videos. I thought those were the greatest thing. And I use them a lot. And in fifth-grade I would have them do role-plays for social skills, and put that on a flip video and show it to a group on the SmartBoard. Because they’re just easy to edit, there easy to carry, the kids can even shoot it.”

Haley: “I think that having, I am in iPad fan, and I think the reason why is because you have it with you all the time, or you can. It’s easy to have with you all the time, so you can check different things, you can check that blog quickly, you can, as you’re standing in line or you’re waiting for first. Or something, you can do it really quickly whereas before you had to be sitting at your computer to do it.”

Tonya: “I think the technology really the laptop, the technology of that has been the greatest influence because it has allowed me to work more, it allows me to transport files, and even though I have the little ScanDisk and those things too, it has allowed me to I think do my job a little bit better, but it’s only because I spent more time on it.”

Wendy: “The laptop. The laptop for sure. A Mac. Because there’s nothing like a Mac computer, the programs are visually better, they don’t have viruses, their quick, their light weight, so I would say a Mac, a laptop probably is the most significant thing that’s happened. Rather than a PC at my desk. I mean that would not at all help me.”

### **Technology With Most Negative Impact To School Counseling**

There was a one technology that school counselors repeatedly and adamantly identified as the primary negative technology introduced into our schools, which did not come to schools by way of school personnel first, but was instead brought into the schools by students: social media. Counselors time and again expressed concern about the way that social media has had impact on student interaction and on how students are electing to use social media, further complicating the intricate and tricky relationships that students often have with each other and with adults. The result is reported in Table 9, p. 119 (below):

Table 9

*Negative Impacts on School Counseling*

Negative Impact	#
Social Media	7

A comprehensive list of negative impacts identified by school counselors can be located in Table 13 on p 205.

The difficulty truly appeared to be less with the technology itself than with the manner in which it was being used by those wielding it. Many of the statements did not indicate that the technology itself had problems, or that the technology was intended for untoward purposes. Instead, the choices being made by students while using the technology were the much larger issue. Counselors indicated both that they felt that no one was properly preparing students to properly use, nor maintaining awareness of how the social media accounts were being used by the students. In addition, counselors felt generally unprepared to deal with the new barrage of social media concerns coming into the school on a daily basis.

When speaking of the negative effects school counselors overwhelmingly addressed social media as bringing the major negative influence into schools and having the most negative impact on school counseling. The emphasis in these statements dealt with the abusive nature in which students were using social media towards other students, and in some cases, toward adults. It was clear that counselors perceive the uncontrolled and constant expansion of social media as a particular problem related to school counseling, primarily because of the difficulty in monitoring student's social media interactions and the subsequent problems those unmonitored, unfiltered and sometimes uncontrolled dialogues bring to the school, disrupting the learning

environment for many. The ongoing difficulty is that many parents and educators are unaware of constantly emerging technologies and how they are being used by their own young people.

That is not to say that parents and educators are unaware of emerging technology; quite the contrary. The adults are aware of the constantly shifting and accelerating landscape of technology, but few have the time and resources to be so consistently enmeshed in the varying technologies in order to be proficient in use and aware of the implications for students. Put another way, students have ample time on their hands to learn and use technology when available to them, and they are quickly becoming the experts. The adults have responsibilities other than learning technology, and even when afforded time and resources, cannot learn all of the various forms technology has taken.

We constantly see this shift play out in the media: Facebook has a new policy, and in order to keep your data private, follow a new set of instructions; Twitter is changing its EULA, or End User License Agreement, which means you are agreeing to give up more of your already limited privacy; Google+ will now use your data in “sponsored-stories” advertisements. To make matters worse, we see people incurring the repercussions of poor choices they are making through the use of social media, whether falling under the realm of bullying or simply allowing their fingers to say what they would not dare in a face to face conversation.

Glenda: “Specifically, I would go with Facebook and Twitter and the fact that kids, as you said, hide behind those devices. Or, either they’re hiding behind those devices, or they’re using goes to rally other people and to post just ugly comments and bully student’s, and texting as well, until the number gets blocked. And then that carries over into our school building. And we end up having to deal with the bullying and the harassment and the taking sides and I see

more and more the students who see those Facebook accounts at home, and they print what they see or what they've read and then they bring it to school for us to help them cope with it. And the admin, our County is just now changing this, but we don't have access to see anything like that. Up to this date, we've been blocked from YouTube and Facebook, and so I can't even, if a student says somebody said such and such on Facebook, I don't have a way to access that."

Ginny: "And we do stuff on cyber bullying to which became a big issue this year because this year a lot of kids got iPod touches iPods. Before we would have a few kids each classroom that would have them so wasn't that prevalent, but a lot of kids now have Facebook accounts. So I did a little bit of cyber bullying lessons, but next year I'm get a do more with common sense media and digital passport program. And also obviously bring the computers in the room and they'll be able to do interactive stuff on that as well."

Haley: "Well I think Facebook in terms of bullying, cyber bullying. Maybe the best way to answer the question is, not a particular thing, but the most harmful has been the technology is so quick and for making smart decisions and forward thinking that teens and preteens don't have, it doesn't account for that so they make a lot of really silly mistakes because their brains are able to think yet of what this is can do in the future."

Angela: "Um, this isn't so much about what I do with technology as about what I see kids doing with technology, you know, probably 75% of our discipline has got something to do with he said that on his Facebook page, or he did this on his Twitter, you know it's that kind of junk. And you're going, why did you bring this into school? So that kind of thing, and then of course you know try as we do, they have access to every kind of vile and nasty thing you can find on the Internet, and our Internet security people are constantly monitoring for all that sort of thing. So it

goes back to you can find anything you want on the Internet, including things you don't want people to find. It's really a continuum of the same thing. I do think that for some students that the Internet technology in all of its forms becomes an isolating because the not dealing with each other but it's my computer dealing with your computer back and forth, but we are not talking to each other. And I guess it was always, you know people of always been cruel to each other, but now you can be cruel and everybody in 10 counties knows it. So you know, it's just sort of widespread, the impact of what you do is so much broader."

Elaine: "Well I think Facebook in terms of bullying, cyber bullying. Maybe the best way to answer the question is, not a particular thing, but the most harmful has been the technology is so quick and for making smart decisions and forward thinking that teens and preteens don't have, it doesn't account for that so they make a lot of really silly mistakes because their brains are able to think yet of what this is can do in the future...so it's almost that it's too connected and too fast...And especially with the girl drama, and how friendships are so embedded in who they are, and the have that girl bullying where it's really subtle, you can do something very subtle on Facebook or Instagram that only the person that it's meant to hurt can pick up on it. You know, a birthday party that person was invited to that gets posted about on Facebook, so that's the hardest and it's not to go anywhere and it's not a change, so you have to teach kids how to live with it and make appropriate choices."

### **Recommendations Going Forward**

School counselors consistently and strongly suggested that they needed current and relevant training regarding the best and most effective ways that technology is being introduced

to and implemented into school counseling programs. There was one recommendation that stood out above all other and was echoed several times over: Direct and current training relative to best practices, as indicated in Table 10, p. 123 (below).

Table 10

*Recommendations by Participants for Future Implementation*

Recommendations	#
Direct and current training / best practices	9

A comprehensive table listing recommendations for future technology use and implementation can be located in Table 14 on p 205.

Tonya: “Where I’m kind of that now, I have my toys, you know the county can’t pay for that. We’re at the point where we were not even getting trained outside of what we do here in house at our schools in the county, and in addition to that we haven’t gotten a raise in years, and staff development kind of gone out the window.”

Teri: “...it (the technology) changes so fast, and we don’t have the time, and there’s no money, at least with what I’ve seen with the state budgets...there still isn’t money for staff development, which is crazy. There is too much we have to have done, too much we have to learn.”

Angela: “I don’t see anything happening but our schools and counseling and life just becoming more and more technologically oriented, and I’m not a creative person and I’m not somebody that it just comes naturally to, but at the same time I know that sometimes you just have to get in there and bite the elephant and try to get which you can get, because you’ve got to, you know if you don’t you’re a dinosaur.”

Glenda: “And what’s so ironic is, we are the test coordinators, and some of the tests are moving online this year, so we have to going to do some stuff online about testing and modifications and accommodations, and I was trying to do that unsuccessfully, so I wrote your testing person at our main office. And I said I don’t have access I can’t get into this, and he wrote me back and said well we are blocking it, you have to get on a PC in order to get in this data program.”

Andrea: “So I think that for any kind a school counselor program or training or anything like that, that the use of technology and staying current on what the kids are doing and being able to integrated into what’s going on in schools, because the kids, part of their frustration with us as adults is that we don’t know what’s going on? So I think if you want to be effective, you have to stay current with what’s happened. And of course that changes in a minute, and then I think that what that also means is that you’ve got to try to incorporate those things into the way that you work with kids, whether it’s having a blog or however you communicate with them so that you are communicating with them where they are, because they’re not coming to you, you have to go to them. I think that’s just essential. I think people that are younger than me and working in counseling it’s a lot easier for them. I mean I’ve got a little Facebook page but that’s just so I can keep up with my nieces and nephews. But I think we have to learn that and learn how to use it, and I think it’s essential that we try to present information to them where they are.”

Wendy: “I would say they need laptops. And I would say they need to be Macs. Getting familiar with interactive boards, because I understand SmartBoard is just one brand name, but there are other options out there. But there are things that are loaded in the SmartBoard, things that deal with feelings and emotions, that you can use out there so getting to learn that piece of it.

And then learning how to use videos as been real helpful, and making their own videos students making their own videos has been real helpful. Students making videos on relaxation, and being able to play that back for them. Videos do that as well, and you can do that with a Mac where you've got a camera right in the computer."

