THE INTERNET, TECHNOLOGY, AND SOCIAL WORK EDUCATION

by

BRENDAN BEAL

(Under the Direction of Larry Nackerud)

ABSTRACT

The five chapters included in this dissertation are written with the purpose of better understanding the role of modern technological advancements within the teaching and learning process of social work students. Chapter one provides the background and outline of the dissertation as a whole. Chapter two includes a descriptive snapshot of the prevalence of research already conducted on the subject of technology within social work education. This systematic literature review compares the most rigorous studies among the sample and measures technological opportunities within the social work learning environment. Chapter three focuses on the social work student within his or her field placement and whether or not an appropriate level of technological skill is present. This question of critical knowledge is answered by analyzing data from both students and field supervisors. Chapter four explores the factors associated with the use of technology within the teaching and learning process by social work faculty members. Attitudes and barriers to adoption are discussed. Chapter five concludes with a summary of findings, arguments on the larger topic of academic publishing, and the technology adoption process is described using Rogers' Diffusion of Innovations theory.

INDEX WORDS: Internet, Technology, Online, Social work education, MSW, BSW, Diffusion of innovation, Future of social welfare, Scholarship of teaching and learning, Attitude, Barriers

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BS, Florida State University, 2004

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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2016

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DEDICATION

This dissertation is dedicated to the many friends, family, and colleagues who guided me along this hazardous path through PhD Land. Whoever wants to come after me, I wish a less treacherous adventure.

ACKNOWLEDGEMENTS

I owe a debt of gratitude (and, indeed, a debt of money in certain cases) to the many individuals who helped me through this doctoral program. I would be hard pressed to name everyone but I do want to acknowledge the people below:

To my original committee, Dr. Stacey Kolomer, Dr. Betsy Vonk, Dr. Shari Miller, Dr. Brian Bride, and Dr. Sherry Clouser—you are fine people and academics and it was truly my pleasure to have worked with you all. Thanks for starting me off right, even if I did stumble.

To my current committee, Dr. Larry Nackerud, Dr. Jennifer Elkins, and Dr. David Okech—thank you for picking up the pieces of my fractured dissertation. I wouldn't have come back if it weren't for Dr. Elkins and I wouldn't have finished within my lifetime if it weren't for Dr. Nackerud. You are great people and I am better for knowing you.

To my original cohort—you are all wonderful people! You have forever changed my life. I loved every class, every video, and every buzz* that Dr. DeWeaver threw our way. I look forward to seeing you roughly twice a year in various cities throughout America.

To Gabe and Shirin: father and mother of Cyrus and Kai—you were all there for me every week when I needed to hang out or eat dinner. Having you here in Athens as former landlords and current loved ones has helped get me through this god-awful doctoral process. Thank you immensely.

To the Ram Fam—Keith Wenrich, your recreational sports facility allowed me an outlet that kept me sane. Thanks for having a place to climb, box, and help me develop my teaching skills.

To Jacquelyn—my first friend here. My first roommate. I'm sorry I crashed your bike but I'm happy to have been born in the same two week period as you (remember, I'm older). To the smartest kid on the block and to the second greatest social worker I've ever met.

To Athens—you are a town of towns and I hope to see you again!

To Mom and Dad—I couldn't be here if it were not for your love and devotion. I wouldn't even have made it through my last degree, much less this program if you hadn't cared so much about me. I thank you for your love and I thank you for your generosity. You are the reason I can spend my days pondering about life and teaching kickboxing.

And finally to Meredith—you didn’t mention me in your thesis so I am not mentioning you in mine.

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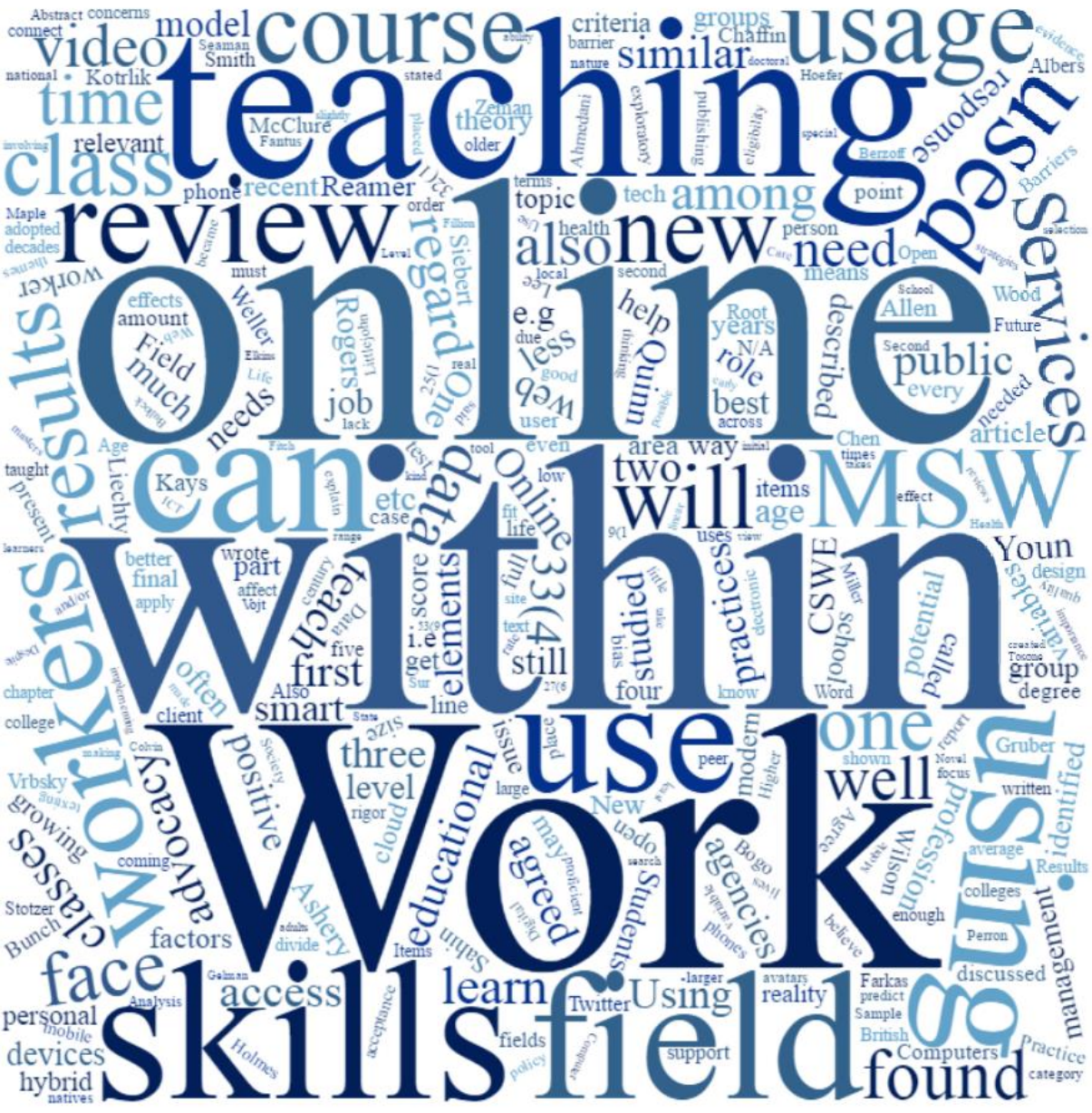

Figure 1. A word cloud (or tag cloud) of entire dissertation. This is a visual representation of all text within the document. The most important or most prominent words are shown largest.

CHAPTER 1

INTRODUCTION

> The dawn of the information age is behind us. But don't get too excited: it's still morning, and there's a long way to go before lunch.
>
> –Steven M. Schneider, Professor, SUNY Institute of Technology

Technology, although ubiquitous in today's modern society, holds within it untapped potential and unforeseen uses. The world has witnessed an explosion of technological advances, most notably during the past three decades. These include the availability of home computing, portable devices such as smart phones, and, of course, development of the Internet. This latter advancement can be compared to previous inventions such as the airplane or the telephone with regard to how it revolutionized people's lives. Liechty (2012) stated that the "continuing and developing presence of technology in our lives is a social fact" (p. 343). These additions to the digital world we live in today have been called information and communication technologies, hypertechnology, web 2.0, and a dozen other terms. These innovations are used by people everywhere in their daily lives, including by social workers and social work students. Regardless of the perceptions concerning the positive or negative aspects of the ever increasing tech juggernaut, these innovations are shaping the way humans live. One area it is shaping the most lies within how we educate the population. For the purposes of this dissertation, how we educate within departments of social work.

The impact of technologies within education has been studied across different programs at colleges and universities. The majority of research studies report positive results pertaining to

technology outcomes in the class (Bettman, Thompson, Padykula, & Berzoff, 2009; Brill & Galloway, 2007; Carle, Jaffee, & Miller 2009) and it has been shown that technology can support student learning in the educational process (Saunders & Klemming, 2003; Vannatta, Beyerbach, & Walsh, 2001). These positive results refer to such outcomes as student engagement, achievement, and retention of knowledge; and the presence of technology within the teaching and learning process is evident in social work programs around the world. Aside from helping facilitate classroom instruction, engaging in the use of technology is becoming overwhelmingly necessary within the practice of social work (Mishna, Bogo, Root, & Fantus, 2014). This detail raises a question concerning social work faculty use of technology and whether or not the modeling of these modern skills is essential for future social workers.

Format and Purpose of the Dissertation

This dissertation is structured using a three article model (a.k.a. three-paper) Chapter one will introduce the relevant concepts, problems, and research questions pertaining to the dissertation as a whole. Chapters two, three, and four are to be considered distinct research studies in their own right and are written with the intention of submitting them to three separate peer reviewed journals. Although they feature a common subject and are linked thematically, they are discrete articles. In this way, future publication of the materials has been streamlined and will be more straightforward. Each chapter will be presented with its own introduction, review of the literature, overview of study methods, results, discussion, and list of references. A final concluding fifth chapter is presented integrating all three research studies and includes conclusions and implications of the entire dissertation.

The purpose of chapter two is to systematically review the recent literature concerning technology and social work education. Chapter three attempts to answer questions surrounding

whether or not BSW and MSW students are entering their field placements with enough knowledge about technology and how to apply it within their agencies. Chapter four explores the relationship between social work faculty's attitude toward technology and whether or not they are adopting technology within the teaching and learning process. Data from a qualitative perspective were also gathered and analyzed concerning themes of why or why not faculty are using technology in classes and what place technology has within the curriculum and broader field of social work. The approval of the institutional review board for research at the University of Georgia was granted prior to all human subjects' data collection.

The purpose of this dissertation is to inquire scientifically into the questions concerning the Internet and other technologies and the role of social work education in implementing these into the curriculum; and also investigate some of the future needs of the field and how social work students might better serve their communities by using modern innovations.

Theoretical Background

The Diffusion of Innovation is a theory that helps describe why certain innovations are adopted (Rogers, 2003). The theory posits that certain attributes pertaining to the actual technology have an effect on the adoption rate. These attributes include perceptions of the potential advantages, the compatibility of it within a person's life, or the complexity of the given technology. In an example of how this theory has been applied within social work, Bride, Abraham, and Roman (2010) incorporated diffusion into their study on substance abuse counselors' knowledge and acceptance of innovative treatments. Using the theory, the authors researched how new information was disseminated among counselors and what factors contributed to the adoption of new techniques. The data from the study indicated that alternative

dissemination strategies would have been helpful to the diffusion process. This example could apply to another organization, faculty within a social work program.

Overview of the Articles

Chapter Two: Systematic Literature Review

During the past few decades, literature reviews regarding technology within certain aspects of social work education have been published. None, however, focus on the most recent five years of technology literature. This time frame is important as it encompasses the proliferation of many significant developments within social work education, including wide spread use of distance education, social networking (e.g. Facebook, Twitter, etc.), and the debate about ethical concerns regarding social workers and their online presence. A recent methodology was needed in order to explain the state of technology and social work education.

The purpose of chapter two is to demonstrate a systematic review of the most current literature on social work education and technology. According to the PRISMA (Preferred Reporting Items for Systematic review and Meta-Analysis) statement, a systematic review attempts to "collate all relevant evidence that fits pre-specified eligibility criteria to answer a specific research question" (Shamseer et al., 2015, p. 3). This review identified the most commonly studied technologies within social work education, the relevant elements published in the results, the rigor of the studies in question, the gaps present, and measured the opportunities for technology to influence the teaching and learning process within social work programs. This research study also answers questions pertaining to how social work compares to similar fields with respect to the abundance of literature.

Chapter Three: Technology Skills among BSW and MSW Students within Field Practicum

The main goal of social work education is to prepare students for the challenges of social work practice (O'Connor, Cecil & Boudioni, 2009). Modern practice methods can include proficiency in word processors, computer documentation, and various electronic communications (Youn, 2007); as well as more advanced practices such as administering online counseling or cyber-therapy, and using other emerging technologies (Reamer, 2013). Social work students step into the role of practitioner with the signature pedagogy, the field practicum and this is often where students receive their first assessment regarding technology skill. Technology in general has a growing role among the skills a social worker must possess (Dombo, Kays, & Weller, 2014), so it is important to know whether or not students are coming into placements with enough critical knowledge about technology, and where they learn these skills.

The purpose of chapter three is to explore the technology needs of local social service agencies and whether or not social work students are fulfilling them. Missed opportunities regarding technology are also explored. The research questions addressed include:

1. What are the technology needs of local agencies?
2. Are these needs being fulfilled by the social work students placed within these agencies?
3. Where do the students learn these technology skills?
4. Are there more opportunities for utilizing technology skills within these placements?
5. What is the relationship between technology usage, attitudes, and age and gender?

Chapter Four: Social Work Faculty and Their Relationship with Technology

The teaching and learning process of social work students has changed over the previous decades (Dennison, Gruber, and Vrbsky, 2010) and advanced technology is one of the factors that contributed to this transformation. Although social work programs use innovations such as web assisted instruction or connect via social media with students, some research studies suggest that social work educators are using technology at a low to moderate level (Buquoi, McClure, Kotrlik, Machtmes, & Bunch, 2013). Understanding more about the reasoning behind why social work faculty adopt or reject technology in the teaching and learning process is an important factor within social work education.

The purpose of chapter four is to investigate the usage and perceptions of technology by social work faculty. Quantitative data were analyzed to learn more about how these variables interact and impact the teaching and learning process. The research questions included:

1. How prevalent is faculty usage of technology?
2. What are faculty attitudes towards technology?
3. What are faculty perceptions of barriers toward the use of technology?
4. Is there a significant relationship between attitudes and usage?
5. Is there a significant relationship between faculty barriers and their usage?
6. Does age predict attitude or usage?

The significance of this research study has to do with the ability to determine what contributes to a social work faculty member's adoption of technology within the teaching and learning process. Previous literature reported that this involves factors including instructor attitude (Li, 2005), certain barriers such as institutional buy-in (Sahin & Thompson, 2006), or

whether or not a faculty member can do hands on experimentation with the technology (Sahin & Thompson, 2007).

All three research studies examine new technologies affecting the education and profession of social work. Questions concerning technology best practices for faculty and field are discussed and several conclusive arguments are reported. Diffusion is also described as helpful in identifying adoption levels, strategies for teaching with technology, and plans for expanding innovative education. This dissertation contributes to the literature on the Internet, technology within social work, distance education, technology barriers, technology promoters, and social work program technology plans or missions.

References

Bettman, J., Thompson, K., Padykula, N., & Berzoff, J. (2009). Innovations in doctoral education: Distance education methodology applied. Journal of Teaching in Social Work, 29(3), 291-312. doi:10.1080/08841230903018397

Bride, B. E., Abraham, A. J., & Roman, P. M. (2010). Diffusion of contingency management and attitudes regarding its effectiveness and acceptability. Substance Abuse, 31(3), 127-135. doi:10.1080/08897077.2010.495310

Brill, J. M., & Galloway, C. (2007). Perils and promises: University instructors' integration of technology in classroom-based practices. British Journal of Educational Technology, 38(1), 95-105. doi:10.1111/j.1467-8535.2006.00601.x

Buquoi, B., McClure, C., Kotrlik, J. W., Machtmes, K., & Bunch, J. C. (2013). A national research survey of technology use in the BSW teaching and learning process. *Journal of Teaching in Social Work, 33*(4), 481-495. doi:10.1080/08841233.2013.833577

Carle, A. C., Jaffee, D., & Miller, D. (2009). Engaging college science students and changing

academic achievement with technology: A quasi-experimental preliminary investigation. Computers & Education, 52(2), 376-380. doi:10.1016/j.compedu.2008.09.005

Dennison, S. T., Gruber, K. J., & Vrbsky, L. (2010). Research literature review on social work education instructional methods: 1998-2008. *Journal of Teaching in Social Work, 30*(4), 399-419. doi:10.1080/08841233.2010.517732

Dombo, E. A., Kays, L., & Weller, K. (2014). Clinical social work practice and technology: Personal, practical, regulatory, and ethical considerations for the twenty-first century. *Social Work in Health Care, 53*(9), 900-919. doi:10.1080/00981389.2014.948585

Li, Q. (2005). Infusing technology into a mathematics methods course: Any impact? Educational Research, 47(2), 217.

Liechty, D. (2012). Technology, consciousness, and the transitional symbolic self: Implications for social work education. Journal of Teaching in Social Work, 32, 342-355.

Mishna, F., Bogo, M., Root, J., & Fantus, S. (2014). Here to stay: Cyber communication as a complement in social work practice. Families in Society, 95(3), 179-186. doi:10.1606/1044-3894.2014.95.23

O'Connor, L., Cecil, B., & Boudioni, M. (2009). Preparing for practice: An evaluation of an undergraduate social work 'preparation for practice' module. *Social Work Education, 28*(4), 436-454. doi:10.1080/02615470701634311

Reamer, F. G. (2013). Distance and online social work education: Novel ethical challenges. *Journal of Teaching in Social Work, 33*(4), 369-384. doi:10.1080/08841233.2013.828669

Sahin, I., & Thompson, A. (2006). Using Rogers' theory to interpret instructional computer use by COE faculty. Journal of Research on Technology in Education, 39(1), 81-104.

Sahin, I., & Thompson, A. (2007). Analysis of Predictive Factors That Influence Faculty

Members' Technology Adoption Level. Journal of Technology and Teacher Education (2007) 15(2), 167-190.

Saunders, G., & Klemming, F. (2003). Integrating technology into a traditional learning environment. Active Learning in Higher Education, 4(1), 74–86.

Shamseer, L., Moher, D., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., . . . Stewart, L. A. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: Elaboration and explanation. *BMJ (Clinical Research Ed.), 349*, g7647-g7647. doi:10.1136/bmj.g7647

Vannatta, R., Beyerbach, B., & Walsh, C. (2001). From teaching technology to using technology to enhance student learning: Preservice teachers' changing perceptions of technology infusion. Journal of Technology and Teacher Education, 9(1), 105–127.

Youn, E. (2007). The relationship between technology content in a masters of social work curriculum and technology use in social work practice a qualitative research study. *Journal of Technology in Human Services, 25*(1), 45-58.

CHAPTER 2

SOCIAL WORK EDUCATION AND TECHNOLOGY: A SYSTEMATIC REVIEW OF THE LITERATURE[1]

[1]Beal, B. G. To be submitted to *Journal of Teaching in Social Work.*

Abstract

The impact of information and communication technology on social work education continues to be a burgeoning area of study. These technologies influence social relationships, learning styles, and who has access to an education; and their absence within the teaching and learning process can affect the competitiveness of a social work program. This systematic review of the literature identified research studies to answer questions concerning the rigor of those studies, a comparison to literature in similar fields, and measured opportunities for technology to influence the teaching and learning process within social work programs. Summarized results of 132 articles from the previous five years indicate that educators should include more discussion and/or usage of technology in the teaching and learning process with regard to ethical considerations in the field, client advocacy, and agency process.

Figure 2.1. Word cloud of full text, Chapter 2.

Introduction

Social work education has been influenced by technology in both the content of classes and the location of those classes (Dennison, Gruber, & Vrbsky, 2010). Social work practice is also feeling the presence of new innovations and among the skills a social worker must possess, technology has a growing role (Dombo, Kays, & Weller, 2014). Overall, inquiry into how technology is shaping the way social workers practice, and learn how to practice, is essential. Technology can affect access to education, social relationships, and learning styles (Ahmedani, Harold, Fitton, & Gibson, 2011).

The word technology is used without standards across the literature. These technologies that social work researchers study are manifold, and are called different names. Information and communication technology comprises the innovations that communicate and gather information. Hypertechnology (Wise, 1997; Liechty, 2012) is the most general designation and can be described as all of the technological advances in recent history. Web 2.0 (Edwards & Hoefer, 2010) is more specifically concerned with web-based advances such as social networking (e.g. Facebook, Twitter, etc.). New media (Young, 2015) applies to modern technological-aided reading, watching, or listening. A list of these terms and some of the most recent innovations is included in table 2.1. Regardless of what scholars call it, these technologies are influencing future social workers in how they learn and how they practice.

This research study focuses on the teaching and learning environment of social work programs. This includes the class environment, field education, and other places where students learn to become social workers. Academic research on social work includes technology, but for the purposes of this systematic literature review, research practices were not primary variables.

Table 2.1

Technology Terms and Definitions

Technology Term	**Definition**
Information & communication technology (ICT)	Includes all electronic delivery systems such as the Internet, radios, televisions, and computer-aided devices that can connect to wi-fi or other frequency (Fu, 2013)
Hypertechnology	Includes newest developments with technology in general (e.g. connection to our smart devices, virtual reality, and the proliferation of the vast Internet; Liechty, 2012)
Web 2.0	The second generation of web site enhancements that include video posts, blogs, podcasts, wikis, etc; also more generally known as social media or social networking (Edwards & Hoefer, 2010)
New media	Typically refers to the media accessed via modern ICT and using Web 2.0 (e.g. news on Twitter, Facebook, etc.); denotes a more interactive environment compared to classic television or radio (Young, 2015)
Cloud computing	Can be described as "the software applications or other resources that exist online and are available to multiple users via the Internet, rather than being installed on a particular user's local computer" (Behrend, Wiebe, London, & Johnson, 2011, p. 231).
Flipped classroom	Using online resources (e.g. video posts, podcasts, etc.), students view lectures and more traditional content outside of class, while reserving face to face time for collaborative work (Holmes, Tracy, Painter, Oestreich, & Park, 2015)

Technology Term	Definition
Mobile	Usually involving any device that can compute or connect to the Internet but not be tethered; includes iPads and other tablets, smart phones, and other personal devices (Glackin, Rodenhiser, & Herzog, 2014)
Hybrid	Typically referring to a course that uses both in-class teaching and online elements; also called blended learning (Hash & Tower, 2010)
Distance learning	Either synchronous or asynchronous learning that is separated by geographic distance; involves online course elements and/or video conferencing (Cummings, Foels, & Chaffin, 2013)
Online education	Involves learning with web-based platforms, digital audio/video, group chats, or avatar assisted learning (Kurzman, 2013)
Virtual learning environments	Online communities that facilitate learning and communication (Lee, 2014); includes course management systems (e.g. Blackboard), immersive environments with avatars (e.g. Second Life), or virtual or augmented reality (e.g. Oculus Rift, Vive, etc.)
Audience response systems	Allows a person to quickly and easily use a clicker or smart phone to digitally respond to questions presented to an audience (Quinn, 2010)
Geographic Information Systems (GIS)	A collection of computer hardware, software, and geographic data designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information (ESRI, 1992)

It has been shown that technology can support student learning in the educational process with regard to outcomes such as student engagement, achievement, and retention of knowledge

(Beyerbach, Walsh, & Vannatta, 2001; Saunders & Klemming, 2003). The impact of educational technologies have been studied across different programs at multiple colleges and universities (Cummings, Foels, & Chaffin 2013; Saleh, 2008; Zdravkova, Ivanović, & Putnik, 2012). There are studies that report technology's place in higher education in a positive light (Bettman, Thompson, Padykula, & Berzoff, 2009; Brill & Galloway, 2007; Carle, Jaffee, & Miller 2009) as well as studies that illustrate major limitations of technology (Perron, Taylor, Glass, & Margerum-Leys, 2010; Schmid et al., 2009).

The current usage of technology within social work education is expanding. As of 2015, there were 35 online MSW programs listed by the CSWE (2015). Estimates of 87% of BSW faculty are using online elements such as course management systems (Buquoi, McClure, Kotrlik, Machtmes, & Bunch, 2013). Specific applications include demonstrating classic family problems with an online virtual community (West, 2008) or using online lectures and learning communities to promote student learning within clinical social work courses (Holmes et al., 2015). Also, Second Life, an online virtual world, has been used to simulate client contact with social work interns (Wilson, Brown, Wood, & Farkas, 2013) and more virtual-based techniques (e.g. avatars, online discussion groups, etc.) are used within courses more frequently (Anstadt, Bradley, Burnette, & Medley, 2013; Levine & Adams, 2013; Williams-Gray, 2014). These examples are a part of the recent push by deans, administrators, and faculty to deliver more distance education (Stotzer, Fujikawa, Sur, & Arnsberger, 2013) and social work education is "faced with the challenges and pressures of staying current with these new developments" (Colvin & Bullock, 2014, p. 497).

Distance Education and Hybrid Learning

One of the most important applications of technology in the teaching and learning process relates to distance education and other online learning hybrids. This area has the most robust body of literature concerning technology in higher education and some experts conclude that institutions ignore it at their folly (Smith, 2009). One definition of distance education from the federal government describes it as a separation of the instructor and student in time and/or place (Hylton & Albers, 2007). Chen (2009) reported on estimates regarding the very largest colleges and universities and their nearly unanimous offerings of online distance courses. Allen and Seaman (2007) studied all institutions of higher education and reported that nearly two-thirds "currently have some form of online course or program offerings" (p. 133). They go on to state that 3.2 million students took at least one online course during the fall 2005 school term; a trend that is growing and that school administrators are aware of when developing their program curricula.

The benefits of teaching online are enticing to schools and the ability to offer classes that fit certain students' pace, location, and learning style all contribute to their adoption. In one study that measured student learning effectiveness online, Fillion, Limayem, Laferriere, and Mantha (2009) found that there was not a significant difference in a student's increase in critical thinking skills, analysis of issues, or understanding of basic concepts in online courses when compared to the in-class counterpart. This finding is mirrored by other studies (Bellefeuille, 2006; Bettman, Thompson, Padykula, & Berzoff, 2009; Lionarakis & Papademetriou, 2003); and student satisfaction of online offerings appears to be very positive as well (Allen & Seaman, 2007; Roberts-deGennaro & Clapp, 2005; Woehle & Quinn, 2009).

However, there is research to suggest that distance learning experiences are not always positive. Online courses are not always a good match for every student (Milam, Voorhees, & Bedard-Voorhees, 2004) and as Allen and Seaman (2007) report, "students require more discipline to complete online courses" (p. 137-138). Also, there are pitfalls and obstacles associated with developing an online class. These include updating current computer software, solving technical problems on the fly, and the large amount of time it takes to plan out every detail of the course (Siebert & Spaulding-Givens, 2006). These obstacles can contribute to negative learning outcomes including a lack of cohesive community environment (Hylton & Albers, 2007), worse student academic performances (Fillion et al., 2009), or overall uneasiness and lack of acceptance by the instructor teaching the class (Allen & Seaman, 2007).

This last point brings up an important concept in online learning; if the instructor of the class is inexperienced, then the success of the class could be in jeopardy. Miller and Lu (2003) wrote that the "responsibility for ensuring [online course] academic integrity falls almost exclusively on the college faculty member" (p. 167). Choosing the right instructor is imperative and Faria and Perry-Burney (2002) brought up this point in their study on a graduate course that used interactive television. They found that even if a faculty member is young, technologically proficient, and eager to teach an online course, that doesn't necessarily ensure success. The elements of an exceptional online instructor are very similar to the elements embodied by his or her traditional counterpart—someone who engages students well (Royse, 2001). In addition to qualified instructors, proper evaluation of an online course is important as well (Milam, Voorhees, & Bedard-Voorhees, 2004). This component is often the most difficult, however, due to the challenging nature of measuring a student's true learning outcome (Siebert & Spaulding-Givens, 2006). This point is especially valid when considering Fink's (2003) taxonomy of

significant learning and its multiple dimensions. Foundational knowledge is usually easier to measure than application or integration skills. Despite these limitations, schools are still forging ahead and providing more Internet-based instruction for students every semester. Allen and Seaman's (2007) assessment of online learning was that it was critical to a school's long term strategy. The research on this area of higher education is compelling and most instructors will see distance programs within their school if they have not already.

There is another kind of course that bridges the gap between face to face courses and distance education. Hybrid learning is sometimes considered the best of both worlds because it provides students with all the conveniences of online learning in addition to the traditional, face to face classroom experience (Allen & Seamen, 2010; Arispea & Blake, 2012). In this blended learning format, students can meet in class as well as synchronously (i.e. same time) or asynchronously (i.e. separate times) outside of class. These outside meetings might take advantage of interactive television, course management systems like Blackboard, or online virtual settings such as Second Life or GoToMeeting.com. The benefits of this format include the community atmosphere fostered during in-class meetings along with the conveniences of an online course. If certain assignments or activities work best face to face or online, then the option to do this is available and the instructor is able to design class methods around the best educational fit. The course schedule can vary with these classes but one structure offered at the University of Georgia is a Teaching with Technology graduate course (Clouser, 2011) that delivers online content for one-quarter of the semester and meets in a classroom during the other three-quarters.

The challenges of a hybrid class involve the amount of extra work associated with it for the person teaching it. The instructor must design a class in the traditional sense as well as the

online format. Also, the students can get overwhelmed more easily with the various methods. If a class is meeting traditionally for the first half of a semester, it might be harder for students to suddenly get used to meeting online during the second half of the semester. This could translate into difficulties for both students and instructors. Zeman and Swanke (2008) described similar difficulties reporting that one instructor and graduate assistant "estimated that they each spent approximately 20 hours a week just responding to student emails" (p. 610). In their article that compared distance learners and campus-based learners, Hylton and Albers (2007) noted that students attempting to meet during online sessions may experience technical difficulties. These difficulties were exacerbated if the meetings were supposed to be synchronous and at specific times. Students can have trouble with Internet connection, microphone or camera issues, and other problems. Nevertheless, these hybrid classes appear to show the most promise with regard to incorporating technology into education.

Purpose and Rationale

The issue of technology in social work education is parallel to the new innovations in the field of social work. More technological developments within social work practice are requiring special knowledge of new BSWs and MSWs (Dombo, Kays, & Weller, 2014), and there is evidence that not engaging online is no longer possible for practices or organizations (Mishna, Bogo, Root, & Fantus, 2014). Also, digital exclusion (i.e. denial of access to the Internet and other digital technologies) can impact traditional clients of social workers and is a concept garnering more consideration among the profession (Watling, 2012). This digital divide is an advocacy issue similar to social exclusion. It has been shown that attitudes and knowledge of Internet broadband use are associated with willingness to engage in broadband advocacy and other political aspects (Kuilema, 2013). These technologies will become a major part of future

social work practice. Therefore, in order to solve the social justice problems of the future, social work programs need to teach more technology skills to students.