Heather: "For example, we had to do this by phone. I didn't have the ability to do that in any other way. I didn't have access to a scanner to be able to send you my signature, I don't have access to a color printer, there's lots of things and that goes back to budget issues. But what I would like to see in the next 10 years would be all students with the access to a tablet. Don't ask me how with the money part, but I just see that being the trend and textbooks being all electronic. Me being able to do everything with electronic communication, and that doesn't mean that I don't have face-to-face and do those parent meetings, but one of the next things I plan to do is to start videoing my parent meetings, so I can put them on the website, you know for parents who work or are unable to attend...even though my center is a center of advanced technology, all of my classrooms don't have Elmo at all. I think we have two in our building. And so that changes what I do and what I can do with my classroom guidance. I would like the ability to have done access in every classroom, to be able to going to a computer lab or have students have laptops and link everything to the same video that I might want them to watch on a career. So I see the need, and a lot of it just comes back to budgetary issues."

Bridget: "We are trying to leave our media Center open in the afternoon until at least 4 o'clock. We do have a couple of computers here in our counseling office that we are constantly having kids get on and showing them. The only thing we can do, is to try to be open for all kids and to try to help them. Now that means that we need to know what we are doing, we have to

spend more time, I spend a lot of time of financial aid in the FAFSA form before we even get into that, because I need to understand what's going on with that. So I think counselors are going to have to spend more time understanding some of the technology so that they can talk with the kids and talk with the parents, and I'm not sure how many counselors are always willing to do that. I don't know."

Haley: "I think one thing that would really benefit me at the elementary setting is, I'm starting to see this now, are SmartBoard lessons. So, that's pretty short-term, and people are already doing that, but I think that is school counselors we have to find our own way with to, and we base a lot of what we do on what the teachers are doing. And we form it to be what is relevant counseling, but a lot of times classroom guidance. But I think that we have to do a better job being more specific with counseling in technology and want, and my intern right now is working toward implementing technology things, and it was encouraging to see that because I was showing her all of these different things and let's do this and lets you that, and then I read her syllabus I realized her professor was making her do it anyway, so I was encouraged by that to see that higher ed is targeting how to use some of these programs in your counseling programs."

### **Additional Comments from Participants**

Bridget stated that a piece of technology from which she could benefit is a scanner. There is not currently one in her department, and it would have been very helpful for American School Counselors Association National model, for keeping and archiving documents that are not currently preserved digitally.

Charles stressed to me that for what we lose with face-to-face communication regarding body language and tone counselors, need to make up the difference and make sure we communicate as effectively as possible with stakeholders.

Teri brought out an interesting point: Previous slow communication allowed for correction of errors and more thorough thought process. In this day and age, communication is expected on a much more rapid / efficient scale, and the margin for error is much smaller, because expected return of information is much more rapid, and counselors have to know more and be able to make judgements more rapidly.

Angela pointed out that bad news travels even more quickly than it used to, as some students have the ability to communicate immediately with their parents when the students receives information he or she does not care for. She stated that it is now common for her to hear from a parent within a few minutes of sharing any bad news with a student instead of the following day, as happened when she first started as a school counselor.

### **Analysis of the interviews**

There were several prevalent themes throughout the interviews, and response areas that appeared to dominate the conversations. The second interview question assists counselors in thinking about the technology pieces that have been implemented throughout their careers, what has worked and what has not worked regarding those technology pieces, and what might have or should have been different. Regarding the ways in which technology has changed the work, (Table 7), school counselors responded that technology had the strongest change in how data is collected, both related to the ability to simply collect information on student progress and also to

collect current, relevant external information (college, career, etc.). Strong changes were also recognized regarding more and better productivity facilitated via technology, coupled with the perceptions of saving time and being more efficient in their work. Continued recognition of changes in the work included (in order of strength of responses): being able to access current and relevant information, better quality and more individualized communication, individuals (counselors, students, parents) being more empowered to access and research information of all types, increased networking and collaboration among professionals and stakeholders, increased workload, reduced need for document recreation, disparity in access for students and families in and out of school, a perception of loss of the art of conversation on the part of students, higher expectations for increased response times, more management of large volumes of student data, reduction in foot traffic in the counseling office, access to a wider remote array of access points to information (web, email, tablet, etc.). Some surprises that an individual mentioned among the interviews contained statements referring to the appearance of promoted isolation among students, assistance integrating the ASCA National Model into school counseling programs, less face-to-face contact for counselors, the misuse of technology (apart from social media), clients need to learn two processes (i.e. learning to navigate a financial aid website and then also having to learn the financial aid process), not having enough in school budgets to distribute technology equitably, that a steep learning curve is frequently involved, and that a wide array of apps exist for student engagement.

## **Chapter Five: Discussion**

There are many moving parts to the dynamics of schools counseling. Likewise, there is a constant shift playing out globally related to technology in our everyday lives that in turn affects nearly every facet of our lives. Industry is working hard to make technology available to us in every way shape and form, rarely for our own good but certainly for our own convenience. Industry is also working hard to make sure that convenient technology is available to us at every turn.

Whether school counselors want technology to pervade their work or not no longer seems to be a choice. Technology has been integrated into our communities beyond the point where schools have the ability to refuse its entry into our schools. It travels with the adults in our communities and has been instituted by business and entertainment as a staple of our society. In short, technology is no longer an option, it is a requirement in order for schools and subsequently for school counselors to remain relevant.

Technology comes in many forms, from comfortable shoes to solar panels. The technology that affects students, parents, schools and communities is the technology that school counselors must be concerned with, learn to use and implement in their school counseling programs. School counselors are no longer simply teachers who advocate for students to make informed choices about new roles in the workplace that technology is bringing forth. Today, a school counselor is an educator, a data analyst, a communication and media relations expert, a publisher and graphic designer, a program implementation consultant and even more. Technology has the capacity to allow school counselors to accomplish many of these tasks that

have become framework to their daily responsibilities, far and away from the original purpose and focus of the school counselor.

The counselors participating in this study come from different backgrounds, work at different grade levels and have varying focal points for their student populations, but they were clear on just how technology has changed the work, what the negative impacts were, and their collective recommendations for moving forward are. Less unified are the positive impacts, but there were more ways that positive impacts were addressed.

Counselors addressed 32 ways in which technology has changed the work of the school counselor, with the strongest being data collection, followed closely by more / better productivity and saving time / efficiency. Also highly touted related to changes were access to current / relevant information, mobility / portability and widespread, efficient distribution of information.

In discussing positive impacts, the most prevalent of which (in order of strength of responses) were communication, global access to information and portability of technology tools. While there were 11 positive impacts addressed overall, the three most significant impacts of communication, global access to information and the portability of technology tools outstripped the eight others. Those positive impacts have truly changed and propelled the work of the school counselor in ways many would not have thought possible.

It is now possible to communicate with stakeholders asynchronously, working on and completing multiple tasks at a time while making progress on each. It is no longer necessary to physically go to a location to obtain information about a student's progress, or observations a teacher can share about a student's needs in order to move forward. It is also no longer necessary to remain locked into a single location, such as the counselor's office to send or receive

information about a student or about resources in the community that a stakeholder might be able to access. In that sense, counselors now have the ability to work with a broader volume of stakeholders because there is now the capacity for communication fostered by technology that can streamline the efforts of the school counselor.

Being able to resource information has given school counselors a tremendous amount of power at nearly any time and any place, including when out in the community. From the vantage point of the school counselor's office, a school counselor can access an amazing amount of information worldwide about programs and resources from which students can benefit and can help stakeholders learn to resource the information independently. Beyond the confines of the office, counselors can help stakeholders learn to resource information about career development, postsecondary options, healthy living choices and a host of additional information in classrooms, large presentations and other forums. Even if having a discussion in the community, a counselor can utilize a mobile device to send a resource to a parent with whom the counselor has had a conversation, or a counselor might be able to send a reminder to see a student within a few days about a concern addressed by the parent. Without that happenstance meeting in the community, the contact may not have occurred. Without that contact, one possibility for student advancement and achievement may not have been realized.

Moving beyond the traditional confines of traditional and more formal meeting and presentation areas gives counselors the ability to address student and parent needs in a larger number of places and with more direct contact. It makes the counselor more accessible to the masses, which spreads information at a higher volume and allows more families to benefit from the assistance that school counselors can provide.

While collecting information about negative impacts, the strongest theme by far was the impact of social media on the work. Within that discussion was largely a concern about free-for-all arguments and heated debates begun in the community and subsequently brought into the school environment. The other six themes brought up in the discussion still had meaning, but were not as powerfully pronounced in the overall study as was the negative impact incurred via social media.

The tools themselves, Facebook, Twitter, Instagram and Snapchat, to name a few, were not viewed as good or bad in of themselves, but the manner by which students deigned to use those networks was the issue of concern for counselors. Like any other tools, the purpose behind the use of those tools often determines the outcome. The training behind the use of the tool and the intent by the user for the tool then shapes what takes place, and counselors are concerned that far too often, there has not been sufficient instruction in the use of the tool, and that without guidance, ill-intent sometimes is the end result.

The discussion about recommendations going forward also had one theme that far outstripped the others: Direct and current training / best practices. Counselors want to know what is going on with technology, and would appreciate knowledge of the latest and greatest trends, but do not have the resources in time and money, nor the navigation of the learning curve required to individually keep up with the pace of technology and adequately manage their school responsibilities and personal lives. The bulk of the responses in this area hoped for a more efficacious way to effect training and professional development, and a mechanism by which they could access best practices. For many counselors, there are too many choices regarding technology options to learn them all well enough to be fully proficient and still efficiently

address the needs of their school caseloads. That requires outside time, of which there is simply not enough to fully keep up with rapidly evolving technology.