There are limitations and concerns reported in the literature about technology in the social work teaching and learning process. There is a negative bias toward technology in its ability to help facilitate practice areas that traditionally depend on face-to-face interaction (Ashery, 2001). This bias can be understood in terms of if a social worker wants to learn how to communicate with a client in person, he or she should not practice these interactions strictly online. Reamer (2013) discussed ethical concerns with regard to social work in the digital age, including competence of practitioners, boundaries within new online relationships, and privacy issues. Even though these limitations of using technology exist, the benefit to social work education is still present and best practices when using these technologies should be studied.

Overall, there are missed opportunities that could benefit the educational process of social workers (Buquoi, et al. 2013; Shorkey & Uebel, 2014). When compared to other departments such as engineering or business, technology has been used sparingly (Margaryan, Littlejohn, & Vojt, 2011). Social work educators have been considered apprehensive in teaching clinical skills online (Ashery, 2001; Wilson, Brown, Wood, & Farkas, 2013) and were late to adopt distance education (Siebert, Siebert, & Spaulding-Givens, 2006). It has even been suggested that the absence of these advances can affect the competitiveness of social work programs because student preferences and learning styles are shifting (Ahmedani, et al., 2011). A decade ago, Beaulaurier and Radisch (2005) believed that very little was written about incorporating computerization into the social work curriculum. They wrote that “work need[ed] to be done to bring computer innovations and technologies into line with the...curriculum” (p. 142). More recently, Perron et al. (2010) argued for a higher level of attention to be paid to

information and communication technologies within social work. Although articles are published every year on the subject, these calls for more research on technology highlight the great opportunity scholars have to help fill this knowledge gap.

The purpose of this research study is to demonstrate a systematic review of the most current literature on social work education and technology. According to the PRISMA (Preferred Reporting Items for Systematic review and Meta-Analysis) statement, a systematic review attempts to "collate all relevant evidence that fits pre-specified eligibility criteria to answer a specific research question" (Shamseer et al., 2015, p. 3.). In line with the work of Dennison et al. (2010), this current systematic literature review identified the most commonly studied technologies within social work education, the relevant elements published in the results, the rigor of the studies in question, the gaps present, and measured the opportunities for technology to influence the teaching and learning process within social work programs. This research study also answers questions pertaining to how social work compares to similar fields with respect to the abundance of literature. There have been other social work education based literature reviews that featured specific technologies such as web-based learning environments (Regan & Youn, 2008) or certain populations such as older adults (Blaschke, Freddolino, & Mullen, 2009); but none were recent or featured a focus on technology within social work education in general. This present research study is proposed as a unique and comprehensive systematic literature review of technology use within social work education.

Methods

The methods of this research study are constructed for the purpose of learning more about the literature pertaining to technology in the social work educational process. The PRISMA statement was primarily used to guide the methods for this systematic literature review. This

article's PRISMA registration is currently being submitted. PRISMA's checklist of 17 items includes steps related to study rationale, reporting research bias, eligibility criteria, and analyses (Shamseer et al., 2015). The protocols and methods included in the PRISMA statement help ensure the reduction of duplication of efforts and it "prevents arbitrary decision making with respect to inclusion criteria and extraction of data" (Shamseer et al., 2015, p. 1). The review at hand was planned methodically and the research protocols are in line with emerging journal trends to enable reproducibility. In lieu of the PRISMA flow diagram (2009), a list of steps relating to literature identification, screening, and eligibility follows.

Research studies included in this review were published in peer reviewed journals, between the years 2010 and 2015, and were related to technology in the social work student educational process. This selection process was conducted to ensure the most inclusive method of gathering academic studies on technology and how it intersects with social work education. Specifically, the studies included in the review met the following criteria:

1. Published between January 2010 and December 2015.
2. Published in a peer reviewed journal.
3. Include research on a type of technology.
4. Related to some part of the BSW or MSW teaching and learning process.
5. Accessible online.
6. Published in English.

Using the university's online library multi-search, 11 databases were designated as relating to the topic. These databases included Academic Search Complete, Education Research complete, Educational Administration Abstracts, ERIC, Information Science & Technology Abstracts (ISTA), Library, Information Science & Technology Abstracts, PsychINFO, Science & Technology Collection, Social Work Abstracts, SocINDEX with Full Text, and Sociological Collection.

These search terms were used in a Boolean phrase format:

"social work*"

AND

educat* OR instruction OR pedagog* OR teach*

AND

technolog* OR online OR "social media" OR twitter OR facebook OR mobile OR internet OR virtual OR simulat* OR tablet OR tele* OR smart

The initial search with the above criteria yielded 3,444 results. After eliminating duplicates, there were 2,155 total results. Using strict eligibility criteria, a team of PhD students read through every abstract to exclude the articles clearly not studying the undergraduate or graduate social work teaching and learning process; or studies not prominently featuring at least one technology within the text. The risk of selection bias was mitigated by using a very broad inclusion philosophy at first and then delving into the main body of the article (i.e. past the abstract) if further eligibility requirements were needed. Every article reached a conclusion consensus and after this initial cull there were 149 results. Articles were excluded if they were not accessible online. The final sample size was $n = 132$. An Excel spreadsheet of the results was created to aid in analysis (a bibliography of all reviewed studies is available from the author).

In line with PRISMA, a narrative synthesis of the results and a comparison to other fields is provided. The gathered data included analyses related to ratio statistics and differences of means within group. Specifically, the sample of articles compared the most scientifically rigorous studies within that group.

The chronological scope (i.e. 2010-2015) of this systematic literature review is recent due to the fast paced nature of technology. As an example of a contemporary development, online

social networking through Facebook gained popularity during the decade leading up to the range of this literature review (Wikipedia, 2015). Another example includes the fact that the first online MSW program was offered by Florida State University beginning in 2002 (Cummings, Foels, & Chaffin, 2013) and preliminary results of that program were published in 2006 (Siebert, Siebert, & Spaulding-Givens, 2006). Therefore, most online programs within social work have published significant results during the range of years covered by this systematic review.

PRISMA suggests that systematic reviews outline the risk of meta-bias (Shamseer et al., 2015). This bias includes factors that influence the confidence in the resulting body of evidence representing a full population of related studies. Given the specificity of the topic (i.e. social work and education and technology), it was anticipated that there would be little publication bias since there are very few journals in which scholars publish on this topic. That is, the eleven databases searched with the above criteria would yield most results of the full population. In addition to the other limitations, none of the "gray literature", or unpublished research, was included in the final selection of studies; and only studies written in English were included in the final sample.

Results

Three elements were identified to compare between the final sample (n = 132) of studies:

1. Degree level (BSW, MSW, or both).
2. Sample size.
3. Technology included within study.
4. Issue or content as related to social work education.

Degree Level

Of the studies that explicitly mention a degree level (n = 91), nearly half researched MSW courses, one-third researched BSW courses, and one-fifth covered both.

Sample Size

Of the studies that explicitly report it (n = 55), the average sample size was 67. Approximately 50% studied an MSW program only, 30% studied a BSW program only, and 20% indicate both programs.

Technology Studied

All studies critically discussed at least one kind of technology (n = 132). Some technologies included among the studies were the Internet (89%), distance education (23%), online social media or networking (12%), virtual learning environments (10%), and audience response systems (4%).

Social Work Issue or Content Studied

Most studies (n = 111) mentioned specific social work issues or class content. Figure 2.2 outlines the percentage of studies covering specific technologies or social work issues. 23% of the studies in question were related to distance education and 89% were related to the Internet. Among the most quantitatively empirical studies, 13 out of 15 accounted for comparisons between online and traditional learning. Nearly 10% of the total sample size of articles dealt with social media or social networking web sites.

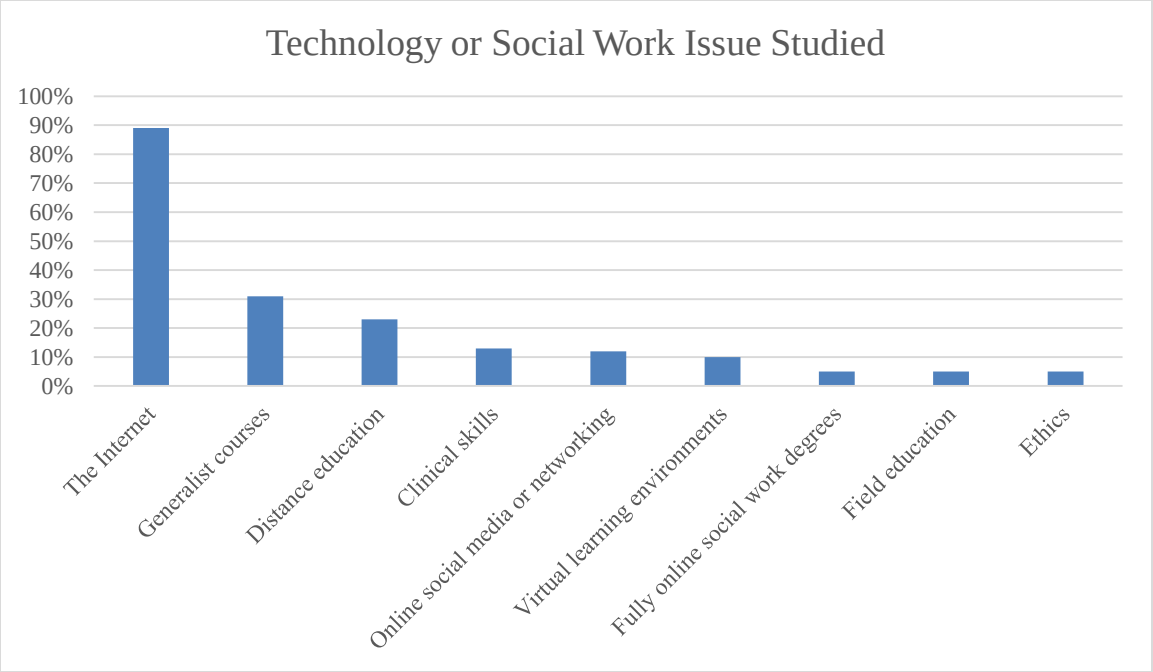

Figure 2.2. Percentage of studies that included a specific technology or social work issue.

For the purpose of this review a subset of articles were identified that qualified as the most empirical within the full sample. Similar to Blaschke, Freddolino, and Mullen's literature review (2009), the special selection here emphasized very empirical reports. The criteria for this quasi-experimental category was that the study had to feature a comparison of at least two groups. The results yielded fifteen, or 11% of all studies that fit into this category. Among those, 87% compared distance learning or online class elements to face to face instruction.

Table 2.2

Special Selection of Group Comparison Studies (n = 15)

Reference	Degree level	Technology studied	Learning outcome and sample size
Aguirre & Mitschke (2011)	Both	Virtual learning environment	Satisfaction & frequency of use (*n*=71)
Baldridge, McAdams, Reed, & Moran (2013)	BSW	Mobile devices & Facebook	Satisfaction & grasp of content (*n*=116)
Buchanan & Mathews (2013)	Both	Distance education	Kirk-Rosenblatt Research Inventory, (*n*=123)
Cummings, Chaffin, & Cockerham (2015)	MSW	Distance education	Grades, skills tests, satisfaction (*n*=345)
Cummings, Foels, & Chaffin (2013)	MSW	Distance education	Leadership skills, exams, student evaluations (*n* = 100)
Forte & Root (2011)	Both	Distance & interactive TV	Grades & knowledge (*n*=76)
Huerta-Wong & Schoech (2010)	BSW	Virtual learning environment	Satisfaction, perception, & listening skills (*n*=138)
Lawrence & Abel (2013)	MSW	Online	Clinical assessment test (*n*=102)
Lee (2014)	MSW	Virtual learning environment	Perceived learning exercise (*n*=47)

Reference	Degree level	Technology studied	Learning outcome and sample size
Lee, Brown, & Bertera (2010)	MSW	Online & discussion forum	Diversity values, skills, & knowledge (*n*=191)
McAllister (2013)	BSW	Online	Grades & satisfaction
Okech, Barner, Segoshi, & Carney (2014)	MSW	Online	Satisfaction (*n*=66)
Oliaro & Trotter (2010)	BSW	Distance education	Grades & satisfaction (*n*=117)
O'Neill & Jensen (2014)	BSW	Distance education	Grades (*n*=44)
Stotzer, Fujikawa, Sur, & Arnsberger (2013)	MSW	Distance education	Cost analysis comparison

Comparison to Similar Fields

The amount of literature on technology in social work education was compared to the similar fields of nursing and higher education. Using the exact same databases and search criteria, the keyword search terms were changed from "social work*" to "nurs*" and also to "higher ed*". The following number of results were obtained from the searches: social work: 3,444; nursing: 14,345; higher education: 44,024. This means that searching in the databases concerning education, psychology, social work, and sociology, there are approximately three times the results of nursing research and over ten times the higher education research on similar subjects. Although it is expanding, social work is lagging behind similar fields in both number of studies and quality of studies.

Discussion

This systematic review indicates that the literature on technology and social work education is an expanding area of inquiry. 132 articles were found published within 2010-2015 relating to the intersection of technology and the social work teaching and learning process. Andrew Quinn of the University of North Dakota had the most first-author publications (n = 4) within the time frame. Conclusions on this subject and implications for social work departments are discussed below.

Degree Level and Sample Size

Within the current systematic literature review the average sample size of studies that explicitly reported it was 67. Comparing these results to the work of Dennison et al. (2010), a similar literature review of educational studies within social work, there are small differences to discuss. Dennison et al. (2010) found an average sample size of 74 among their studies and also reported the degree levels featured were split approximately 65% MSW, 35% BSW. With regard to sample size, both studies indicate a similar degree of rigor. With respect to degree level, the research study at hand indicates a continuing focus on MSW programs over BSW.

Opportunities for Technology within the Results of the Sample

This systematic review identified the most prevalent technologies and results within the previous five years of social work education literature. The results of these comparisons report higher scores (Huerta-Wong & Schoech, 2010), grasping more content (Baldridge, McAdams, Reed, & Moran, 2013), and ease of communications (Aguirre & Mitschke, 2011) when comparing virtual, mobile, or online education to more traditional face to face methods. Distance students were also more likely to be older, working, or non-traditional (Oliaro & Trotter, 2010)

and more resources were often required when moving course material online (Ferrera, Ostrander, & Crabtree-Nelson, 2013).

The literature reports on the growing number of online offerings popping up within social work programs, the cost (e.g. time, money, etc.), the rigor involved of developing a successful online class, and the continued support for the "no difference" hypothesis when comparing online classes versus face to face courses (McAllister, 2013). Distance education involves online course elements and/or video conferencing to deliver educational content to students. This method of instruction has been reported as effective (Buchanan & Mathews, 2013) and growing intensely among social work programs (East, LaMendola, & Alter, 2014). Cost of these programs, however, can be prohibitive and up to three times more expensive due to personnel and extra spent time (Stotzer, Fujikawa, Sur, & Arnsberger, 2013). Also, these online courses have to be rigorously designed and challenges are inherent in the process (Jones, 2015). Despite these challenges, it is important to forge ahead. Distance education broadens the base of social workers in areas such as rural student outreach (Maple, 2010). The literature concerning the hybrid model of teaching, a combination of online and face to face elements, was generally found to be the best model (Kurzman, 2013) and although it takes more structure, hybrid classes can enhance the student learning experience comparatively (Ferrera, Ostrander, & Crabtree-Nelson, 2013).

Duncan-Daston, Hunter-Sloan, and Fullmer (2013) reported that social media relationships can have major issues and social worker ethical dilemmas abound. Dombo, Kays, and Weller (2014) recommended that social workers should be as thoughtful in their digital presence as they are in the "real world". Cooner (2014) used Facebook to help teach students about social worker online boundary and ethical issues. Twitter was found to be an invaluable

tool for students to promote social justice and advocacy (Hitchcock & Battista, 2013). Social networking was found to better facilitate study abroad (Jackson & Nyoni, 2012) as well as offer students additional opportunities for professional and leadership development (Bosco-Ruggiero, Kollar, Strand, & Leake, 2015).

Video is a technology that continues to be studied within social work education. Video case studies are important for teaching student skills related to reflecting and reframing situations (Cooner, 2010). Student-created video assignments are needed to engage students who have grown up wired and it helps them promote social justice issues and gain important technological literacies (Tetloff, Hitchcock, Battista, & Lowry, 2014).

Social Work Issues Studied

This sample of literature indicates that generalist courses and clinical practice skills are the most prevalent issues studied when publishing in this area. The literature within the sample that discussed clinical skills and technology often referred to the degree of difficulty in preparing these kinds of classes for the online environment (Holmes, Hermann, & Kozlowski, 2014; Jones, 2015; Levin, Whitsett, & Wood, 2013). Rural social work received a fair amount of attention within the literature. Stotzer (2012) highlighted that distance programs help change rural communities and Maple (2010) reported that while there are challenges to connecting rural students to the social work curriculum, new technologies are making social work an option for students who would normally be excluded. Diversity was an issue discussed across studies, and one study found an increase in diversity values due to the use of an online diversity forum for students (Lee, Brown, & Bertera, 2010).

Quasi-Experimental Studies

Dennison et al. (2010) reported that rigor is needed in studies as well as comparison groups, pre/post designs, and a delineation between teaching methods and learning outcomes. As reported, only 11% of the sample included a comparison of two or more groups. If technology studies are less rigorous they can be interpreted as having less gravity in the research world. More experimental design needs to occur if educators are to take newer technological methods seriously.

Limitations

Selective reporting within each individual article is a concern among literature reviewers. The outcome reporting within studies is hopefully complete and transparent. However, within this current sample of scholarly technology publications, there are varied research designs and little standardization across studies. The range of sample sizes is between $n = 3$ and $n = 345$. It is hard to directly compare the qualitative elements of studies to the quantitative. These biases limit the comparability of the sample population. Missing data is a limitation. Systematic literature reviews on similar topics in the future should narrow the inclusion criteria regarding study design, sample sizes, technology studied, or by social work course. In this way, a larger scope of years can be reviewed while maintaining a sufficient amount of rigor and specificity of topic.

Implications for Practice and Education

The potential future implications of this technology literature within social work education are abundant. Engaging in public discourse is one technological opportunity that can be undertaken by social work educators. Both MacKinnon (2009) and Howard and Garland (2015) discuss this issue in their articles and make the point that social work academics should

engage more in public discourse and that technology has provided more than one tool to accommodate this. Wikis, social media, open access publishing online are three examples.

The presence of online offerings affects the competitiveness of social work programs (Ahmedani, et al., 2011). Deans and directors recognize this fact but lament the difficulty in transforming an organization around technology (East, LaMendola, & Alter, 2014). A method to test a faculty member's readiness to accept technology or innovation can be found within the Diffusion of Innovation theory (Rogers, 2003). Diffusion is a commonly studied theory in relation to technology and education or organizations. This conceptual paradigm helps to describe how new ideas, innovations, or technological advances are accepted and used among individuals or groups (i.e. diffused among people). The theoretical implication for faculty who teach social work is that the level of technological adoption can be anticipated, measured, and strategized to best serve the needs of students.

Virtual Environments and Social Work Education

Smith (2015) reported that relations in the virtual environment were important to the learning atmosphere of a social work class. Reinsmith-Jones, Kibbe, Crayton, and Campbell (2015) described virtual spaces as thought provoking and positive to students. Virtual reality within popular culture is perhaps on a precipice, as demonstrated by the acquisition of one virtual reality headset, the Oculus Rift, by Facebook (Wikipedia, 2016). If virtual reality turns out to be the new social media platform, then social workers might as well learn about working within that realm sooner than later. With regard to this, Ahmedani et al. (2011) reported on social workers interacting with adolescents and recommended "implementing technology into the social work curriculum, [because] students will be more adept at using newer methods and will be more able to communicate and understand the cyber environment of the youth with whom they work" (p.

842). If the results within these systematically sampled publications are any indication, social workers will be meeting their future clients in digital realms, and the education of those students on how to navigate these relationships will be critical.

References

Aguirre, R. T. P., & Mitschke, D. B. (2011). Enhancing learning and learner satisfaction through the use of WebCT in social work education. *Social Work Education, 30*(7), 847-860.

Ahmedani, B. K., Harold, R. D., Fitton, V. A., & Shifflet Gibson, E. D. (2011). What adolescents can tell us: Technology and the future of social work education. *Social Work Education, 30*(7), 830-846. doi:10.1080/02615479.2010.504767

Allen, E. I., & Seaman, J. (2007). Changing the landscape: More institutions pursue online offerings. *On the Horizon, 15*(3), 130-138.

Anstadt, S. P., Bradley, S., & Burnette, A. (2013). Virtual worlds: Relationship between real life and experience in second life. *International Review of Research in Open & Distance Learning, 14*(4), 160-190.

Arispea, K., & Blake, R. J. (2012). Individual factors and successful learning in a hybrid course. *System, 40(4),* 449–465.

Ashery, R. S. (2001). The utilization of technology in graduate schools of social work. *Journal of Technology in Human Services, 18*(1), 5.

Baldridge, S., McAdams, A., Reed, A., & Moran, A. (2013). Mobile classrooms: Using mobile devices to enhance BSW education. *Journal of Baccalaureate Social Work, 18,* 17-32.

Beaulaurier, R. L., & Radisch, M. A. (2005). Responding to CSWE technology guidelines: A literature review and four approaches to computerization. *Journal of Teaching in Social Work, 25*(1), 129-152. doi:10.1300/J067v25n01•09

Behrend,T. S., Wiebe, E. N., London, J. E., & Johnson, E. C. (2011). Cloud computing adoption and usage in community colleges. Behaviour & Information Technology, 30(2), 231-240.

Bellefeuille, G. L. (2006). Rethinking reflective practice education in social work education: A blended constructivist and objectivist instructional design strategy for a web-based child welfare practice course. *Journal of Social Work Education, 42*(1), 85-103.

Bettmann, J., Thompson, K, Padykula, N., & Berzoff, J., (2009). Innovations in doctoral education: Distance education methodology applied. *Journal of Teaching in Social Work, 29*(3), 291-312. doi:10.1080/08841230903018397

Beyerbach, B., Walsh, C., & Vannatta, R. (2001). From teaching technology to using technology to enhance student learning: Preservice teachers' changing perceptions of technology infusion. *Journal of Technology and Teacher Education, 9*(1), 105-27.

Blaschke, C. M., Freddolino, P. P., & Mullen, E. E. (2009). Ageing and technology: A review of the research literature. *British Journal of Social Work, 39*(4), 641-656.

Bosco-Ruggiero, S., Kollar, S., Strand, V. C., & Leake, R. (2015). Supporting child welfare traineeship students through an online peer network. *Advances in Social Work, 16*(1), 170-183.

Brill, J. M., & Galloway, C. (2007). Perils and promises: University instructors' integration of technology in classroom-based practices. *British Journal of Educational Technology, 38*(1), 95-105. doi:10.1111/j.1467-8535.2006.00601.x

Buchanan, R. L., & Mathews, D. A. (2013). A comparison of student knowledge and attitude toward research: Are main campus students different from those in a hybrid environment? *Journal of Teaching in Social Work, 33*(4), 467-480.

Buquoi, B., McClure, C., Kotrlik, J. W., Machtmes, K., & Bunch, J. C. (2013). A national research survey of technology use in the BSW teaching and learning process. *Journal of Teaching in Social Work, 33*(4), 481-495. doi:10.1080/08841233.2013.833577

Carle, A. C., Jaffee, D., & Miller, D. (2009). Engaging college science students and changing academic achievement with technology: A quasi-experimental preliminary investigation. *Computers & Education, 52*(2), 376-380. doi:10.1016/j.compedu.2008.09.005

Chen, B. (2009). Barriers to adoption of technology mediated distance education in higher-education institutions. *Quarterly Review of Distance Education, 10*(4), 333-338.

Clouser, Sherry, (2011). Syllabus for EDHI 9040: Using Technology in the College Classroom. Retrieved from https://www.elc.uga.edu

Colvin, A. D., & Bullock, A. N. (2014). Technology acceptance in social work education: Implications for the field practicum. *Journal of Teaching in Social Work, 34*(5), 496-513. doi:10.1080/08841233.2014.952869

Cooner, T. S. (2010). Creating opportunities for students in large cohorts to reflect in and on practice: Lessons learnt from a formative evaluation of students' experiences of a technology-enhanced blended learning design. *British Journal of Social Work, 41*(2), 271-286.

Cooner, T. S. (2014). Using facebook to explore boundary issues for social workers in a networked society: Students' perceptions of learning. *British Journal of Social Work, 44*(4), 1063-1080.

CSWE. (2015). Distance education offerings by accredited programs. Retrieved from http://www.cswe.org/Accreditation/Information/DistanceEducation.asp

Cummings, S. M., Chaffin, K. M., & Cockerham, C. (2015). Comparative Analysis of an Online and a Traditional MSW Program: Educational Outcomes. *Journal of Social Work Education, 51:1,* 109-120

Cummings, S. M., Foels, L., & Chaffin, K. M. (2013). Comparative analysis of distance education and classroom-based formats for a clinical social work practice course. *Social Work Education, 32*(1), 68-80. doi:10.1080/02615479.2011.648179

Dennison, S. T., Gruber, K. J., & Vrbsky, L. (2010). Research literature review on social work education instructional methods: 1998-2008. *Journal of Teaching in Social Work, 30*(4), 399-419. doi:10.1080/08841233.2010.517732

Dombo, E. A., Kays, L., & Weller, K. (2014). Clinical social work practice and technology: Personal, practical, regulatory, and ethical considerations for the twenty-first century. *Social Work in Health Care, 53*(9), 900-919. doi:10.1080/00981389.2014.948585

Duncan-Daston, R., Hunter-Sloan, M., & Fullmer, E. (2013). Considering the ethical implications of social media in social work education. *Ethics & Information Technology, 15*(1), 35-43.

East, J. F., LaMendola, W., & Alter, C. (2014). Distance education and organizational environment. *Journal of Social Work Education, 50*(1), 19-33.

Edwards, H. R., & Hoefer, R. (2010). Are social work advocacy groups using web 2.0 effectively? *Journal of Policy Practice, 9*(3), 220-239. doi:10.1080/15588742.2010.489037

ESRI (1992). The ARC/INFO Method. Redlands, CA: Environmental Systems Research Institute.

Faria, G., & Perry-Burney, G. (2002). A technology-based MSW program. *Journal of Teaching in Social Work, 22 (3/4)*, 155-169.

Ferrera, M., Ostrander, N., & Crabtree-Nelson, S. (2013). Establishing a community of inquiry through hybrid courses in clinical social work education. *Journal of Teaching in Social Work, 33*(4), 438-448.

Fillion, G., Limayem, M., Laferrière, T., & Mantha, R. (2009). Integrating information and communication technologies into higher education: Investigating onsite and online students' points of view. *Open Learning, 24*(3), 223-240. doi:10.1080/02680510903201649

Fink, L. D. (2003). Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses. San Francisco, CA: Jossey-Bass.

Forte, J. A., & Root, V. (2011). To ITV or not to ITV: A comparison of hybrid and web-enhanced approaches to teaching a macro-course in human behavior in the social environment. *Journal of Human Behavior in the Social Environment, 21*(1), 82-96.

Fu, J. (2013). ICT in education: A critical literature review and its implications. *International Journal of Education & Development using Information & Communication Technology, 9*(1), 112-125.

Glackin, B. C., Rodenhiser, R. W., & Herzog, B. (2014). A library and the disciplines: A collaborative project assessing the impact of eBooks and mobile devices on student learning. *Journal of Academic Librarianship, 40*(3), 299-306. doi:10.1016/j.acalib.2014.04.007

Hash, K. M., & Tower, L. E. (2010). The development and evaluation of online learning modules to deliver lifespan content in human behavior in social environment courses.

Journal of Human Behavior in the Social Environment, 20(3), 379-392. doi:10.1080/10911351003673260

Hitchcock, L. I., & Battista, A. (2013). Social media for professional practice: Integrating twitter with social work pedagogy. *Journal of Baccalaureate Social Work, 18,* 33-45.

Holmes, C., Hermann, K., & Kozlowski, K. (2014). Integrating web 2.0 technologies in educational and clinical settings: An isomorphic perspective. *Journal of Technology in Human Services, 32*(1), 65-80.

Holmes, M., Tracy, E., Painter, L., Oestreich, T., & Park, H. (2015). Moving from flipcharts to the flipped classroom: Using technology driven teaching methods to promote active learning in foundation and advanced masters social work courses. *Clinical Social Work Journal, 43*(2), 215-224. doi:10.1007/s10615-015-0521-x

Howard, M. O., & Garland, E. L. (2015). Social work research: 2044. *Journal of the Society for Social Work & Research, 6*(2), 173-200. doi:10.1086/681099

Huerta-Wong, J., & Schoech, R. (2010). Experiential learning and learning environments. The case of active listening skills. *Journal of Social Work Education, 46*(1), 85-101.

Hylton, M. E., & Albers, E. (2007). The use of interactive television in a BSW program: Comparing experiences of distance and campus-based learners. *Journal of Baccalaureate Social Work, 13*(1), 52-66.

Kuilema, J. (2013). Social workers and broadband advocacy: Social justice and information communications technologies. *Social Science Computer Review, 31*(3), 291-305. doi:10.1177/0894439312454266

Jackson, D. S., & Nyoni, F. P. (2012). Reflections on study abroad education: Guidelines on study abroad preparation and process. *Journal of Human Behavior in the Social Environment, 22*(2), 201-212.

Jones, S. (2015). Benefits and challenges of online education for clinical social work: Three examples. *Clinical Social Work Journal, 43*(2), 225-235.

Kurzman, P. A. (2013). The evolution of distance learning and online education. *Journal of Teaching in Social Work, 33*(4), 331-338.

Lawrence, S., & Abel, E. M. (2013). Comparing outcomes of a web-based MSW course to face-to-face class outcomes: Implications for social work education. *Social Work Education, 32*(6), 762-772.

Lee, E. O. (2014). Use of avatars and a virtual community to increase cultural competence. *Journal of Technology in Human Services, 32*(1), 93-107. doi:10.1080/15228835.2013.860364

Lee, E. O., Brown, M., & Bertera, E. M. (2010). The use of an online diversity forum to facilitate social work student' dialogue on sensitive issues: A quasi-experimental design. *Journal of Teaching in Social Work, 30*(3), 272-287.

Levine, J., & Adams, R. H. (2013). Introducing case management to students in a virtual world: An exploratory study. *Journal of Teaching in Social Work, 33*(4), 552-565. doi:10.1080/08841233.2013.835766

Liechty, D. (2012). Technology, consciousness, and the transitional symbolic self: Implications for social work education. *Journal of Teaching in Social Work, 32*(4), 342-355. doi:10.1080/08841233.2012.705242

Lionarakis, A., & Papademetriou, D. (2003). The quality of the learning experience: a comparative study between open distance and conventional education. Turkish Online Journal of Distance Education, 4(2).

MacKinnon, S. T. (2009). Social work intellectuals in the twenty-first century: Critical social theory, critical social work and public engagement. *Social Work Education, 28*(5), 512-527. doi:10.1080/02615470802406494

Maple, M. (2010). Developing web-based distance education for rural social work students. *Women in Welfare Education, 9*, 40-49.

Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? university students' use of digital technologies. *Computers & Education, 56,* 429-440. doi:10.1016/j.compedu.2010.09.004

McAllister, C. (2013). A process evaluation of an online BSW program: Getting the student perspective. *Journal of Teaching in Social Work, 33*(4), 514-530.

Milam, J., Voorhees, R. A., & Bedard-Voorhees, A. (2004). Assessment of online education: Policies, practices, and recommendations. *New Directions for Community Colleges,* (126), 73-85.