As in the rest of life, there are peers among school counselors and educators who are more comfortable with, and therefore have the willingness to become more proficient with innovative practices. Until there is an effort to establish a metric for best technology practices, and a method by which technology instruction can be individualized and widely, effectively, uniformly, inexpensively delivered, there will continue to be a wide disparity in how technology is utilized among school counselors. It is important to recognize that much of the decision making that accompanies which technology devices are afforded to school counseling programs do not rest with school counselors, but instead are ultimately the determination of school administrators, hopefully with some input on behalf of the ultimate end users.

There is also a substantial segment of technology that is affecting the work that counselors can have no say in whatsoever, because that technology is being consumed by the public at large, and is bearing consequence on the school environment, specifically social media. Again, access to those resources is largely out of the control of the counselors at the school level, unless they (a) make efforts to access the technology outside of school resources, via a server outside of the school environment, and (b) perform access through personal technology, which not all school counselors have, or may have but may not possess the most recent devices or upgrades, upon which some of the technology needs to run.

How do school counselors keep up? On April 12, 2015, WTHR news reporter Rich Van Wyk wrote about a weekend class in Indianapolis where teachers spent time "...trying to catch up and get ahead of a tidal wave of classroom computing." One of the teachers in attendance

was quoted as having to constantly ask of students, "What are you doing? What are you looking at? What app are you using? [My students] are always a little bit ahead of me. I am trying to catch up with them," she admitted."

There is no simple way to keep up. It is an investment of work and personal time to learn all the pieces that go into school counseling without technology added into the fold. In general, one can see that work in action with the online forums in which counselors participate. They counsel each other, collaborate and confer on best practices as well as sharing their struggles about the treatment of school counseling programs and school counselors within their respective districts. They share their love of school counseling and their collective disdain for tasks considered by many and by ASCA to be inappropriate for school counselors. Then in subsequent statements, other counselors will send both words of comfort and admonition, effectively communicating that we may not like it, but it has become part of the job, so take a deep breath and just get it done.

Solutions to this problem should be further studied and explored. An option is to create a central clearinghouse, a repository of sorts where solutions to specific problems can be routed and considered. The difficulty with that lies in how that can financially be accomplished. Is one counselor who is an expert to give up her livelihood to donate time and energy in the exploration of the most pragmatic technology answers for schools? Individual counseling departments do not have typically have funding to hire consultants, and larger systems typically push down an overall resource, such as a student information database or technology piece that is purported to be comprehensive but then comes with big promises, little training and sometimes limited application. From the standpoint of counselors who conduct the work, it seems that those making

the decisions about technology to be used are far removed from the work actually being conducted.

An option to this conundrum could be a cooperative effort between school systems and local universities that have access to some more recent technology practices in conducting professional development and facilitating discussions about best practices to in turn best serve students, parents, schools and communities.

The most important dynamic to consider in all of this effort is the nature of change, and the ever important reminder that in order to stay relevant as school counselors, counselor educators and as people who are concerned about the welfare of students, we must continue to grow and learn ourselves. Technology will outpace all of us, but we, the people, are the drivers behind, consumers of and users of the technology. Ultimately, how it is developed, what it is developed for and how it is used is determined by a human being. In all cases, every stakeholder in a young person's life should help shape the thinking process behind how technology is used.

### **Limitations of the Study**

There are several limiting factors in recruitment that have been discussed regarding the process of this research, but are worth reiterating. First, the gateway by which the researcher was required to access the study participants may have hampered access to the study participants, since the initial message had to be transmitted to the acting building principal, and then forwarded to the counselor(s) for review. A second limitation existed in finding candidates with 15 or more years in the field of education overall. Additionally, some participants were willing to complete a written format of the protocol, but were not interested in participating in an interview.

Concerning the interviews themselves, there were two primary mechanisms of conducting the interviews: Face to face and by telephone. The face to face interviews were video recorded, and the telephone interviews were audio recorded. There are fairly minor, but subtle differences with those interviews that could change the end result of the interview and potentially affect the overall study. The face-to-face interviews allow for review of facial expressions and body language in conjunction with answers provided, whereas the telephone interviews relied heavily on verbal cues and tone to help the interviewer lead the discussion.

The interviews varied in length from approximately 25 minutes to approximately 50 minutes. Some of the variables changing length of time for the interviews were constrained schedules and workplace interruptions. In at least two of the telephone interviews, counselors working in their offices also needed to speak with students or other school staff, which may have interrupted and changed the flow and potentially the direction of information being provided.

### **Implications for Practice**

There are two primary areas where the research and results of this work can be utilized to effect change. The first is in the area of counselor education. Many programs are focused on the CACREP standards, and rightly so, as CACREP is the governing board of counseling programs around the country. The difficulty for technology implementation comes when CACREP nor ASCA can dictate to school systems which technology is most appropriate for counselors to use in practice, thereby leaving each school system and sometimes individual school buildings without uniform standards for learning and implementing various technologies.

It is the researcher's opinion that this would be a futile effort anyway. As rapidly as technology is changing and is introduced into society and schools, it may only further artificially extend the learning curve for introducing and implementing new technology into school counseling programs. Instead, the competencies should reflect specific generalizable skill sets not already widely practiced that have wide use and range to be implemented during the academic and practical portions of training. For instance, universities might partner with local education agencies and state authorities to provide training access to student information systems, so that counselor education students are not exposed to and expected to learn those information systems and databases for the very first time when they enter a school building.

Likewise, the academic training already contains much in the way of role playing for scenarios. This should also frequently incorporate a "response via technology" role play, where professional communication is practiced, and is regarded with the nuances of communication that are important to establishing and maintaining rapport.

Counselor education students should be encouraged to consider the types of information it is vital to communicate to students, parents, teachers and the community, and consider what their school websites and professional social media profiles, if the choice is made to use them, should include, considering the wide ranging access to that information the public now has at their disposal. Within this context, counselor education students can be guided along the competencies within the CACREP and ASCA frameworks, taking care not to violate confidentiality and adhering to ethical standards.

Relative to the school systems, there has been some effort on the part of some to provide a generalizable training for counselors when collecting data in widespread applications.

EZAnalyze is one such application, frequently trained up by Dr. Russ Sabella. EZAnalyze is a Microsoft Excel add-on that can assist counselors in logging time so that the data can be used to monitor their practical responsibilities against the ASCA recommendations. Aside from that, there is little in the way of ensuring that counselors working in school districts have the ability to meet the same technology standards, instead addressing the technology competencies in ways that provide flexibility to counselors, but possibly too much, allowing for many to utilize and implement technology at many different levels. Many states have incorporated a requirement for licensure renewal that includes technology, but it is left to the discretion of the individual counselor as to what the technology is on which training will occur, and is usually a very low standard.

So then, the potential for providing consistent, systematic and thorough training becomes severely hampered. The technology being used is not at any particular standard across the spectrum, so any training has to be individualized for the organization or for the small group of counselors utilizing that specific tool. Fortunately, there are some tools that are becoming widely more popular and widely more adopted, such as social media platforms and Google Apps. Those tools are still gaining popularity for use, so what practical training can be provided in a world where the tools and usage are ever-changing?

Training on ethical usage, legal issues and concerns and discussions about moral utility of burgeoning technology is of primary importance. Knowledge of whether school counselors should, how it is safe to, and can securely use technology tools is a conversation that cannot be taken for granted, and should be addressed regularly.

## **Implications for Future Research**

This research needs a wider range of participants to more fully account for more diverse populations, more varieties of school situations, and could in the future include counselors who have shorter career durations. The researcher's primary goal was to address how technology has changed the role and the work of the school counselor. In that research, it became apparent that practices for technology training and implementation are inconsistent and yet important. Moving forward, an ever-growing and broader spectrum of technology will become available for use in school counseling programs, and will be adopted by innovative and technologically savvy school counselors. Future research should be dedicated to the careful and thoughtful adoption of technology into school counseling, with a special focus on the ethical and legal aspects of implementation, taking into account federal and state laws regarding confidential student information, the legality of information put into any form of print, be it on paper or online, ethical practices of the American Counselor Association and the American School Counselor Association, and competencies expected of professional school counselors. There is tremendous room to grow in this area, and just like the speed of the technology creation and adoption, an expert can quickly revert to a novice without pushing the limits of his or her own learning.

## **Uses Beyond the School Counseling Circle**

This research is not limited in its scope only to school counseling. Anyone who works with children at various levels, including administrators, teachers, care providers, mental health workers and college personnel can derive benefit from this work. Personnel in K-12 settings particularly can benefit from the discussions about how rapidly technology is changing the

school environment, and subsequently the issues that both come with and are created via the use of technology. The legal and ethical issues regarding technology that affect all personnel in K-12 education are inherent in this study. While those legal and ethical issues weigh more heavily on school counselors and school social workers, those concerns extend well beyond the office of the school counselor to include those who work with adolescents in the mental health field, those who work with youth and families in social service systems, and those who are responsive to the needs of adolescents across the spectrum.

In addition, Career Development for K-12 education, colleges and universities and private-sector recruitment are potentially impacted by this research. The earlier technology is adopted in schools for curriculum and training is provided to that supports greater self-efficacy for students and parents, the more potential information stakeholders have when moving forward into the rising workforce.

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## **APPENDICES**

### **Appendix A**

#### Interview Protocol

The interview will be conducted in a semi-structured format, allowing for the researcher to begin the questioning process and redirect the interview back toward the subject matter when necessary. Since the object of the interview is to obtain the participants' legitimate viewpoints and stories related to the subject, the semi-structured nature of the interview will more fully allow them to express not only their experiences but their honest and candid opinions about the effect technology has had on the school counseling profession and the implications technology has had on students, parents, the community and schools.

1. Participants will be asked about their backgrounds including: Years in the school counseling profession, years in education overall, years in public education or private education, other positions held in schools, other work positions held in professional life.
2. Participants will be asked about their opinions of technology in the schools.
3. Participants will be asked to discuss how they have seen technology impact their overall schools over the duration of their careers.
4. Throughout the interview, clarification will be requested on types of technology utilized, the benefit or detriment to the overall career and the service of the students / parents / community.

#### Interview Questions

1. How long have you been in education, and in what capacities (please list chronologically)?
2. Over the course of your time in education, what technologies have you seen implemented, and what have been their evolutions?
3. How have these technologies impacted your work? How have they impacted the lives of students, parents and the school overall?
4. What one technology has been the most beneficial? Please describe how it has been beneficial.
5. What one technology has been the most harmful? Please describe how it has been the most harmful.
6. What professional development has been made available to you or have you engaged in related to technology, and by whom was it offered?
7. What suggestions do you have for technology integration going forward, specifically as it relates to school counseling?

**North Carolina State University**  
**INFORMED CONSENT FORM for RESEARCH**

The History and Implications of Technology on School Counseling

Eric Chancy

Dr. Edwin Gerler

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**What are some general things you should know about research studies?**

You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

**What is the purpose of this study?**

The proposed research will work to reveal the impacts and changes technology has made in the field of school counseling in the state of NC, particularly over the course of the last fifteen years. It is important because the rapid advance and implementation of technology has the potential to assist counselors in their work with students.

**What will happen if you take part in the study?**

If you agree to participate in this study, you will be asked to:

- 1) Sign this consent form
- 2) Through a digitally recorded interview, provide information about your professional experience, and your observations of the ways in which technology has impacted the profession of school counseling over the duration of your career, noting the different types of technologies and their benefit / detriment to the profession and your work.

## **Risks**

The subjects will bear no overt risks, as they will be sharing their own stories and experiences regarding changes in the profession overall.

## **Benefits**

The potential direct benefit to the subject will be the ability to memorialize portions and segments of their careers, and receive individual copies of their own interviews.

## **Confidentiality**

The information in the study records will be kept confidential to the full extent allowed by law. Data will be stored securely in a secure lockbox in perpetuity. No reference will be made in oral or written reports which could link you to the study. You will NOT be asked to write your name on any study materials so that no one can match your identity to the answers that you provide. If at any time a request is made to utilize your recording for further study or for teaching purposes, a written authorization will be requested, providing you the right to allow or deny usage.

## **Compensation**

For participating in this study you will receive your own DVD copy of your interview. If you withdraw from the study prior to its completion, there will be no interview to record.

## **What if you have questions about this study?**

If you have questions at any time about the study or the procedures, you may contact the researcher, Eric Chancy at 919-418-4402 or [ejchancy@ncsu.edu](mailto:ejchancy@ncsu.edu).

**What if you have questions about your rights as a research participant?**

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514).

**Consent To Participate**

*“I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.”*

**Subject's signature**\_\_\_\_\_

**Date** \_\_\_\_\_

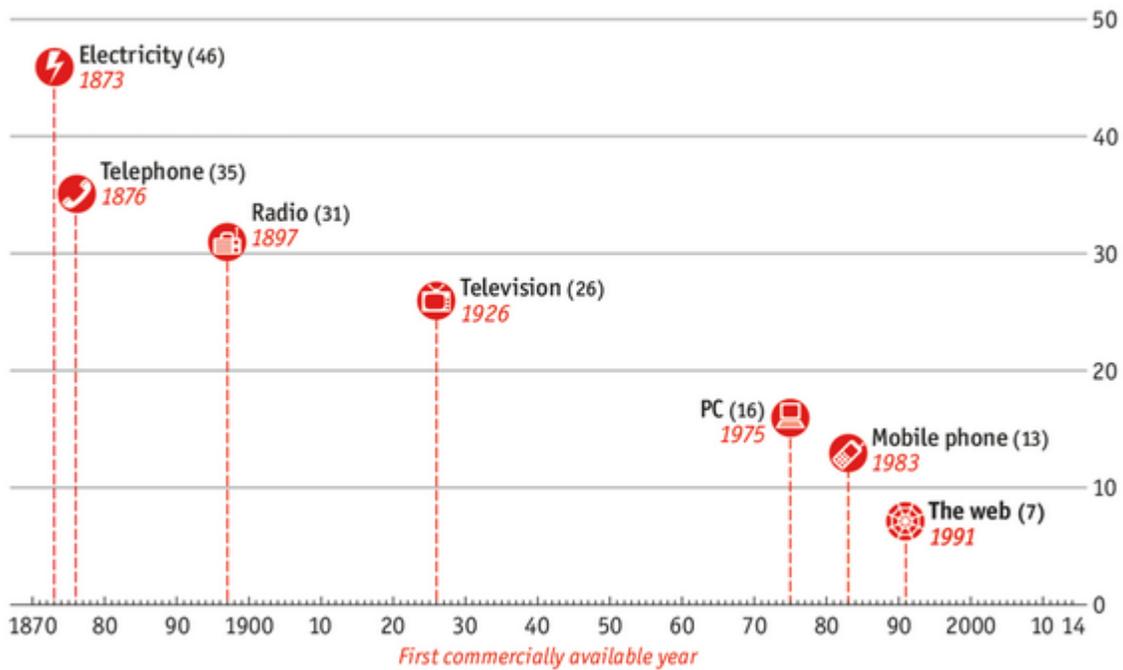
**Investigator's signature**\_\_\_\_\_

**Date** \_\_\_\_\_

## Appendix B

### Technology adoption

Years until used by one-quarter of American population



Source: Singularity.com

Economist.com/graphicdetail

<http://www.kenburbary.com/blog/2014/3/12/society-is-adopting-technology-at-an-increasingly-rapid-pace-over-time>

## Appendix C

Google Maps Street View – 921 N.W. 179 Terrace, Miami, FL

Home of the researcher from 1972-1989



## Appendix D

 Caught In The Middle School Counselors 

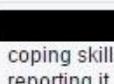
RECENT ACTIVITY

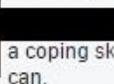
 2 hrs

For the past 3 weeks the number of cutters at school has multiplied. I had 5 students in one day who were cutting 2 weeks back, last Friday 2 students, and welcomed 3 more cutters today! How does your school address this issue?? Our PE teachers have been very helpful in identifying students, but at a school of 1600 with 2 counselors, it feels never ending. Anything that's has worked for your school??

Like · Comment

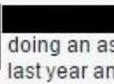
 3 people like this.

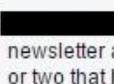
  Assess if they are suicidal. Contact parents, give info about coping skills and refer out. If they are suicidal, follow your schools policy for reporting it  
1 hr · Like ·  2

  feel like it's an "epidemic" everywhere. I usually put those kids in a coping skills group and check in with them. Listen and support best you can.  
1 hr · Like ·  1

  Luckily they have not been suicidal, but I like coping skills group  
38 mins · Like

  also feel like there's more and more each day. Frustrating. Let me look for a link I have that was helpful  
36 mins · Like ·  1

  If it is a lot of copy cat cutting, think about maybe doing an assembly about cutting with a local mental health agency. I did that last year and much of the cutting stopped.  
35 mins · Like ·  1

  We ended up having to put something in our monthly newsletter about cutting. Afterwards it dropped quite a bit except for the one or two that have on-going issues  
25 mins · Like ·  2

High School Counselors' Network

Pages Feed 20+

Like Pages

Create Ad

Create Page

GROUPS

High School Cou... 20+

Caught In The Midd... 2

High School Counselors' Network

4 hrs · Like

Anyone have suggestions on how to deal with 'frequent flyers' in your office? I have some students who try to see me many times per week. Most of my frequents do have mental health issues and need counseling services but some are just looking to get out of class. I will set time limits with them but otherwise I don't know what to do or say without coming across as cold and not wanting to help them. Thoughts or suggestions appreciated!

Like · Comment · 7 likes · 7 comments

and 6 others like this.

I usually suggest to meet with them when it's their free time, like lunch or study hall. I don't allow them to miss class unless it's an emergency. That usually does it.

3 hrs · Like · 10 likes

Well said, Paula!

3 hrs · Like · 1 like

My school doesn't have study halls but perhaps I will suggest lunch.

2 hrs · Like

Before or after school may be an option too?

2 hrs · Like · 1 like

If it's not an emergency, I will remind them we can only meet every few days and ask them to keep a list of things to cover when we meet. When they come to see me, I ask if this is when they want to meet and remind them of their limits.

2 hrs · Like · 1 like

guess we all deal with this. And I hope we are all cognizant and knowledgeable enough to know those who are killing time to get out of somewhere they don't want to be and those who are serious about needing some talk time. I give all of them the be... See More

2 hrs · Like · 4 likes

I usually get asked "Are you busy Mr. [redacted]" to which I usually respond "I am always busy so and so - what can I help you with?" They will typically say I want to talk with you and I will ask them to "give me the one minute overview". If it is something... See More

1 hr · Like · 4 likes

FRIENDS

East Wake 3

Raleigh, North Car...

Wake County Publ...

North Carolina Sta...

Wake County Publ...

INTERESTS

Recent Activity for ASCA : x ASCA Scene | schoolcoun...  
<https://schoolcounselor.groupsite.com/main/archive>

< Previous 1 2 3 4 5 ... 2670 Next >

**Re: Webinar for ASCA National Model (3rd Ed): How is the New Edition Different?**  
 New Reply posted by [redacted] 35 minutes ago  
 [redacted] said: "Thanks. We are working through the ASCA model now in our District. This info. will be very helpful. steve"

**Re: Job Opening in NC**  
 New Reply posted by [redacted] about 1 hour ago  
 [redacted] said: "Hi I know you posted this over a year ago but I was recently on the Mitchell County site and there was an elementary position open there. I..."