Miller, M. T., & Mei-Yan Lu. (2003). Serving non-traditional students in E-learning environments: Building successful communities in the virtual campus. Educational Media International, 40(1), 163.

Mishna, F., Bogo, M., Root, J., & Fantus, S. (2014). Here to stay: Cyber communication as a complement in social work practice. Families in Society, 95(3), 179-186. doi:10.1606/1044-3894.2014.95.23

Okech, D., Barner, J., Segoshi, M., & Carney, M. (2014). MSW student experiences in online vs. face-to-face teaching formats. *Social Work Education, 33*(1), 121-134.

Oliaro, L., & Trotter, C. (2010). A comparison of on-campus and off-campus (or distance) social work education. *Australian Social Work, 63*(3), 329-344.

O'Neill, M., & Jensen, J. (2014). Comparison of student outcomes in a campus and a distributed learning class. *Journal of Technology in Human Services, 32*(3), 186-200.

Perron, B. E., Taylor, H. O., Glass, J. E., & Margerum-Leys, J. (2010). Information and communication technologies in social work. *Advances in Social Work, 11*(1), 66-81.

Quinn, A. (2010). An exploratory study of opinions on clickers and class participation from students of human behavior in the social environment. *Journal of Human Behavior in the Social Environment, 20*(6), 721-731. doi:10.1080/10911351003749102

Rasmussen, B. (2015). Sue watling and jim rogers: Social work in a digital society. *Clinical Social Work Journal, 43*(2), 254-255. doi:10.1007/s10615-014-0514-1

Reamer, F. G. (2013). Distance and online social work education: Novel ethical challenges. *Journal of Teaching in Social Work, 33*(4), 369-384. doi:10.1080/08841233.2013.828669

Regan, J. A. R. C., & Youn, E. J. (2008). Past, present, and future trends in teaching clinical skills through web-based learning environments. *Journal of Social Work Education, 44(2)*, 95-115.

Reinsmith-Jones, K., Kibbe, S., Crayton, T., & Campbell, E. (2015). Use of second life in social work education: Virtual world experiences and their effect on students. *Journal of Social Work Education, 51*(1), 90-108.

Roberts-deGennaro, M., & Clapp, J. (2005). Assessing the virtual classroom of a graduate social policy course. Journal of Teaching in Social Work, 25(1), 69-90. doi:10.1300/J067v25n01•05

Rockinson-Szapkiw, A. J., & Walker, V. L. (2009). Web 2.0: Facilitating interactivity and collaborative relationships in an online human service counseling skills course. Journal of Technology in Human Services, 27(3), 175-193. doi:10.1080/15228830903093031

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). New York, NY: Free Press.

Royse, D. (2001). Teaching Tips for College and University Instructors: A Practical Guide. Needham Heights, MA: Allyn & Bacon.

Saleh, H. (2008). Computer self-efficacy of university faculty in lebanon. *Educational Technology Research & Development, 56*(2), 229-240. doi:10.1007/s11423-007-9084-z

Saunders, G., & Klemming, F. (2003). Integrating technology into a traditional learning environment: Reasons for and risks for success. *Active Learning in Higher Education, 4*(1), 74-86. doi:10.1177/1469787403004001006

Schmid, R. F., Bernard, R. M., Borokhovski, E., Tamim, R. M., Abrami, P. C., Surkes, M. A., . . . Woods, J. (2014). The effects of technology use in postsecondary education: A meta-analysis of classroom applications. *Computers & Education, 72*, 271-291. doi:10.1016/j.compedu.2013.11.002

Shamseer, L., Moher, D., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., . . . Stewart, L. A. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: Elaboration and explanation. *BMJ (Clinical Research Ed.), 349*, g7647-g7647. doi:10.1136/bmj.g7647

Shorkey, C. T., & Uebel, M. (2014). History and development of instructional technology and media in social work education. Journal of Social Work Education, 50, 247-261.

Siebert, D. C., Siebert, C. F., & Spaulding-Givens, J. (2006). *Teaching clinical social work skills primarily online: An evaluation* Council on Social Work Education.

Smith, M. L. (2009). What my "LED ball" reveals about the future of technology and social work: A farewell aloha. *New Social Worker, 16*(1), 30-33.

Stotzer, R. L., Fujikawa, K., Sur, J., & Arnsberger, P. (2013). Cost analysis of a distance education MSW program. *Journal of Teaching in Social Work, 33*(4), 357-368. doi:10.1080/08841233.2013.826318

Tetloff, M., Hitchcock, L., Battista, A., & Lowry, D. (2014). Multimodal composition and social justice: Videos as a tool of advocacy in social work pedagogy. *Journal of Technology in Human Services, 32*(1), 22-38. doi:10.1080/15228835.2013.857284

Watling, S. (2012). Digital exclusion: Potential implications for social work education. *Social Work Education, 31*(1), 125-130. doi:10.1080/02615479.2010.539605

West, J. (2008). Authentic voices: Utilising audio and video within an online virtual community. *Social Work Education, 27*(6), 665-670. doi:10.1080/02615470802201762

Wikipedia (2015). Facebook. Retrieved from https://en.wikipedia.org/wiki/Facebook

Williams-Gray, B. (2014). Preparation for social service leadership: Field work and virtual organizations that promote critical thinking in administration practice. *Journal of Teaching in Social Work, 34*(2), 113-128. doi:10.1080/08841233.2014.892050

Wilson, A. B., Brown, S., Wood, Z. B., & Farkas, K. J. (2013). Teaching direct practice skills using web-based simulations: Home visiting in the virtual world. *Journal of Teaching in Social Work, 33*(4), 421-437. doi:10.1080/08841233.2013.833578

Wise, J. M. (1997). *Exploring technology and social space* Thousand Oaks, Calif. : Sage Publications, c1997.

Woehle, R., & Quinn, A. (2009). An experiment comparing HBSE graduate social work classes: Face-to-face and at a distance. *Journal of Teaching in Social Work, 29(4*), 418-430. doi:10.1080/08841230903249745

Young, J. A. (2015). Assessing new media literacies in social work education: The development and validation of a comprehensive assessment instrument. *Journal of Technology in Human Services, 33*(1), 72-86. doi:10.1080/15228835.2014.998577

Zdravkova, K., Ivanovic, M. Putnik, Z. (2012). Experience of integrating web 2.0 technologies. *Educational Technology Research & Development, 60*(2), 361-381. doi:10.1007/s11423-011-9228-z

Zeman, L. D., & Swanke, J. (2008). Integrating social work practice and technology competencies: A case example. *Social Work Education, 27*(6), 601-612. doi:10.1080/02615470802201630

CHAPTER 3

ARE BSW AND MSW STUDENTS ENTERING FIELD PLACEMENTS WITH A CRITICAL UNDERSTANDING OF THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES?[1]

[1]Beal, B. G. To be submitted to *Advances in Social Work*

Abstract

This research study used a primarily quantitative approach to assess the critical technology skills of the BSW and MSW students placed within a social work department's field practicum. A cross-sectional survey was sent to students and field supervisors regarding technology usage in the field. It was found that supervisors agreed that students are technologically proficient coming into placements and that the most useful skills included how to use documentation software, smart phones, teleconferencing, and the Internet in general. There were differences in student and instructor responses regarding where students receive technology training. This research study contributes to the understanding of field placement technology needs and how social work students are obtaining the skills to fill these needs.

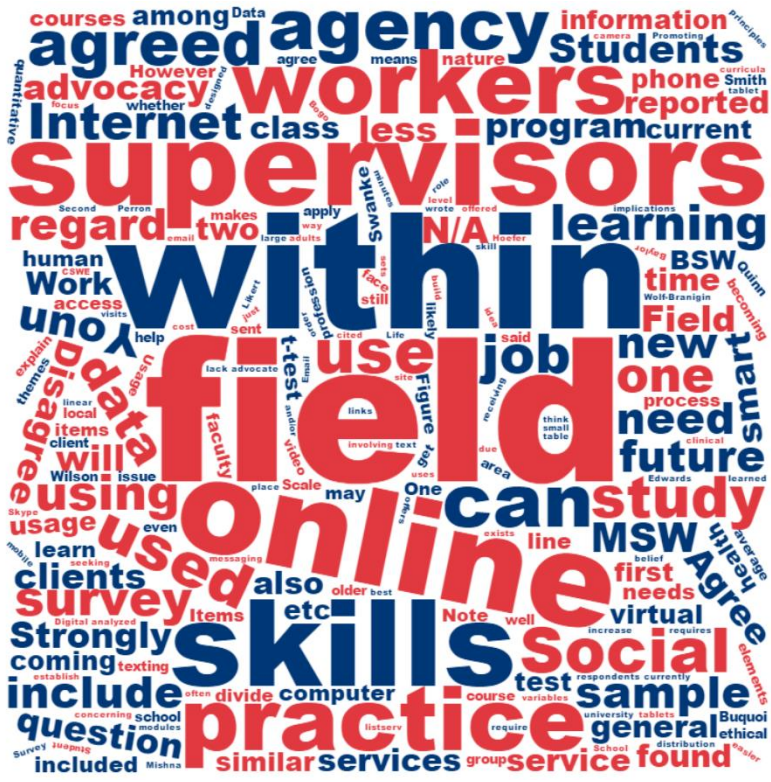

Figure 3.1. Word cloud of full text, Chapter 3.

Introduction

The main goal of social work education is to prepare students for the challenges of social work practice (O'Connor, Cecil & Boudioni, 2009). Modern practice methods can include administering online counseling, the usage of digital records, cyber-therapy, and using other emerging technologies (Reamer, 2013). The current climate of public services is migrating public benefits online (Eamon, Wu, Moroney, & Cundari, 2013), and technology in general has a growing role among the skills a social worker must possess (Dombo, Kays, & Weller, 2014). Smith (2009) polled social work experts and reported that Web 2.0, cloud computing, online support groups, and online fundraising projects have an important future among social workers. Schoech (2014), in an editorial piece for the *Journal of Technology in Human Services,* speculated that possible future special issue topics include "biometric devices and wearable computing, cloud computing, robotics, elderly IT applications, serious human service IT games, use of social media such as Facebook and Twitter in practice, and smartphone apps to support human service practice" (p. 251).

These burgeoning technologies are expected to have a great potential impact on the field, especially with issues such as rural social work, advocacy campaigns, distance services for clients, and the continuing education of social workers. It is vital that social workers in current practice settings be proficient in word processors, computer documentation, and various electronic communications (Youn, 2007). While these skills might seem very simple compared to other new technological developments, it is not unreasonable to expect technology to play an even larger role in the coming decades (Liechty, 2012).

Social work practice and social work education are separate, yet highly related to one another. To get a full understanding of how technology is used in social work programs, the field

of social work practice must be discussed as well. Youn (2007) identified the need for social work students to be proficient in at least the basic technologies if they are to be useful to their future employers. Quinn and Fitch (2014) stated that all human service workers will, at some point, engage in either recording data, generating information, producing knowledge, or communicating their knowledge to others; all of which can be facilitated through technology. This need for technological proficiency in practice creates the need for related education in social work programs. If new social workers are expected to be proficient in the use of technology then the responsibility for this preparation falls on someone. Potential responsible parties include social service employers, national associations, faculty, or the students themselves.

The question of who is teaching these technology skills to students is important if the profession wants to survive in the modern era. The social work programs of the United Kingdom are leading the way in this realm and have pushed for more technology content within their curriculum (Quality Assurance Agency for Higher Education, 2008). According to this agency, social work students in the UK must demonstrate a critical understanding of information and communication technologies in how they impact society and an awareness of the digital divide. These quality assurance bookmarks are very similar to the standards the CSWE sets for social work programs in America. The difference with regard to technology, however, is that the UK version treats the topic with more gravity and offers specific suggestions for instructors.

The first exposure to real clients often starts with the field practicum during a social work students' final year of school. This is one of the first opportunities to test a future practitioner's skills with regard to technological proficiency. The question of whether or not new social workers are ready to apply these skills when they enter in the field is relevant to the future of the profession. It is imperative to explain what, if any, skills BSW and MSW students are lacking

within their field placements and explore what opportunities social work programs, organizations, and agencies are missing. Because technology pushes the bounds of how we work, students coming into practice having already utilized technology for innovative purposes will be better able to apply new technologies to age-old social injustice issues.

In Youn's (2007) qualitative research study he compared the technology content in an MSW program with the technology needs of local human service agencies. The results indicated that the technology content of that MSW program was sufficient and that the student interns were adequately prepared for the technology demands of the local agencies. That study was a snapshot of a single MSW program in the United States and it was found that the agencies surveyed were not using technology to its fullest capacity. Further research is needed on this topic and in line with Youn's work, this current research study answered questions pertaining to the technology component of the social work curriculum and students' knowledge on how to apply technology within their field placements. Quantitative data were collected from BSW students, MSW students, and field supervisors. The following research questions were addressed:

1. What are the technology needs of local agencies?
2. Are these needs being fulfilled by the social work students placed there?
3. Where do the students learn critical technology skills?
4. What are the opportunities for utilizing technology skills within these placements?
5. What is the relationship between technology usage and attitude, and age and gender?

This research study is exploratory in nature and also indicates suggestions for social work programs with regard to adding technology components to social work syllabi.

Literature Review

This literature review identified research on technology use within social work practice, education, and the field practicum.

Technology within Social Work Practice

Evidence on technology's current impact on social work practice can be seen in recent research on the subject. Sterns (2005) found that a program designed to educate older adults about personal digital assistants had success in providing unique benefits that included helping with medication reminders. Because older adults can have difficulty managing their medications (Kolomer, 2009), innovative programs such as this one can be very beneficial. The area of Internet services is growing as well. The first known online, fee-based mental health service was established by Sommers in 1995 (Reamer, 2013). If clients seeking this kind of service have Internet access, the potential to help people through such online social networking interventions is tremendous (Wolf-Branigin, 2009). Videka and Goldstein (2012) reported on a program that integrated text messaging into an adolescent mental health program and communicated the importance of social media to contemporary clinical social work practice. One of the widest uses of technology is for continuing education among social workers, including examples that bring together culturally and disciplinarily diverse workers (Jackson & Elkins, 2006).

In terms of technology and broader implications within practice, Perron, Taylor, Glass, and Margerum-Leys (2010) reported on the effect that communication technologies have on the ethical standards of social work. They wrote that technologies such as social networking, electronic messages, and the Internet in general all influence certain ethical principles of social workers. These principles include recognizing the central importance of human relationships, protecting the confidentiality of clients, continuity of services, seeking the advice of colleagues,

and advocacy. Reamer (2013) cited the potential ethical dilemmas surrounding encrypting client information on databases, receiving accurate informed consent with cyber-therapy, or having dual relationships with clients over Facebook. Reamer concludes that future social workers will have to walk a "fine line between valuable innovation that has therapeutic benefits and harmful, possibly exploitative treatment of vulnerable clients" (p. 171).

Technology is affecting the way social workers advocate for their clients. Practice involving advocacy can feature important elements such as social marketing or making the public aware of issues (Dunlop & Fawcett, 2008). These two skills are enhanced by modern online crowd-sourcing and communicating. However, some advocacy groups are behind the curve when it comes to these methods. Among a sample of social work advocacy organization websites, less than 20% featured social networking links, blogs, options for sharing website information, or video content (Edwards & Hoefer, 2010). Edwards and Hoefer have called for an increase in agency capabilities involving this web-based advocacy.

It is necessary for social workers to be cognizant of the lack of access to important online services, or the "digital divide", that exists for some people (Wolf-Branigin, 2009). It has been shown that computer ownership and access is less likely among people who are older, less educated, earn lower wages, or who belong to a minority group (U.S. Census Bureau, 2014). Although smart phone Internet access is more evenly distributed among demographics, the divide of who can easily get online or work on a computer is still present. This is significant because more job applications are offered online, more skill acquisitions take place online, and other important resources are migrating online all the time (Larrison, Nackerud, Risler, & Sullivan, 2002). Social workers advocate on behalf of these marginalized populations and the

addition of a digital divide adds to the potential of economic and social isolation. These are issues very relevant to social work.