**Re: Best Evidence-Based Elementary Guidance Curriculums**  
 New Reply posted by [redacted] about 2 hours ago  
 [redacted] said: "Try Biblio-Rhymology! It's something that is fun for the kids while they learn Character Education skills in the process! https://youtu.b..."

**Re: HELP! Unhealthy relationships 2 1st graders and a 2nd grader**  
 New Reply posted by [redacted] about 10 hours ago  
 [redacted] said: "For a useful article, "Assertive Training for Children," see: <http://www.kellybear.com/TeacherArticles/TeacherTip74.html> For dealing with L..."

**Re: Best Evidence-Based Elementary Guidance Curriculums**  
 New Reply posted by [redacted] about 10 hours ago  
 [redacted] said: "The Kelly Bear C.A.R.E.S. Program for K - 2 includes data from school across the country. For information see: <http://www.kellybear.com/KB...>"

**Re: Best Evidence Based Elementary Guidance Curriculums**  
 New Reply posted by [redacted] 1 day ago  
 [redacted] said: "Thanks so much to each of you for your input and awesome information. As we do more and more in our schools, it leaves less and less time to..."

g+ All communities Recommended for you

**NCDPI School Counseling PLCs**  
 Notifications on 345 members

Share what's new...  
 Text Photos Link Video Event Poll

About this community  
 Invite people Share this community

This community is intended to help facilitate communication for North Carolina School Counselor Professional Learning Communities as they plan virtual and face-to-face meetings and share information. NCDPI hopes the school counselors of North Carolina will find this Google Community helpful in collaborating and supporting one another in implementing comprehensive school counseling programs. You will find all shared information on the All Posts page, but can select your region on the left of the page for information specific to your region only. This forum is open and family-friendly, so please keep your comments and posts professional. Members of this community take personal responsibility for their comments, username and any information provided. Inappropriate comments or comments for the purposes of financial gain will be deleted.

Recorded webinar of Professional Learning Communities for School Counselors at <https://drive.google.com/file/d/0B0vLjEVKXfbcGtFN11R3NQVEk/edit?usp=sharing>

2014-09-18 09:01 School Counseling Professional Learning Communities.wmv  
<https://drive.google.com/file/d/0B0vLjEVKXfbcGtFN11R3NQVEk/edit?usp=sharing>

NCDPI School Counseling Wiki  
 NCDPI School Counseling on Facebook  
 NCDPI School Counseling Web Page



## Appendix E

# School Counseling Program Implementation Survey

Please rate each statement below in terms of the degree to which it is currently implemented in your School's School Counseling program. Circle your response using the following Rating Scale:

**1 = Not Present; 2 = Development in Progress; 3 = Partly Implemented; 4 = Fully Implemented**

1. A written mission statement exists and is used as a foundation by all counselors. 1 2 3 4
  
2. Services are organized so that all students are well served and have access to them. 1 2 3 4
  
3. The program operates from a plan for closing the achievement gap for minority and lower income students. 1 2 3 4
  
4. The program has a set of clear measurable student learning objectives and goals are established for academics, social/personal skills, and career development. 1 2 3 4
  
5. Needs Assessment's are completed regularly and guide program planning. 1 2 3 4
  
6. All students receive classroom guidance lessons designed to promote academic, social/personal, and career development. 1 2 3 4
  
7. The program ensures that all students have academic plans that include testing, individual advisement, long-term planning, and placement. 1 2 3 4

8. The program has an effective referral and follow-up system for handling student crises. 1 2 3 4
9. School counselors use student performance data to decide how to meet student needs. 1 2 3 4
10. School counselors analyze student data by ethnicity, gender, and socioeconomic level to 1 2 3 4  
identify interventions to close achievement gaps.
11. School counselor job descriptions match actual duties. 1 2 3 4
12. School counselors spend at least 80% of their time in activities that directly benefit 1 2 3 4  
students.
13. The school counseling program includes interventions designed to improve the school's 1 2 3 4  
ability to educate all students to high standards.
14. An annual review is conducted to get information for improving next year's programs. 1 2 3 4
15. School counselors use computer software to:
- access student data 1 2 3 4
  - analyze student data 1 2 3 4
  - use data for school improvement 1 2 3 4
16. The school counseling program has the resources to allow counselors to complete 1 2 3 4

appropriate professional development activities.

17. School counseling priorities are represented on curriculum and education committees. 1 2 3 4

18. School counselors communicate with parents to coordinate student achievement and gain feedback for program improvement. 1 2 3 4

## Appendix F

### Profiles of the counties of study participants

Unless otherwise stated, comprehensive numbers were taken from the 2010 census.

**Catawba County.** Catawba County's population numbers around 155,000, and Hickory is its largest city. Maiden in Catawba County is home to the Apple iCloud data center, and Conover has the largest privately owned solar farm in the United States, which is operated by Apple. In Catawba, there are 55,533 households, and 39,095 families residing in the county. The county residents reported that the county ethnic demographic was 87.1% White, 8.5% Black or African American, 0.3% Native American, 3.1% Asian, 0.05% Pacific Islander, and 1.14% from two or more races. 9.4% of the population were Hispanic or Latino of any race.

Of the households, 31.5% had children under the age of 18 living with them, 55.1% were married couples living together, 10.9% had a single female head of household and 29.6% were non-families. 24.6% of all households were made up of individuals and 9.1% had someone living alone who was 65 years of age or older. The average household size was 2.51 and the average family size was 2.98.

In the county the population contained 24.3% under the age of 18, 8.8% from 18 to 24, 31.1% from 25 to 44, 23.5% from 45 to 64, and 12.3% who were 65 years of age or older. The median age was 36 years. For every 100 females there were 97.3 males. For every 100 females age 18 and over, there were 94.7 males.

The median income for a household in the county was \$43,536, and the median income for a family was \$47,474. Males had a median income of \$30,822 versus \$23,352 for females. The per capita income for the county was \$20,358. About 6.5% of families and 9.1% of the

population were below the poverty line, including 12.5% of those under age 18 and 9.7% of those age 65 or over.

**Cleveland County.** In Cleveland County, the 2010 census reported a population of 98,078, with 27,006 families residing in the county. The racial makeup of the county was 74% White, 21% Black or African American, 0.15% Native American, 0.69% Asian, 0.01% Pacific Islander, 0.68% from other races, and 0.72% from two or more races. Of any race, 3% of the population was Hispanic or Latino.

There were 37,046 households out of which 32.2% had children under the age of 18 living with them, 55% were married couples living together, 13.7% had a female head of household, and 27.1% were non-families. 23.6% of all households were made up of individuals and 9.6% had someone living alone who was 65 years of age or older. The average household size was 2.53 and the average family size was 2.98.

The population consists of 25.2% of its residents under the age of 18, 8.8% from 18 to 24, 28.8% from 25 to 44, 23.7% from 45 to 64, and 13.5% who were 65 years of age or older. The median age is 36 years. About 10.1% of families and 13.3% of the overall population were below the poverty line, including 17.9% of those under age 18 and 14% of those age 65 or over.

**Franklin County.** In Franklin County, the 2010 census reported a population of 60,619. There were 23,023 households, with 16,317 families. The racial makeup of the county was 66% White, 26.7% Black or African American, 0.5% Native American, 0.5% Asian, 0.0% Pacific Islander, 4.4% from other races, and 1.8% from two or more races. 7.9% of the population were Hispanic or Latino of any race.

Of the 23,023 households, 30.2% had children under the age of 18 living with them, 52.3% were married couples living together, 13.4% had a female head of household, and 29.1% were non-families. 24.2% of all households were made up of individuals and 8.8% had someone living alone who was 65 years of age or older. The average household size was 2.56 and the average family size was 3.04.

The population's age ranges included 27.3% under the age of 20, 5.5% from 20 to 24, 26.2% from 25 to 44, 28.5% from 45 to 64, and 12.6% who were 65 years of age or older. The median age was 39.1 years. For every 100 females there were 99.1 males. For every 100 females age 18 and over, there were 97 males.

The median income for a household in the county was \$41,696, and the median income for a family was \$51,353. Males had a median income of \$41,025 versus \$34,562 for females. The per capita income for the county was \$21,399. About 12.3% of families and 16.1% of the population were below the poverty line, including 20.6% of those under age 18 and 13.7% of those age 65 or over.

**Guilford County.** In 2010, the census for Guilford County counted 500,879 people, and 192,064 households, 63% of which owned their own housing. The racial makeup of the county was 64.53% White, 29.27% Black or African American, 0.46% Native American, 2.44% Asian, 0.03% Pacific Islander, 1.81% from other races, and 1.45% from two or more races. 3.8% of the population were Hispanic or Latino of any race.

There were 168,667 households out of which 30.4% had children under the age of 18 living with them, 48% were married couples living together, 13.4% had a female head of household with no husband present, and 34.9% were non-families. 27.9% of all households were made up of

individuals and 8.3% had someone living alone who was 65 years of age or older. The average household size was 2.41 and the average family size was 2.96.

The population contained 23.7% under the age of 18, 11% from 18 to 24, 31.4% from 25 to 44, 22.1% from 45 to 64, and 11.8% who were 65 years of age or older. The median age was 35 years. For every 100 females there were 92 males. For every 100 females age 18 and over, there were 88.6 males.

The median income for a household in the county was \$42,618, and the median income for a family was \$52,638. Males had a median income of \$35,940 versus \$27,092 for females. The per capita income for the county was \$23,340. About 7.6% of families and 10.6% of the population were below the poverty line, including 13.8% of those under age 18 and 9.9% of those age 65 or over.

**New Hanover County.** In New Hanover county, the 2010 census recorded 202,683 people. The makeup of the county was 79.91% White, 16.97% Black or African American, 0.39% Native American, 0.83% Asian, 0.06% Pacific Islander, 0.79% from other races, and 1.05% from two or more races. 2.04% of the population were Hispanic or Latino of any race. There were 103,594 households, of which 26.1% had children under the age of 18. 46.5% were married couples, 11.5% had a female head of household, and 39% were non-families. 28.9% were made up of individuals and 8.5% had someone living alone who was 65 years of age or older.

The population contained 21% under the age of 18, 12% from 18 to 24, 30.5% from 25 to 44, 23.7% from 45 to 64, and 12.8% who were 65 years of age or older. The median age was 36

years. For every 100 females there were 93.3 males. For every 100 females age 18 and over, there were 90.7 males.

The median income for a household was \$40,172, and the median income for a family was \$50,861. Males had a median income of \$35,801 versus \$25,305 for females. The per capita income was \$23,123. About 8.3% of families and 13.1% of the population were below the poverty line, including 15.7% of those under age 18 and 9% of those age 65 or over.

**Orange County.** In Orange County, the 2010 population was listed as 133,801. 74.4% were White, 11.9% Black or African American, 6.7% Asian, 0.4% Native American, 4% of some other race and 2.5% of two or more races. 8.2% were Hispanic or Latino (of any race). 45,863 households, and 26,141 families residing in the county. The racial makeup of the county was 78.05% White, 13.79% Black or African American, 0.39% Native American, 4.1% Asian, 0.02% Pacific Islander, 1.96% from other races, and 1.71% from two or more races. 4.46% of the population was Hispanic or Latino of any race.

There were 45,863 households out of which 28.3% had children under the age of 18 living with them, 44.6% were living together, 9.4% had a female head of household with no husband present, and 43% were non-families. 28.1% of all households were made up of individuals and 6.1% had someone living alone who was 65 years of age or older. The average household size was 2.36 and the average family size was 2.95.

20.3% of the county population was under the age of 18, 21% from 18 to 24, 29.9% from 25 to 44, 20.4% from 45 to 64, and 8.4% who were 65 years of age or older. The median age was 30 years. The female to male ratio was approximately 10:9.

The median income for a household in the county was \$42,372, and the median income for a family was \$59,874. Males had a median income of \$39,298 versus \$31,328 for females. About 6.2% of families and 14.1% of the total population had income below the poverty line, including 9% of those under age 18 and 7.4% of those age 65 or over.

**Wake County.** For the 2010 census, the population was 900,993, making it North Carolina's second-most populated county. Compared with the census of 2000, there were 627,846 people residing in the county, for a 10 year growth of nearly 50%. The racial makeup of the county was 72.4% White, 19.72% Black or African American, 0.34% Native American, 3.38% Asian, 0.03% Pacific Islander, 2.48% from other races, and 1.64% from two or more races. 5.41% of the population were Hispanic or Latino of any race.

There were 242,040 households out of which 34% had children under the age of 18 living with them, 52.5% were married couples living together, 9.8% had a female head of household with no husband present, and 34.4% were non-families. 25.7% of all households were made up of individuals and 5.1% had someone living alone who was 65 years of age or older. The average household size was 2.51 and the average family size was 3.06.

The county population contained 25.1% under the age of 18, 10.7% from 18 to 24, 36.5% from 25 to 44, 20.4% from 45 to 64, and 7.4% who were 65 years of age or older. The median age was 33 years. For every 100 females there were 98.4 males. For every 100 females age 18 and over, there were 96.5 males.

The median income for a household in the county was \$54,988, and the median income for a family was \$67,149. Males had a median income of \$44,472 versus \$31,579 for females.

About 4.9% of families and 7.8% of the population reported income below the poverty line, including 8.6% of those under age 18 and 8.9% of those age 65 or over.

## Appendix G

### Interview descriptions - How technology has changed the work

(Following is detail from the individual interviews with the counselors regarding their stories on how technology has changed the work of school counseling. The next key result, Positive Impacts can be found on p. ??? )

Andrea indicated that efficiency was impressively enhanced with the use of technology, but that it required a relatively steep learning curve in order to get started. Things like better tracking of graduation credit counts, being able to keep documents once created, having the ability to immediately change presentation materials based on feedback, and being mobile when provided a laptop computer were considered some of the highest order changes that came about as a result of technology integration.

Andrea also discussed networking and collaboration with all of the stakeholders, and an added bonus of more efficient and wider range collaboration with other counseling professionals. The quality of and efficiency of communication maximized the limited time students and parents have with counselors. Having a laptop provided Andrea, a mother with two young children at the time, the ability to work offsite and out of the office when necessary. She indicated that access to student data allow for updates and information dissemination collectively instead of in a delayed and disjointed fashion, and that the availability of information allows for advanced research on the part of students and parents regarding options for coursework. As a former teacher, Andrea stressed that instructors can now access up-to-date, sometimes real-time relevant topics for inclusion and their weekly planning, and can therefore enhance student engagement.

She indicated that was something she wished she had access to as a classroom teacher, attempting to keep students constantly tied-in to lessons.

Elaine referred to the management of large numbers of students as a way that technology has changed the work. She also indicated that data collection can be expedited tremendously, without counselors needing to move around school buildings, and in some cases very large high school campuses, in order to collect academic and observation data from teachers and administrators. “Positively, it has affected what I do in terms of being able to manage the large numbers that we deal with everyday...I can immediately go and look at that information and not the folder and looking through each one of those papers to find the grade.” Elaine stated her opinion that students talk less, and have become less verbally communicative over time, also adding that she feels students are losing the art of face-to-face conversation. “I worry that they’re...I see students in the lobby up front, and there can be six, seven, eight students standing around. Normally you would see them in a group, congregating, maybe chatting, talking. Now they’re all individually on their cell phone, and texting. I rarely see them talking.” She observed that technology empowers individuality, but also expressed concern that it seems to promote isolation. An additional observation was that she felt bullying utilizing technology was on the increase, and as a result of the misuse of technology is more easily widespread.

Bridget sees the major changes in the profession in the areas of saving time and working efficiently. Being able to save documents, and not completely needing to recreate documents as though they were new was of great value. She recalled that mimeograph machines seemed to constantly need maintenance, but that now copy machines can turn out much larger numbers of documents without as much ongoing care. Bridget indicated that she is able to provide more

current information, which she is then able to distribute to stakeholders in a more timely manner. Bridget indicated that communication has gotten much better. Students no longer take "typing" classes, but instead move straight into technology usage classes. There is an expectation on the part of parents and students that the availability and return of information is more immediate, but she also noted that there is still disparity in technology use in that community, and that some still do not have access to current technology. What has not changed is that parents want individualized attention, which large-scale parenting programs don't satisfy, either delivered via technology or face to face.

Wendy talked about time saving opportunities, and promoting direct individual contact using technology, both by e-mail and by phone, since at the start of her career, the only good way to talk with a counselor was face to face in the office. She referred to saving documents once created, and not complete recreation of information, and no wear and tear on mimeograph machines. Wendy indicated that the process, including data collection, creating and disseminating 504 plans had changed tremendously, and for the better. E-mail reminders for meetings, and reminders about accommodations allowed for less running around, spending a solid hour just to distribute information on an individual student. In addition, Wendy recalled a time when schedule changes required the student running back and forth from the counselor's office to the teacher classroom and back, and reliance on teacher's stated classroom count, then manual entry on the counselors' part to keep the master count. This allowance for changing schedules created more flexibility, which she indicated worked in opposing directions: it made the actual change much simpler, with less reliance on the external information, and less time lapse for the student, but it also created an expectation that it would be done, that the schedule

change would be made, because the process was not as difficult, without consideration of the policies that governed the changes.

Charles noted the convenience and efficiency that technology has brought to the profession, particularly as it relates to obtaining instant feedback regarding student progress, but also in the instances where a counselor is called upon to work with a student and potentially a parent on some type of a resolution issue with a teacher. He also indicated that technology has provided counselors with several ways to find others who can also participate in the counseling process, depending on the particular need. Not only has the Internet provided us with a quick way to communicate with other professionals who may have resources and good ideas to share, but even being able to access information on service providers in the area using basic web searches can be helpful to our parents and students. Charles also expressed that e-mail has a great benefit in expediting information, but if not careful, tone and depth of messages can be lost if the sender is not expressly focused on trying to integrate both tone and depth in an e-mail message. He also expressed that the opposite can happen, regardless of the sender's intent; the reader, unable to hear the voice or see the face of the sender may simply be unable to interpret the intent of the sender, potentially creating a larger problem than both were trying to solve.

Teri, having worked as a counselor and in several administrative capacities supervising counselors, indicated that the ability to use data and the changes that have taken place relative to using data have fostered sweeping change in the practice of the counselors. The establishment of the national model, disseminating that framework and helping school counselors and their departments analyze their work in light of that model have been instrumental in how the counseling practice has changed with the integration of technology. She remembers a time when

data was incredibly cumbersome and painful to work with, and very few professionals had the ability, both in terms of equipment and in software to be able to analyze how efforts were being spent and how a counselor's time was being utilized. In addition, the ability to analyze student data on site can help to realize at-risk factors and conduct preventative work at the school site itself.

Tonya indicated that technology has allowed her a level of portability to work anywhere. That has had both a positive and a negative impact. Her statement was: "I think the technology really the laptop, the technology of that has been the greatest influence because it has allowed me to work more, it allows me to transport files, and even though I have the little ScanDisk and those things too, it has allowed me to I think do my job a little bit better, but it's only because I spent more time on it." She also later indicated that more was being expected of her from all fronts (students, parents, and fellow educators), and that the expectation of more immediate response was at times burdensome. She expressed comfort and a measure of happiness at the level of access to resources that has become available to anyone with access to the net, regardless of the access point. As she stated.. "access to resources is paramount."