The most prevalent technology used in social work practice today can be classified as information and communication technologies. This very general term includes all electronic delivery systems such as the Internet, radios, televisions, and computer-aided devices that can connect to wi-fi or other frequency (Fu, 2013). Experts agree that this is the largest area for growth within social work. Practical applications include Internet health discussion groups for health care management (Seckin, 2009), online mental health services (Mishna, Bogo, Root, & Fantus, 2014), smart phone applications (Baldridge, McAdams, Reed, & Moran, 2013), and technology-enhanced simulations for worker education (Cook et al., 2011). Although the essence of social work practice has historically involved face-to-face interactions, clinicians and researchers are moving towards communication with clients from a distance. Even though social presence is embodied by physicality, it is no longer contained to the purely physical (LaMendola, 2010).

It has been reported that when compared to fields such as engineering or business, social work uses less technology (Margaryan, Littlejohn, & Vojt, 2011). Despite this disparity, technologies such as mobile devices or online simulations are increasingly becoming more important within practice (Baldridge et al., 2013; Wilson, Brown, Wood, & Farkas (2013). The need for technological proficiencies in practice creates the need for related education in social work programs because "merging technology and practice is important in social work education since most graduates will work in computer-supported environments" (Zeman & Swanke, 2008, p. 601).

Technology Usage within Social Work Education

The social worker educational process has been altered in recent years (Dennison, Gruber, & Vrbsky, 2010), and technology contributed to these changes. Modern devices have contributed to the growth of technology based learning (Ahmedani, Harold, Fitton, & Gibson, 2011). Prevalent technologies mentioned in the social work education literature include course management systems (e.g. Blackboard, Moodle, Web CT), email, smart phones, tablets, DVD/CD players, distance learning platforms, and the Internet in general (Buquoi, et al. 2013). In an educational context, these technologies are used to help students and instructors facilitate the teaching and learning process. Some programs are teaching technology directly to social work students. UT Arlington had the class: Advanced Use of Information Technology in the Human Services (Schoech, 2011) and University of Minnesota still offers a technology and communication in social work class (University of Minnesota School of Social Work, 2015).

Distance education is by far the most widely studied aspect of technology in social work education. Youn (2007) remarked on the abundance of distance education studies within the technology-focused social work literature. One definition of distance education is a separation of the instructor and student in time and/or place (Hylton & Albers, 2007). As a basis for peer collaboration, social work students have used distance technologies like wikis or course management systems to provide an arena for multiple collaborators to work on the same project across time (Zeman & Swanke, 2008). Other examples include online course elements and/or video conferencing. The benefits of teaching online are becoming evident to programs as they build more online learning environments (Faul, Frey, & Barber, 2004; Littlefield & Roberson, 2005; Zeman & Swanke, 2008). Higher education in general has moved more curricula online and in one study that measured student learning effectiveness online, Fillion, Limayem,

Laferriere, and Mantha (2009) found that there was not a significant difference in a student's increase in critical thinking skills, analysis of issues, or understanding of basic concepts in online courses when compared to the in-class counterpart.

The general idea of teaching clinical skills outside of the traditional classroom is a complicated issue. Faculty within social work departments sometimes report feeling apprehensive about using certain technologies to teach courses (Buquoi et al., 2013), especially practice-based courses (Wilson et al., 2013). There exists is a negative bias toward technology in its ability to help facilitate practice areas that traditionally depend on face-to-face interaction (Ashery, 2001). The perceived limitations of the technology may explain why faculty within social work programs are not overwhelmingly adopting teaching innovations (Ashery, 2001; Beaulaurier & Radisch, 2005; Chen, 2009). These perceptions may also explain why some faculty agree that the technology content of social work curriculum does not need to be enhanced (Youn, 2007) and why some schools of social work decide not to get involved with projects such as distance education programs (Ashery, 2001).

Nonetheless, social work educators are pushing the boundaries of educational technology. There are numerous studies on audience response systems, social media, and virtual learning environments (Fang, Mishna, Zhang, Van Wert, & Bogo, 2014; Lee, 2014; Quinn, 2010; Reinsmith-Jones, Kibbe, Crayton, & Campbell, 2015; Shon & Smith, 2011; Tetloff, Hitchcock, Battista, & Lowry, 2014). Some educators are “flipping” the classroom, or viewing online lectures before class and dedicating face-to-face time to engaging students with collaborative case studies (Holmes, Tracy, Painter, Oestreich, & Park, 2015). Overall, this hybrid method seems to work best.

It has been argued that students of social work should be capable of electronic advocacy (Moon & deWeaver, 2005). Changing teaching strategies can be a daunting task and adaptation to newer methodologies takes time (Youn, 2007, p. 49). However, in a statement within Smith's (2009) poll of social work education experts, Philip Ouellette stated that if "we continue to think that social work training cannot be offered online, the profession will disappear" (p. 30) and concluded that institutions ignore this idea at their folly.

Intersection of Technology and Social Work Field Practicum

The literature pertaining to field instruction and technology includes much on virtual contact between students, field programs, and field supervisors. Recent research has focused on virtual elements within the field practicum. "With the emergence of new innovations such as tablet technology and smartphones, along with easy-to-use applications such as Skype and FaceTime, virtual supervision of social work field students is even closer to becoming a reality" (Colvin & Bullock, 2014, p. 506). With field visits using a higher overall percentage of a program's travel budget (Danis, Woody, & Black, 2013), virtual supervision is receiving more attention. Colvin and Bullock (2014) reported that "it is of critical importance for field educators to embrace a mind-set of acceptance regarding technology-infused field education" (p. 507).

It has been suggested that field practicum pedagogy could focus more on technology-mediated exchanges between school personnel and field supervisors (Perron et al., 2010). An online syllabi search indicated that current field practicum requirements mention technology sparingly, as seen in a field education class at Baylor University that urges students to: "continuously discover, appraise, and attend to…technological developments" (Baylor University Diana R. Garland School of Social Work, 2016, p. 11). Although it is at a large cost, virtual simulations of home visits are being developed in spaces such as Second Life in order to

jump start students' engagement and assessment skills before they practice the generalist model in face to face situations (Wilson et al., 2013).

Methods

These methods were designed to make the research replicable and this research was approved by the Institutional Review Board (STUDY00001800). The data in this research study came from an experimental survey sent online and concerns social work student and supervisor technology usage within field placements.

Sample

A convenience sample was obtained of BSW and MSW students currently in their field practicum and field supervisors working or having previously worked with BSW or MSW students in a practicum setting. The population of the research study in question is representative of a BSW and MSW cohort and field supervisors at a large public university in the South (N = 614) and approximately 25% of them were sampled. Email correspondence was sent out to a field education listserv. Some of the representative agencies in which these respondents worked included county family and children services, hospitals, K-12 schools, shelters for women or homeless, religious-based programs, and university departments.

Instrument

In line with Youn's (2007) work and Quinn and Fitch's (2014) research on field agency expectations regarding new social worker technology proficiency, an online survey was constructed for the purposes of this research study. An expert panel of professors evaluated the instrument for content and face validity. Items measured demographic information, technology usage, attitudes on technology, the readiness of social work student interns to use agency technology, and implications for future social workers. Survey items included Likert-type scales

and open-ended questions. The hosting site of the survey was SurveyGizmo.com, a site used for its smart phone survey compatibility. Although online surveys have been associated with lower response rates (Fan & Yan, 2010), this survey technology is appropriate for the research study. Buquoi et al.'s (2013) Internet data collection procedure on a similar topic was analogous as well.

Data Collection

Survey links were emailed out to a listserv of students and supervisors. The average completion time for student surveys was four minutes; for supervisors it was nine minutes. A small percentage (15%) of students completed the survey on their smart phone as opposed to 1% of field supervisors. All surveys were submitted between April 14, 2015 and May 21, 2015. The data were confidential as the IP addresses of people surveyed was collected.

Data Analysis

Data were exported from the survey website into a spreadsheet. Certain items were uploaded and analyzed using both the Statistical Package for Social Sciences (SPSS) and R. The descriptive data and corresponding statistics, figures, and tables were reported. A two group comparison of student responses and supervisor responses was conducted for certain variables. A multiple linear model was attempted. The open-ended questions were analyzed and the resulting themes and statements were reported.

Limitations

The sampling method was non-probabilistic and may have attracted a technology-inclined sample due to the nature of the online-only survey. The sample is non-generalizable; it only includes one social work department and so it is understood that the results cannot be projected beyond this sample. It may be considered a pilot research study.

Results

The response rate for field supervisors and students was approximately 25% for either group (*n* = 95 instructors, *n* = 56 students). The descriptive themes identified in the survey include the most used and important technologies in the field, how important technology is to doing a good job, potential opportunities, how prepared students are coming into placements, and thoughts on where the primary responsibility of training new social workers lies with regard to teaching technology skills.

Table 3.1

Sociodemographic Characteristics of Participants

	Field Supervisors (*n* = 95)		**Students (*n* = 56)**	
Characteristics	***N***	**%**	***N***	**%**
Gender				
Female	82	86%	51	96%
Male	13	14%	2	4%
Age				
20-29	5	6%	43	78%
30-39	35	39%	9	16%
40-49	25	28%	1	2%
50+	24	27%	2	4%

	Field Supervisors (*n* = 95)		Students (*n* = 56)	
Years of experience				
0-5	16	17%		
6-9	11	12%	N/A	N/A
10-19	35	37%		
20+	32	34%		
Degree Level*				
MSW	61	65%	46	88%
BSW	5	5%	6	12%
Both	28	30%		

**For supervisors, this category is the degree level supervised*

The technologies field supervisors identified as most used within their work include email (100% of respondents), the Internet (99%), documentation (79%), texting (77%), smart phone (69%), online education modules (67%, and teleconferencing and Facebook being used slightly less than 50% by all field supervisors. The data on students was similar although all types of technology were used less by students on average. Of note, field supervisors used teleconferencing 30% more than students, texting 22% more than students, and social media sites (YouTube, Facebook, & Twitter) 10%-20% more than students within their job. Table 3.2 and Figure 3.2 display this data.

Table 3.2

Technology Used by Field supervisors and Students within their Respective Work

	Field Supervisors		**Students**	
Type of Technology	***N***	**%**	***N***	**%**
Email	95	100	48	85.7
The Internet	94	99.0	52	92.9
Documentation software	75	79.0	33	58.9
Texting	73	76.8	31	55.4
Smart phone (iPhone, Android, etc.)	66	69.5	34	60.7
Online education modules	64	67.4	23	41.1
Teleconference (Skype, Google Hangout, etc.)	47	49.5	11	19.6
Facebook	44	46.3	21	37.5
Digital or still camera	37	39.0	8	14.3
Tablet (iPad, Galaxy, Surface, etc.)	34	35.8	14	25.0
YouTube	27	28.4	4	7.1
Twitter	24	25.3	7	12.5
Digital video camera	17	17.9	5	8.9
Podcasts	13	13.7	3	5.4
Audience response systems (Clickers, Poll Everywhere, etc.)	13	13.7	1	1.8
Virtual worlds/simulations (Second Life, Oculus Rift, etc.)	2	2.1	0	0

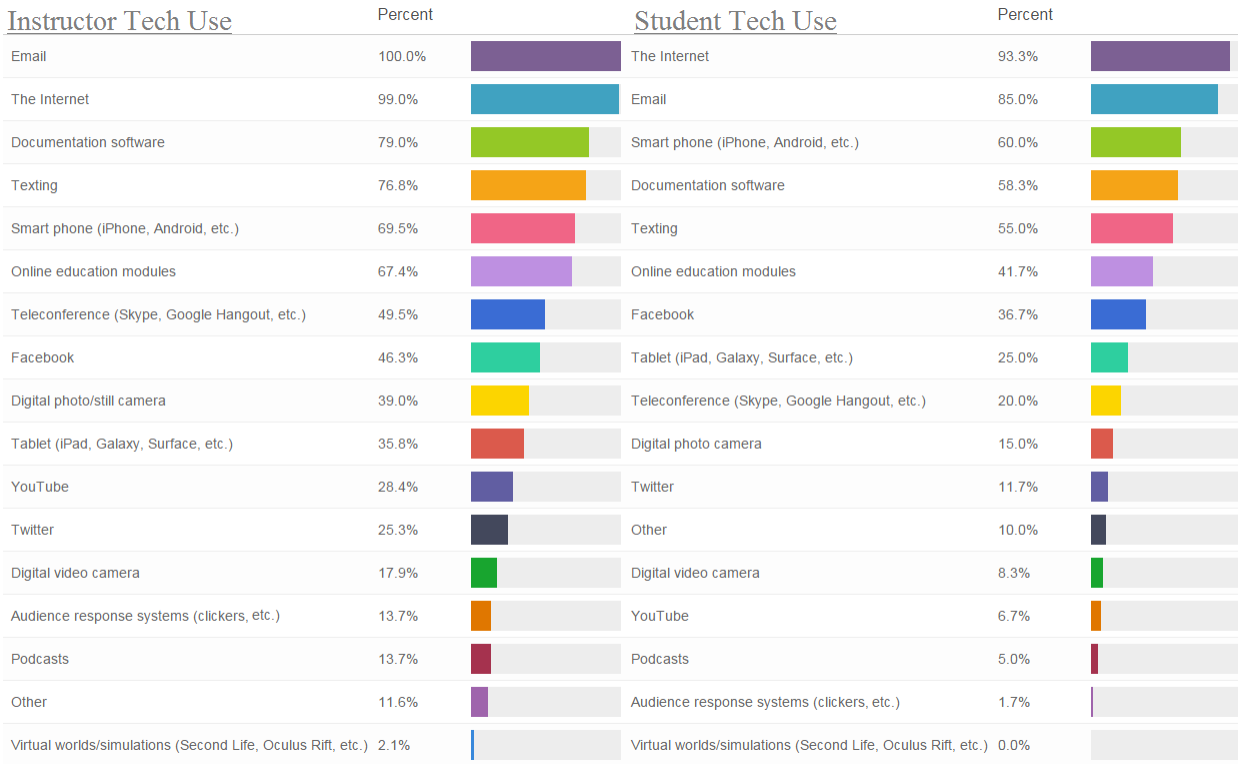

Figure 3.2. Technology usage within work by instructors and students.

The majority of field supervisors agreed (50%) or strongly agreed (25%) that knowledge about technology was important to doing their job. Over 80% agreed that the social work students they supervise come into the placement with competent technology skills. Nearly 95% of instructors agreed that technology makes their job easier. 63% reported that there are more opportunities for technology usage within their agency. Some of the opportunities listed included tablet use, social media, and better website management.

Table 3.3

Likert Scale Attitudes and Usage Items

	Field Supervisors (*n* = 95)			**Students (*n* = 56)**		
Statements about Technology within Agency	***N***	***M***	***SD***	***N***	***M***	***SD***
"My agency requires much knowledge about technology to do a good job"	93	3.94	.93	56	3.09	.94
"Social work students are competent in the use of technology when first placed within our agency"	94	3.97	.81	N/A	N/A	N/A
"I felt competent in the use of technology when I was first placed within my agency"	N/A	N/A	N/A	56	4.20	.67
"Technology makes my job easier"	94	4.49	.62	56	4.39	.56
"There are more opportunities to use technology within my agency"	92	3.79	.98	56	3.36	.92

Note: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

In order to ascertain whether two sets of data are different to a significant level the most appropriate statistical test is the t -test. The t -test is a parametric test and therefore makes some assumptions about the nature of population distribution and parameters. Given that there was a need to compare the means of students and supervisors the two sample t-test was utilized. This test is also helpful in analyzing data gained from a small sample size. Table 3.4 illustrates this t-test and the distribution of the Likert-type scale responses to the question concerning how much knowledge about technology agencies require.