Monica's first statement was revealing. "I couldn't function without my computer now. All my documents are filed on my computer. I use the web to search resources, I communicate daily with staff, parents and outside agencies via email and scheduling is done on the computer. I can access a lot of student data and contact information using SPAN, EVAAS, EASi, NCW, etc. Academic conferences with students are much better since I can pull up specific classes and discuss progress with students." She also indicated that her academic conferences with students

are much better as a result of being able to more immediately discuss progress with students than needing to request information from teachers and await their responses.

Heather indicates that the technology changes in the work she performs allow her to be more organized, independent and more able to keep up with increasing volume. In a positive regard, Heather indicated that new technology “challenges me to do something new instead of same old same old”, and that there is a push to drive technology as an implemented part of student life in the overall education environment (classroom and counselors’ offices). She sees the growth of technology as a portal for education for planning for the world ahead. She also expressed concern about what she described as “instantaneous anxiety”, that technology in its rapid fire delivery and expectation of quick return is distressing people in general, not just students and educators, but parents and community members as well.

Angela addressed the ease of access to reports and information, with the caution that sometimes information seemed to be omitted, although the cause was uncertain. She stated that with the use of technology, preparation time for classroom instruction has decreased dramatically, and that information in general is much more timely related to college and career research and preparation. The ability that technology provides people to access information independently allows people to work more independently and often provides for a higher level of discussion.

Angela added that technology can sometimes create more work for counselors because technology tools are not always easy for many of the students and parents to use, and specifically addresses that the intended messages are sometimes getting lost in translation. Students might miss things because the applications are technology dependent, and sometimes students have

trouble filtering what is important and what is not. She stated that technology requires a level of sophistication that my rural students do not possess. Her school has a large SES with about 50 percent of her students receiving Free or Reduced Lunch. With many first-time applicants for college, the process is a mystery, and the technology adds another learning curve and layer. There is no ubiquitous access to peripherals (printers, scanners), so certain tasks can only be completed using the tools at the school building.

When asked to address the changes technology has brought about in counseling, Ginny first spoke to the portability of information, and different mechanisms of accessing information via less cumbersome means. Specific technologies mentioned were laptop computers, and filesharing applications like Dropbox. Ginny also addressed the benefits of not having to completely recreate documents when things change. In both positive and negative terms, Ginny spoke about how she had the ability to work on things at home due to file portability, which sometimes felt like more of a commitment. In another sense, Ginny indicated that some of the curriculum now coming out for use with students assumes ubiquitous technology access, which is not the case. Another side to that same issue is that so many facets of education are now delivered by means of technology, that it becomes a burden if there is not enough technology to go around. Specifically, Ginny used the example that if someone comes to a classroom to present material, and do not have their own technology or cannot access the web through the school's server, then the school is faced with a dilemma: Do they cancel the program, do they requisition the classroom teacher's technology, or do they locate the technology elsewhere, say from the counselor's office? Proper planning cures this dilemma in most cases, but there are times when the technology may fail and no amount of planning can change that.

Ginny indicated that electronic communication has forever changed the way that counselors communicate with the community. In her own words, Ginny stated that, “There’s no way I could just come to school on Monday morning and check my email for the first time. There’s just no way. The expectation is that the email and all that stuff is done at night and on the weekends in order to kind of catch up.” This echoes that previous concern regarding the collapsing line between the workday and one’s personal life.

Being able to make goals meaningful and relevant to students has been of benefit to the work. Whether finding images and photographs online of people students admire, or videos of inspirational figures, or just searching out techniques for deep breathing and ways to enhance counseling program delivery to students, technology makes those pieces available to Ginny to use in her daily work. It makes the world a little smaller, by making collaboration with a nearby middle school possible for both students and educators. Using tools like iPhoto and Skype, students and professionals at the school are able to work with each other to share information and apply meaning to their activities. She hopes to use those collaborative tools to help her students reach across the globe and communicate with students from different cultures.

Glenda told me that, “Technology streamlines what I do and saves time.” She stated that she is no longer performing repetitive clerical tasks in order to prepare for working with students. In the same amount of time, she can work on topics and post pertinent information instead of printing, copying, stapling and distributing. Cfnv and virtual touring of schools, with the added benefit of being able to contact postsecondary professionals is increasingly important in her work. She indicated that social media has changed personal social dimension for the students,

and as a result the work that a school counselor does with students. She feels as though students are losing their ability to communicate face to face.

Haley indicated that her iPad is the single tool that, for her, changed the game entirely. Through that single device, she is mobile and more portable, and so is her work. There is less to bring when working with students away from her office, be it in a classroom or another setting. The array of applications available to communicate, to share and present information and drive more timely information has made substantial differences in the day-to-day operations of her work. While recognizing that there are still families who do not have the same level of technology access or usage, she is more easily able to keep parents informed of the activities and events taking place through the counseling office or pertaining to the curriculum delivery. Rarely does she need to print documents in large quantities, primarily sharing documents through websites or email.

Additionally, activities that would have required cumbersome equipment even a few years ago can now be conducted using the iPad or a laptop, whether recording and editing a video, creating an audio recording or simply creating documentation.

## **Appendix H**

### **Interview descriptions – Most positive impacts**

Andrea indicated that data overall, including both the ability to store and analyze at the site level made providing intervention more relevant, more immediate and more focused.

Likewise she indicated that communication had been enhanced greatly by means of technology, and that email and LCD projectors created fantastic vehicles for providing many people with relevant, timely information. She also noted that email and the Internet provided an individual counselor with an expanded, powerful vehicle for networking with other professionals, both in and out of schools to locate resources for students and parents.

Elaine stated that she saw the true singular benefit and positive impact of technology on school counseling as providing easy access to detailed and expedited information as it relates to student progress, attendance, grade histories, access to teachers, processes, policies and procedures of the school and a school district, and the necessary steps for completion of school requirements, as well as options for life after high school. “Definitely the access. That’s the most beneficial, the easy access. Having details that someone may not have put in a piece of paper because of the time-consuming...they can give you the details, the accessibility, the speed – when it works!”

Bridget felt that the most positive impact to school counseling came in the individual empowerment of students to access data, information and options. That data could consist of the student’s own grades, college information, career information or any number of other things – just about anything the student wanted to know.

Wendy indicated that the most positive impacts were creating efficiency and promoting communication, whereas some see technology as creating isolation. Allowing a student or parent a number of access points to counselors both saved time and permitted people to create contact when they felt the need, instead of being required to make an appointment and take a great deal of time to ask a few questions.

Charles saw the most positive impact with the internet as a resource and web access as a means for an individual or a family to collect information, to communicate with others, and for students and families to be more empowered in determining options for themselves.

Teri discussed the benefits that student databases and data processing programs have brought to the profession, in drawing down on the manual clerical work, and allowing counselors to spend that data collection and manipulation time returning to counseling with students. Teri also mentioned that videoconferencing had become useful in delivering content to a wider audience, thereby opening options for education up to a wider array of families.

Monica indicated that SAM/SPAN and Powerschool (student information databases) have “allowed me to see the individual grades students are making on assignments and has strengthened the academic conferences that I have with them”, finding them very user friendly. The ability to effectively and immediately address a concern for or celebrate a success for a student is tremendously helpful as a school counselor.

Heather stated that the laptop has been the single most effective change agent for her related to the work that we perform. Her rationale is fairly simple: the laptop is a portal by which she can conduct all the major tasks and duties, including a large part of her information delivery to large groups or to individuals. She can make additions to her blog, she can send

email, and she can collect and analyze data, all of which have become essential functions for her work. She sees that as a key for students as well: “I force them, because it’s such an important skill for them to know when they go to college, I force them to have an email account and to communicate with me that way...for many years I checked paper application after paper application to make sure they were right, and now, they must do it electronically.”

Angela focused on the ease of access to reporting and information, with the concern that sometimes the technology omits information. She stated that technology has changed how much time she must prepare for classroom instruction, and that the information she is able to deliver to students, parents, educators and other community members is much more timely related to colleges and careers. With the ability of people to access information more independently, she is able to accomplish more and help others accomplish more, but reports a higher expectation

Ginny, like Heather, was emphatic that her laptop had been the primary driver for change in how she conducted her work. She stressed that her Apple-based technology was more important than having a PC, “Because there’s nothing like a Mac computer, the programs are visually better, they don’t have viruses, they’re quick, they’re lightweight, so I would say a Mac, a laptop probably is the most significant thing that’s happened. Rather than a PC at my desk. I mean that would not at all help me. And as much as you are moving classroom to classroom and doing stuff, and it with the kids and delivering their on-site, a desktop would be an anchor.”

She expressed difficulty with the fact that most education based software is directed toward PC based computers instead of Apple machines, so it leaves her with a problem – does she learn and become comfortable with both platforms, or does she work with administration to

redirect certain roles and requirements to other folks who are PC proficient, such as the testing and assessment software.

Starting with the initial reference point of the mimeograph machine and the typewriter, Glenda indicated that the computer and the internet simultaneously and in tandem have made the greatest impact in her work. Her rationale was simply stated, in that time back previously spent sorting or collating or performing more clerical tasks made the computer and internet access a tremendous resource. Being able to distribute information widely with more wieldy means (electronically vs. manually) was of the most benefit. Being able to attend professional development and webinars saves both time and money, and Glenda was not shy in sharing that the money and time she has to conserve are not benefitted to her by her school or district, but instead she has to make time for them and pay for them herself.

Haley indicated that her iPad has now become a catch-all for many of her technology needs and wants as she performs her counseling duties and if created for that purpose, she can disseminate it through Youtube or email. She has the ability to show that video portably. Prior to the iPad, she indicated that she would have had to haul around heavy video equipment, and through a cumbersome process, upload it and download it to be able to show it.

## Appendix I

### Interview descriptions – Most negative impact

Andrea was very clear that she felt that social media, its rampant increase and its unmonitored status was having an incredibly negative impact on our students, with some of them feeling immune to their words and dialogues with others by means of the internet.