Table 3.4

"My agency requires much knowledge about technology to do a good job"

	1	**2**	**3**	**4**	**5**	**N**	**MEAN**
Supervisor	1	9	12	48	25	95	3.916
Student	2	15	16	22	1	56	3.089
t-test	Test stat = 5.2408 with 149 df; P-value < 0.0001						+0.827

Note: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

From Table 3.4, it was concluded that these two variables are significantly different. This means that field supervisors agreed more often that knowing about technology is required to do a good job but students at similar agencies were more neutral in this regard.

A two sampled t-test was used to establish equivalence between the mean scores for the question concerning student competency with technology when they first are placed at an agency. There was no significant difference found between the supervisors (M = 3.97, SD = .81) and students (M = 4.20, SD = .67), $t(149) = -1.948$, $p = 0.0535$. This means that both students and supervisors agree that students are entering field placements with enough technology skills.

Field supervisors believed their social work students learn to use technology on the job (40% strongly agreed) and on their own (22% strongly agreed). Similarly, students believed they learned these skills on the job (38% strongly agreed) and on their own (33% strongly agreed). There were differences with regard to student learning in the classroom, however.

Table 3.5

Likert-type Scale Location of Student Technology Learning Items

	Field Supervisors (*n* = 95)			**Students (*n* = 56)**		
Social work students learn to use the technology required at an agency:	***N***	***M***	***SD***	***N***	***M***	***SD***
On their own	92	3.85	.97	56	4.05	.98
Classes in school	89	3.19	.98	56	2.43	1.23
On the job	94	4.28	.72	56	4.25	.79

Note. 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

A two sampled t-test was used again, this time on belief about whether or not technology skills are taught in classes. There was a significant difference were found between the supervisors (M = 3.19, SD = .98) and students (M = 2.43, SD = 1.23), $t(144) = 3.92$, $p < 0.001$. These results indicate that students are less likely to believe they learn appropriate technology skills in class as compared to supervisors.

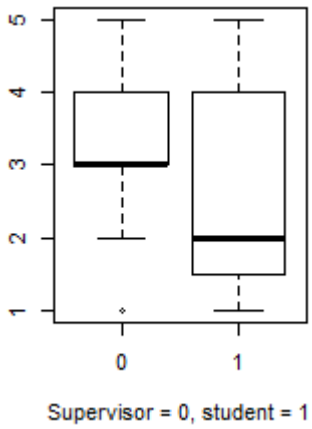

Figure 3.3. Boxplot of agreement on whether students learn technology skills in school.

Supervisors agreed (38%) or strongly agreed (26%) that there are more opportunities to use technology within their agency while students agreed (35%) or were neutral (42%) on the same question.

Table 3.6

Likert-type Scale on Opportunities for Promoting Technology Items

	Field Supervisors (*n* = 95)			**Students (*n* = 56)**		
Promoting more technology opportunities within the field of social work is the responsibility of the following:	***N***	***M***	***SD***	***N***	***M***	***SD***
Social work programs in colleges/universities	94	4.05	.77	56	3.70	.91
Social work agency administration	94	4.11	.75	56	4.04	.85
Social workers themselves	94	4.17	.80	56	4.05	.75
Social work associations (NASW, CSWE, etc.)	91	3.60	1.07	56	3.80	.96

Note: 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree

An attempt was made to fit a multiple linear model for each variable but no relevant significance was shown. There were no gender or age effects.

The responses to the open-ended questions were from a qualitative perspective. When asked about technology opportunities within social work agencies, both students and supervisors mentioned tablets, smart phones, and texting specifically as having an important future within their agency. One supervisor wrote that “allowing our text line to be accessed via internet” was

imperative and a student said they were “experimenting with different technology opportunities to accommodate our growing text-line”, including using messaging apps so that multiple social workers could communicate over the same line. This student also said that their agency had not yet found a solution to this problem.

Documentation software was mentioned a great deal by students and supervisors as one of the most important technologies used. One student said that their documentation database was crucial but that the “one we currently have is outdated and unsupported”. Another student mentioned one day using computer software to automatically stamp documents at a click of a button because their current system involved physically stamping hundreds of pages manually. On the student end, documentation software was mentioned the most as the technological skill they lacked coming into their placement.

Discussion

The most important conclusion that can be drawn from this research study is that field supervisors and social work students themselves in this sample both agreed that students coming into placements are competent in using technology. However, the amount of technological opportunities mentioned in the open response data denotes a lack of potential technology that agencies could be using.

With regard to the question on where students are learning to use technology, students were more likely to report that they learn it on their own (M = 4.05) while instructors believed students learned it in class more (M = 3.19). Students also had a lower average agreement compared to supervisors with the question pertaining to colleges or universities being responsible for promoting technological opportunities within the field. These results might signal a supervisor disconnect to departments of social work. This separation of beliefs demonstrates that

students are less inclined to turn to their social work programs for technology skills. Although these skills were measured as adequate within this limited sample frame, the future environment of social work will certainly require more skills. It is a dangerous belief to think that social workers can be as effective as possible while learning these innovative skills on their own.

With mobile technology and social networking changing client interactions and relationships with such abundance, social work programs need to look at their curriculum. Sending out student interns with untested skills in this area leads to missed opportunities and perhaps compromised competitiveness compared to schools that are including innovative coursework. As one field supervisor put it, “we are unlikely to hire a social worker who is not proficient with using a computer”.

The themes identified in the survey items echo Youn’s (2007) work on a similar topic. There is a need for more establishment of best practices among new technologies in the field. If more social workers and faculty can collaborate and focus on technology content within social work programs, then this awareness can “push the issue” (Youn, 2007, p. 56) and establish a strong base with regard to innovative skills for graduating students.

Future studies on this topic should include a more generalizable sample and updated technology as it is tested in the field. As social work enters the second quarter of this century, there is a continued urge to build in more technology components within the curricula of social work programs. Questions remain about understanding how social networking and media affect non-profits, how budget constraints will force agencies to digitally interact more with larger client loads, or what new ethical boundaries will be raised when these new online relationships become the norm within social work.

References

Ahmedani, B. K., Harold, R. D., Fitton, V. A., & Gibson, E. D. (2011). What adolescents can tell us: Technology and the future of social work education. *Social Work Education, 30*(7), 830-846. doi:10.1080/02615479.2010.504767

Allen, E. I., & Seaman, J. (2007). Changing the landscape: More institutions pursue online offerings. *On the Horizon, 15*(3), 130-138.

Antonis, D. P. (2003). The quality of the learning experience: A comparative study between open distance and conventional education. *The Turkish Online Journal of Distance Education,* (2).

Ashery, R. S. (2001). The utilization of technology in graduate schools of social work. *Journal of Technology in Human Services, 18*(1), 5.

Baldridge, S., McAdams, A., Reed, A., & Moran, A. (2013). Mobile Classrooms: Using Mobile Devices to Enhance BSW Education. *The Journal of Baccalaureate Social Work, 18*, 17-32.

Baylor University Diana R. Garland School of Social Work. (2016). *SWO 5492 Foundation Internship II Spring 2016*. Retrieved from https://baylor.app.box.com/s/cnesyn96azdiqj97csd7abc2kft6o4hn

Beaulaurier, R. L., & Radisch, M. A. (2005). Responding to CSWE technology guidelines: A literature review and four approaches to computerization. *Journal of Teaching in Social Work, 25*(1), 129-152. doi:10.1300/J067v25n01•09

Buquoi, B., McClure, C., Kotrlik, J. W., Machtmes, K., & Bunch, J. C. (2013). A national research survey of technology use in the BSW teaching and learning process. *Journal of Teaching in Social Work, 33*(4), 481-495. doi:10.1080/08841233.2013.833577

Chen, B. (2009). Barriers to adoption of technology mediated distance education in higher-education institutions. *Quarterly Review of Distance Education, 10*(4), 333-338.

Colvin, A. D., & Bullock, A. N. (2014). Technology acceptance in social work education: Implications for the field practicum. *Journal of Teaching in Social Work, 34*(5), 496-513. doi:10.1080/08841233.2014.952869

Cook, D. A., Hatala, R., Brydges, R., Zendejas, B., Szostek, J. H., Wang, A. T., . . . Hamstra, S. J. (2011). Technology-enhanced simulation for health professions education: A systematic review and meta-analysis. *JAMA: Journal of the American Medical Association, 306*(9), 978-988. doi:10.1001/jama.2011.1234

Danis, F. S., Woody, D., & Black, B. M. (2013). Comparison of face to face vs. electronic field liaison contacts. *Field Educator, 3(1)*. Retrieved from http://www2.simmons.edu/ssw/fe/i/Danis.pdf

Dennison, S. T., Gruber, K. J., & Vrbsky, L. (2010). Research literature review on social work education instructional methods: 1998-2008. *Journal of Teaching in Social Work, 30*(4), 399-419. doi:10.1080/08841233.2010.517732

Dombo, E. A., Kays, L., & Weller, K. (2014). Clinical social work practice and technology: Personal, practical, regulatory, and ethical considerations for the twenty-first century. *Social Work in Health Care, 53*(9), 900-919. doi:10.1080/00981389.2014.948585

Dunlop, J. M., & Fawcett, G. (2008). Technology-based approaches to social work and social justice. *Journal of Policy Practice, 7*(2), 140-154. doi:10.1080/15588740801937961

Eamon, M. K., Wu, C., Moroney, G., & Cundari, M. (2013). Teaching the importance and use of web-based services to assist clients in obtaining public benefits. *Journal of Teaching in Social Work, 33*(2), 143-158. doi:10.1080/08841233.2013.777011

Edwards, H. R., & Hoefer, R. (2010). Are social work advocacy groups using web 2.0 effectively? *Journal of Policy Practice, 9*(3), 220-239. doi:10.1080/15588742.2010.489037

Fan, W., & Yan, Z. (2010). Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior, 26*(2), 132-139. doi:10.1016/j.chb.2009.10.015

Fang, L., Mishna, F., Zhang, V. F., Van Wert, M., & Bogo, M. (2014). Social media and social work education: Understanding and dealing with the new digital world. *Social Work in Health Care, 53*(9), 800-814. doi:10.1080/00981389.2014.943455

Faul, A. C., Frey, A. J., & Barber, R. (2004). The effects of web-assisted instruction in a social work research methods course. *Social Work Education, 23*(1), 105-118. doi:10.1080/0261547032000175764

Fillion, G., Limayem, M., Laferrière, T., & Mantha, R. (2009). Integrating information and communication technologies into higher education: Investigating onsite and online students' points of view. *Open Learning, 24*(3), 223-240. doi:10.1080/02680510903201649

Fu, J. (2013). ICT in education: A critical literature review and its implications. *International Journal of Education & Development using Information & Communication Technology, 9*(1), 112-125.

Holmes, M., Tracy, E., Painter, L., Oestreich, T., & Park, H. (2015). Moving from flipcharts to the flipped classroom: Using technology driven teaching methods to promote active learning in foundation and advanced masters social work courses. *Clinical Social Work Journal, 43*(2), 215-224. doi:10.1007/s10615-015-0521-x

Hylton, M. E., & Albers, E. (2007). The use of interactive television in a BSW program: Comparing experiences of distance and campus-based learners. *Journal of Baccalaureate Social Work, 13*(1), 52-66.

Jackson, H., & Elkins, J. (2006). An online course in trauma for school personnel world wide: collaboration, challenges, and opportunities. Professional Development, 9(1), 34-44.

Jo, S. F. (2013). ICT in education: A critical literature review and its implications. *International Journal of Education & Development using Information & Communication Technology, 9*(1), 112-125.

Kolomer, S. R. (2009). Grandparent caregivers' health and management of prescription medication. *Journal of Intergenerational Relationships, 7*(2), 243-258. doi:10.1080/15350770902851346

LaMendola, W. (2010). Social work and social presence in an online world. *Journal of Technology in Human Services, 28*(1-2), 108-119.

Larrison, C. R., Nackerud, L., Risler, E., & Sullivan, M. (2002). Welfare recipients and the digital divide: Left out of the new economy? *Journal of Technology in Human Services, 19*(4), 1.

Lee, E. O. (2014). Use of avatars and a virtual community to increase cultural competence. *Journal of Technology in Human Services, 32*(1), 93-107. doi:10.1080/15228835.2013.860364

Liechty, D. (2012). Technology, consciousness, and the transitional symbolic self: Implications for social work education. *Journal of Teaching in Social Work, 32*(4), 342-355. doi:10.1080/08841233.2012.705242

Littlefield, M. B., & Roberson, K. C. (2005). Computer technology for the feminist classroom. *AFFILIA: Journal of Women and Social Work, 20*(2), 186-202.

Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? university students' use of digital technologies. *Computers & Education, 56*, 429-440. doi:10.1016/j.compedu.2010.09.004

Mishna, F., Bogo, M., Root, J., & Fantus, S. (2014). Here to stay: Cyber communication as a complement in social work practice. *Families in Society, 95*(3), 179-186. doi:10.1606/1044-3894.2014.95.23

Moon, S. S., & deWeaver, K. L. (2005). Electronic advocacy and social welfare policy education. *Journal of Teaching in Social Work, 25*(1/2), 57–68.

O'Connor, L., Cecil, B., & Boudioni, M. (2009). Preparing for practice: An evaluation of an undergraduate social work 'preparation for practice' module. *Social Work Education, 28*(4), 436-454. doi:10.1080/02615470701634311

Perron, B. E., Taylor, H. O., Glass, J. E., & Margerum-Leys, J. (2010). Information and communication technologies in social work. *Advances in Social Work, 11*(1), 66-81.

Quality Assurance Agency for Higher Education. (2008). *Benchmark statement.*

Quinn, A. (2010). An exploratory study of opinions on clickers and class participation from students of human behavior in the social environment. *Journal of Human Behavior in the Social Environment, 20*(6), 721-731. doi:10.1080/10911351003749102

Quinn, A., & Fitch, D. (2014). A conceptual framework for contextualizing information technology competencies. *Journal of Technology in Human Services, 32*(1), 133-148. doi:10.1080/15228835.2013.860367

Reamer, F. G. (2013). Distance and online social work education: Novel ethical challenges. *Journal of Teaching in Social Work, 33*(4), 369-384. doi:10.1080/08841233.2013.828669

Reinsmith-Jones, K., Kibbe, S., Crayton, T., & Campbell, E. (2015). Use of second life in social work education: Virtual world experiences and their effect on students. *Journal of Social Work Education, 51*(1), 90-108. doi:10.1080/10437797.2015.977167

Schoech, D. (2011). *SOCW 6355 Syllabus for Spring 2011.* Retrieved from http://wweb.uta.edu/faculty/schoech/cussn/courses/6355/syllabus_6355.htm

Schoech, D. (2014). *Human services technology, 1980+: Retrospective and perspective* doi:10.1080/15228835.2014.968432

Seçkin, G. (2009). Internet technology in service of personal health care management: Patient perspective. *Journal of Technology in Human Services, 27*(2), 79-92. doi:10.1080/15228830902749179

Shon, H., & Smith, L. (2011). A review of poll everywhere audience response system. *Journal of Technology in Human Services, 29*(3), 236-245. doi:10.1080/15228835.2011.616475

Smith, M. L. (2009). What my "LED ball" reveals about the future of technology and social work: A farewell aloha. *New Social Worker, 16*(1), 30-33.

Sterns, A. A. (2005). Curriculum design and program to train older adults to use personal digital assistants. *The Gerontologist, 45*(6), 828-834.