Elaine demonstrated concern over what she viewed as becoming completely dependent on computers and cell phones to govern every moment of our lives. In addition, she was concerned about the ability of adults and school systems to keep up with technology's rapid turnover, and the additional demands placed on adults to manage that continuous learning curve. "With so many people...I think we are moving faster than the technology can keep up...I have never had a quota message as I have had every day in this last year...We're supposed to be going paperless, but I find I am using more paper because I have to have documentation..."

Bridget expressed dismay over the expectation of entitlement to an immediate response due to the nature of electronic communication. Not only does e-mail and other electronic communication add one more venue of response in to the mix of live human contact and phone contact that was already an expectation, but now, email needs to be checked and answered regularly. She also noted that there seemed to be no comprehension about the fact that there was a user at the other end with a human requirement to facilitate the electronic communication (printing transcripts, verifying data, etc.). "So just because I have made an electronic request for a transcript, or emailed a counselor for a recommendation, there is still a person on the other end who may have to print, review, fold, stuff and mail the transcript, or a person who needs to

review grades, extracurricular activities and then actively write the letter of recommendation. Those things do not happen in the span of two minutes from the push of a button.”

Wendy stated that sometimes technology “makes work inescapable”, and that no matter where you are or whatever the situation, technology makes it possible for people to find you are worry you about work. Wendy also indicated that social media seemed to be playing a large part in the disruption of school.

Charles expressed concern about the inappropriate use and progressive abuse of social media for bullying as having the most negative impact on the work of school counseling.

Teri echoed the sentiments of other counselors relative to the misuse of social media, adding that students who held the power of this tool were not being guided properly as to how to utilize and manage the tool.

Tonya is worried about becoming so technology dependent overall in her work and on the part of her school that some people are completely turned out. She is more concerned about those who choose not to engage via technology than those who do not have the means. She indicated that she sees far fewer people who indicate they are unable, but more that refuse to engage at the same level that her school is pressing. Her statement was that of creating a division of culture who know how and don't or won't, in which some people she serves are being left behind.

Monica referred to a specific piece of software called Perfect Matters intended to provide concise data regarding student achievement and risk factors, and that it “is OVERwhelming....I looked at in August, printed out a few things and haven't looked at it since”. When later clarified, Monica stated that this is just an example of another piece of technology provided to

counselors that could be helpful, but with little to no training and no goals set, counselors are left to flap in the wind as to how it should be used and to what end.

Heather sees the most negative impact of technology integration in school counseling as a loss of the human contact piece due to electronic submissions of information. Her concern has a few different threads attached to it. Her first thought in this regard is for counselors to remember the human beings on the other end of the communication being sent or received, to remember that there is a person on the other end of the line and that person has worth and value. The second was for the students who are integrating electronic communication in their day to day life, and who are first not placing human value on that communication, and often texting without forethought for others, but also without regard for themselves or the potential irrevocable damage that could be done.

Angela was absolute that the largest negative impact to school counseling associated with technology stemmed from social media. She estimated that 75 percent of the discipline issues at the school in some major way involve social media, often having started sometime after school the previous day, and then continuing at school, perpetuated by students using social media. She stated that, "...people have always been cruel to each other, but now you can be cruel and everybody in 10 counties knows it. So it's just sort of the impact of what you do is so much broader."

Ginny's perspective on the most harmful piece affecting the work is the lack of resources when expected to be proficient in technology. Her take on the most harmful piece was more of demoralizing school counselors by holding them accountable for being capable and competent with technology pieces that were not being supported through professional development. Her

answer for that particular problem was to offer relevant and meaningful professional development in technology.

Glenda indicated that the most negative impact on her work has come from Social Media, specifically citing incidents with students misusing Facebook and Twitter. She stated that kids hide behind those (Facebook and Twitter) to post ugly others and bully students. Texting was problematic as well and the outside actions carry over into the school building. Her district has those sites blocked, so she is unable to access the social media to see what has happened, making it more difficult to help students.

Haley also pointed toward the misuse of social media as having the primary negative impact in the work of school counseling, and voiced a concern shared by many who work with young people related to the future: “The technology is so quick and for making smart decisions and forward thinking that teens and preteens don’t have, it doesn’t account for that so they make a lot of really silly mistakes because their brains are able to think yet of what this is can do in the future.”

## **Appendix J**

### **Interview descriptions – Recommendations going forward**

Andrea stated that counselors had to act proactively related to technology, because the rapid advances in technology severely outpaced what little training is made available to counselors regarding the use of technology in their work, much less the use of technology overall.

Elaine indicated that it in a perfect situation, all players would be on the same proverbial field, and using the technology infrastructure the same way; that the colleges, even those in the same state system, are not all utilizing technology the same way, which makes it incredibly difficult for counselors to advise and help their students and parents in the process of moving forward. She indicated that somehow, evaluations of students for postsecondary education, conducted by means of technology, need to be a real true evaluation of the person, not just an online profile that contains strict data, but contain more robust elements of that person, and better defines overall work ethic and character.

Bridget also thought that with the difficulty in keeping up with the transitional speed of technology and the ever changing advances, that direct and current training needed to be provided, with constant attention and recommendations for utilization, creating a sort of clearinghouse for technology for counselors.

Wendy stated that ongoing training needed to be implemented, but that finding the time to participate in the training was problematic.

Charles indicated that students and parents have to be taught about proper use and expectations for management of technology, and that the unregulated use and inappropriate

nature of the conversations students were having via social networking was not only distracting in the learning environment, but also detrimental to building a community of students.

Teri recommended that ongoing professional development was paramount, and that a dedicated person to find and marry technology to the work would be the best suggestion.

Tonya recommends making our school resources more open access, where media centers and office pcs would be used to perform school focused tasks for learning, educational engagement and community learning about technology resources. She strongly indicated that counselors need to be better versed in technology to be able to help in any situation.

Monica would like to see one database to access ALL student information. She stated, “It’s frustrating to have multiple login username and passwords to access data. I currently must log into SPAN, NCWise, EVAAS, Blackboard, EASI, AND my email. The passwords expire at different times. Some must have a letter, a symbol and a certain number of characters. Many can’t be reused. With so many databases, I don’t have that many passwords available that I can easily remember.”

Heather would be interested in seeing a mechanism that delivers information on technology usage for school counselors, ranging from discussion on the ethics of technology incorporation and best practices for use of varying technologies including but not limited to email, social media and secure electronic delivery of confidential student information/

Angela’s primary recommendation was finding a way to stay current with technology, as that is the mechanism by which students are accessing information and a mechanism that is being utilized more and more by the community at large. Wishing to stay relevant and current for the benefit of the students, both in terms of being viewed with confidence and seen as competent

was important for Angela She also recognizes that the role technology will play in education and in the personal lives of students will only continue to grow.

Ginny would like to see counselors use and receive adequate training on laptops, as well as other means of portable use and storage. She is proficient with and an advocate for the use of smartboards, and recommends technology investment and training of those for counselors. As a fan of portable video, she thinks it would prove advantageous to use video for modeling and for feedback, particularly in counselor supervision.

Glenda would encourage more forward thinking about technology in relation to school counseling budgets. She looks forward to the day when all students have a tablet, and even though it is somewhat in the works, would still recommend moving toward that goal, ultimately arriving at electronic texts and potentially paperless delivery of information. Her example related to budgets was that they only have two ELMOs in her school building, which she considers not to be a forward thinking use of technology funding.

Haley recommended the development of a mechanism by which counselors stayed on the learning curve and applied technology specifically to counseling, instead of applying technology to counseling in the trailing path of teachers, who may be innovatively using technology, but then the example of usage is set by the teacher, with counselors following suit, not necessarily determining best practices for their own work. She also advocated for more widespread sharing by counselors of innovative technology applications in the field.

## Tables

Table 11

### How Technology Has Changed the Work

How technology has changed the work	#
Data collection	9
More / better productivity	8
Saving time / efficiency	8
Current / relevant info	7
Mobility / portability	7
Wide efficient distribution of info	7
Better / more individual communication	5
Empowered individuality	5
Increased networking / collaboration	5
Increased workload	5
Reduced need for document re-creation	5
Collective, collaborative data and communication	4
Disparity in access - in and out of school	4
"Losing art of conversation", at times complicating issue	3
Data analysis	3
Higher expectations for increased response times	3
Management of large volumes of student data	3
Reduced foot traffic	2
Remote access	2
Varied access points to information (web, email, tablet, etc.)	2
Appearance of promoted isolation	1
Bullying via technology rising	1
Help integrating the National Model	1
Less FTF for counselors (both good and bad)	1
Less FTF for students (both good and bad) - students losing art of conversation	1
Misuse of technology	1
Multiple layers of learning (technology then specific process, i.e., financial aid)	1
Not enough tech to go around – (budget)	1
Reminders	1
Steep learning curve	1
Wide array of apps for student engagement	1

Table 12

## Positive Impacts on School Counseling

Positive Impact	#
Communication	4
Global access to information	3
Portability of technology tools	3
Access to student specific info (SIS)	2
Data storage	1
Data analysis	1
Email	1
LCD	1
Access to policies, procedures, processes	1
Efficiency	1
More access to counselor	1

Table 13

## Negative Impacts on School Counseling

Negative Impact	#
Social Media	7
Lack of training / resources	2
Technology dependence	1
Expedited information	1
Blurred lines of personal and work	1
Technology dependence / leaving non-users out	1
Dehumanization	1

Table 14

## Recommendations by Participants for Future Implementation

Recommendations	#
Direct and current training / best practices	9
Equity in use and access for people in general	2
Community training on social media / technology usage	1
Single student info access point for counselors	1
Promote long range thought about tech implementation	1