Tetloff, M., Hitchcock, L., Battista, A., & Lowry, D. (2014). Multimodal composition and social justice: Videos as a tool of advocacy in social work pedagogy. *Journal of Technology in Human Services, 32*(1), 22-38. doi:10.1080/15228835.2013.857284

University of Minnesota. (2015). *M.S.W. Student Handbook 2015-2016.* Retrieved from http://www.cehd.umn.edu/ssw/Documents/MSW/MSWHandbook2015-2016.pdf

U.S. Census Bureau. (2014). *Census data.*

Videka, L., & Goldstein, E. (2012). 50 years and the future of agency-based clinical social work practice: Introduction to the special issue. *Clinical Social Work Journal, 40*(2), 119-126. doi:10.1007/s10615-012-0396-z

Wilson, A. B., Brown, S., Wood, Z. B., & Farkas, K. J. (2013). Teaching direct practice skills using web-based simulations: Home visiting in the virtual world. *Journal of Teaching in Social Work, 33*(4), 421-437. doi:10.1080/08841233.2013.833578

Wolf-Branigin, M. (2009). New media and social networks: Considerations from clients in addictions treatment. *Journal of Technology in Human Services, 27*(4), 339-345. doi:10.1080/15228830903329864

Youn, E. (2007). The relationship between technology content in a masters of social work curriculum and technology use in social work practice a qualitative research study. *Journal of Technology in Human Services, 25*(1), 45-58.

Zeman, L. D., & Swanke, J. (2008). Integrating social work practice and technology competencies: A case example. *Social Work Education, 27*(6), 601-612. doi:10.1080/02615470802201630

CHAPTER 4

SOCIAL WORK FACULTY AND TEACHING WITH TECHNOLOGY:

FACTORS INFLUENCING ADOPTION[1]

[1]Beal, B. G. To be submitted to *Journal of Technology in Human Services*

Abstract

This research study assessed social work faculty's relationship with technology in the teaching and learning process. Social work is actively challenged to promote more uses of technology and a drive for more online class formats within social work programs compels a deeper understanding of the factors that predict faculty adoption of technology. In a small, non-generalizable sample at a large public institution, it was found that the majority of faculty have a positive attitude toward using technology in the teaching and learning process and experience low to moderate barriers to using technology. Age was found to have a slightly significant negative impact on attitude and usage. Interviews of faculty were conducted. The question of who should be teaching technology skills to BSW and MSW students is discussed.

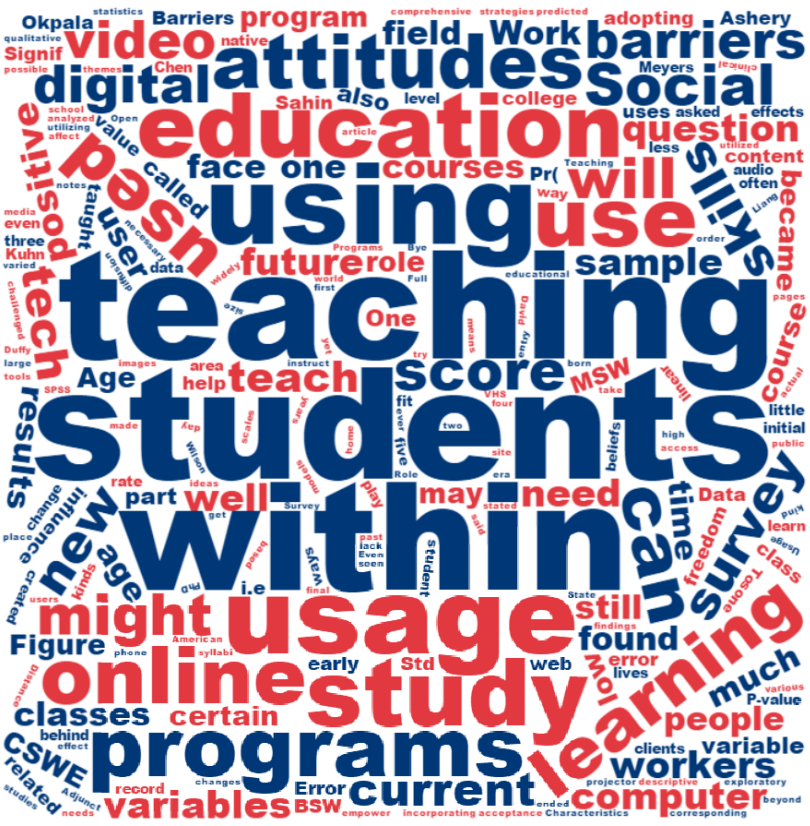

Figure 4.1. Word cloud of full text, Chapter 4.

Introduction

The teaching and learning process of social workers has transformed during the past twenty years (Dennison, Gruber, and Vrbsky, 2010) and advanced technology is one of the factors that contributed to these changes. The current environment within social work education is broadening to include such innovations as web-assisted instruction (Faul, Frey, & Barber, 2004; Littlefield & Roberson, 2005; Zeman & Swanke, 2008), incorporating digital images and audio into the curriculum (Ballantyn, 2008) and techniques involving video production (Gelman & Tosone, (2006). Although there is some growth in this area, it has been reported that when compared to fields such as engineering or business, social work uses less technology (Margaryan, Littlejohn, & Vojt, 2011). Beaulaurier and Radisch (2005) believed that very little was written about incorporating computerization into the social work curriculum. They wrote that "work need[ed] to be done to bring computer innovations and technologies into line with the...curriculum" (p. 142). Some studies suggest that social work educators are using technology at a low to moderate level (Buquoi, McClure, Kotrlik, Machtmes, & Bunch, 2013). Understanding more about the reasoning behind why instructors do or do not use technology in the teaching and learning process is important to social work education.

We know that innovative faculty taught practice skills using multimedia technology in previous decades (Ballantyne, 2008; Seabury & Maple, 1993). We also know that dozens of social work departments have developed distance learning platforms during the late aughts and early teens (Cummings, Chaffin, & Cockerham, 2015; Siebert & Spaulding-Givens, 2006; Vernon, Vakalahi, Pierce, Pittman-Munke, & Adkins, 2009; Woehle & Quinn, 2009;). The literature on technology usage within social work education is still a burgeoning area.

The adoption of technology within the teaching and learning process involves factors including attitude toward technology. Studies have found that attitudes, personal interest, and personal gratification all have a greater influence on embracing technology when compared to monetary incentives (Jacobsen, 1998; Li, 2005). Other articles echo a similar finding about attitudes and technology within departments of education (Jankowska, 2004; Metin, Yilmaz, Coskun, & Birisci, 2012). In a study of over 150 college of education faculty, Sahin and Thompson (2006) found that faculty attitude toward technology was significantly correlated with adopting instructional computer applications. Such research points to a potential relationship between attitudes and the adoption of technology within social work departments. Devaraj, Easley, and Crant (2008) reported that positive beliefs about technology were associated with actual use of technology. In another study, it was discovered that the use of self-directed informational sources such as online manuals or hands-on experimentation was a significant predictor of the technology adoption level (Sahin & Thompson, 2007). Although these study results are different, they all signal the relationship of technology adoption and teaching. One potential variable that might help explain this relationship is the instructor's attitude toward technology.

Barriers to entry exist when faculty attempt to incorporate technology into the curriculum (Sahin & Thompson, 2006). Some of these barriers include having enough time to practice the technology, availability of support and departmental resources, and the kind of class social work instructors teach (Buquoi et al., 2013). These barriers hinder the promotion of technology within the curriculum and are, in some cases, very difficult to overcome.

Purpose of Research Study

The purpose of this research study is to answer questions pertaining to faculty adoption of technology within their teaching and what variables predict this behavior. We know that technology skills have a growing role to play within the future of social work practice (Dombo, Kays, & Weller, 2014). We know that the use of technology can affect positive change within a course (Bye, Prom, Tsybikdorzhieva, & Boldonova, 2006; Frydenberg, 2008; Gelman & Tosone, 2010). We also know that attitudes toward technology affect the adoption rate within education faculty (Sahin & Thompson, 2006). Given the evidence, there is a compelling argument for the need to know more about how these variables interact in the social work education landscape and how the results impact faculty teaching.

Research Questions

1. How prevalent is faculty usage of technology?
2. What are faculty attitudes toward technology?
3. What are faculty perceptions of barriers toward the use of technology?
4. Is there a significant relationship between faculty attitudes and usage?
5. Is there a significant relationship between faculty barriers and their usage?
6. Does age predict attitude or usage and adoption?

It is hypothesized that higher faculty attitudes will have a positive effect on usage (i.e. more favorable attitudes leads to more technology usage).

Literature Review

It is the purpose of this review of the literature to reveal the relevant concepts under examination in this research study and identify a gap in the research concerning what can be addressed. This review includes the current limitations of technology, its presence within higher education and within the social work curriculum, faculty attitudes about using technology, and

historical barriers to entry when implementing technology into the teaching and learning process. Also reviewed are the theoretical considerations involved in this research study.

Limitations of Technology

The limitations of technology are present in the literature and it has been reported that technology use can have undesired or negative effects (Hylton & Albers, 2007; Menon & Coe, 2000; Young, 2009). One such negative effect deals with the exorbitant costs schools can spend on technology. Innovative methods of teaching are not always the most cost-effective choices to make in the classroom; online programs can be three times the amount compared to traditional face to face alternatives (Stotzer, Fujikawa, Sur, & Arnsberger, 2013). There are concerns over the accuracy and quality of certain kinds of online information that students or faculty might try to access (Jankowska, 2004). In a study on achievement effects of technology within classrooms in higher education, Schmid et al. (2009) pointed out that technology's role in learning might always be minimal. These kinds of findings within the literature reveal that there is still much to be learned about technology and teaching strategies.

Technology within Higher Education

The history of American higher education and technology during the last century began with such devices as mimeograph machines, typewriters, audio cassettes, reels of film, and other early machinery. Later on, classes would utilize the overhead projector and VHS cassettes that could visually illustrate points being made by the instructor. The 1980's and 1990's developed these initial teaching technologies further and the projector went digital, the VHS became the DVD, and the computer gained acceptance within both the home and classroom. These once prohibitively expensive machines could now operate efficiently and be purchased by the masses. The Internet became widely available and this technology connected millions of people and

altered the ways in which teachers instruct. This connectivity provided a relatively inexpensive and more comprehensive information resource to students and instructors compared to other educational resources at the time (Okpala & Okpala, 1997). The 1999 Nua Internet Survey stated "86% of college professors used computers to send e-mail and 85% used them to write memos or letters" (Jankowska, 2004, p. 52). The use of video for role plays became helpful in teaching clinical practice skills to students (Gelman & Tosone, 2006). The implementation of these initial technologies into higher education varied and was often left up to individual instructors. Regardless, computer technology was becoming synonymous with learning in North America and the information age was changing the teaching methods of educators in the U.S. (Okpala & Okpala, 1997).

In our current era the abundance of technology is seen in most schools around America. The newest generation of students is growing up using much of this technology in their everyday lives. The members of this new generation are sometimes called "digital natives", a term commonly used in the public societal lexicon (Liang, Commins, & Duffy, 2010). Current traditional college students across the nation are some of the first for whom these innovations have been present from their earliest memories (Liechty, 2012). Having been born roughly in the 1990's, when access to the internet and web-enabled technology became widely available, these adolescents and emerging adults are called digital natives to distinguish them from the digital immigrants who preceded them (Prensky, 2001). Some experts hypothesize that this generation of students use more technology in their personal lives and will therefore be more apt to use technology in their learning processes (Liang, Commins, & Duffy, 2010; Liechty, 2012). Despite these hypotheses, however, the label of digital native might be explaining students' technology usage too simplistically (Margaryan et al., 2011) and more research is needed in this area.

Although there are still instructors that may not ever use technology in their teaching practices, Saleh (2008) wrote that it was imperative that college faculty "incorporate technology into quality instructional practices as part of that paradigm shift into the information age" (p. 238.).

Social Work Faculty and Technology Usage

Multimedia technology use within social work education pre-dates the Internet (Ballantyne, 2008). Videodisk technology was used early on to teach practice skills to social work students (Seabury & Maple, 1993). These early kinds of video technologies made it possible for students to watch stories related to the field of social work or view potential scenarios they might encounter in practice. Eventually, with the help of the portable camcorder, students could even video record themselves in order to practice interviewing techniques—an assignment still utilized and described on current social work curriculum syllabi (University of Minnesota School of Social Work, 2015).

Social work instructors have been utilizing the Internet to help facilitate class as well. Online discussion forums have been used to connect social work students with educators abroad or even other social work students (Bye et al., 2006). They studied a technology correspondence model that provided diverse experiences for the students and also helped fulfill a Council on Social Work Education (CSWE) requirement for international content in the curriculum.

Distance education or learning is a driving force for modern higher education. The budgets of universities and colleges seem to be continually shrinking (Jankowska, 2004) yet expanding the development of online offerings. Within social work, practice classes are considered the hardest courses to move online because of the lack of face to face instruction.

Other technologies have been and continue to be utilized too. Early tech adopters within social work have "incorporated images, audio, and video into the curriculum to enrich and

enliven teaching ever since it was possible to do so" (Ballantyne, 2008, p. 613). Social work departments have designed web pages to promote their programs as well. In a study researching BSW school web sites from 2003 to 2008, it was found that these web pages became more accessible to people visiting them (Curl & Bowers, 2009). Even online virtual worlds such as Second Life have been used to teach direct practice skills for students who will eventually work with individuals and families (Wilson, Brown, Wood, & Farkas, 2013).

In Ashery's (2001) survey of over two-dozen deans from schools of social work she found that all schools were involved in using technology to some degree, all schools had computer labs and a web page, and all faculty used email, word processing, and usually PowerPoint. Ashery found that some schools video recorded student interviews with clients as a teaching tool and professors used the Internet and other software most often for policy and research courses. Most schools, however, had no comprehensive plan for their tech usage.

Although it is yet to be fully embraced by social work educators, the vast array of technologies used to facilitate teaching have been implemented into some classrooms and programs over the past few decades. The published research on technology in social work is fairly prevalent, including works on how to implement technology into the CSWE curriculum (Petracchi & Zastrow, 2010), the Internet and modern day practice (Giffords, 2009), as well as meta-analyses of technology within social work (Menon & Coe, 2000). Much of this research highlights a gap in the current curriculum. In 2005, Beaulaurier and Radisch called for the inclusion of more technology content based on CSWE accreditation standards. Gustafson and Kuhn (1999) wrote that rapidly evolving technological advances were changing the profession and that those changes created a need for partnerships between educators and practitioners. According to Kaye (1991), "social work educators will need to assume heightened responsibility

for preparing social workers who are computer literate" (p. 50). This speaks to the issue of whether or not schools of social work teach the use of technologies that students might need in future practice.

Current Role of Social Work Programs in Teaching Technology Skills

There is very little literature on the broad role of technology within social work education. Most research fits into the case study category and highlights individual programs and ideas about technology. With regard to the future careers of social work students, however, a more focused approach to the subject might be necessary as technology will almost certainly be a part of their everyday practice.

The profession of social work is being actively challenged to promote more uses of information and communication technology in practice and thus empower the service user appropriately (Parrott & Madoc-Jones, 2008). Technology is a universal part of life in America (Gustafson & Kuhn, 1999), and social workers have an increasing need to be fluent in this advancing world. In their 1999 article, Gustafson and Kuhn reported that unless practitioners or educators teach technology to students, the students will not learn. Indeed, Faria and Perry-Burney (2002) were thinking similarly when they asked what role schools of social work should play in students' tech competency in their article on a technology-based MSW program. This puts a significant amount of pressure on social work educators if they believe in teaching and modeling these technology skills for students.

Accreditation and program success requires much of schools of social work. The CSWE (2008) does not, at this time, require a technology course in the curriculum of BSW or MSW students, but some schools are still developing this type of course (Ashery, 2001). One program that is leading the way in this category is the University of Texas at Austin. As of 2015, it has

one course on record called Social Work Informatics (Potts, 2013) which covers a curriculum dedicated to information technologies and how to use them in a social work context. The general goal of a social work course in technology such as this one is to instruct future practitioners on how to best use technological innovations in the field, connect with their clients using technology, and empower clients to use technology to better their lives. This kind of course might one day become compulsory by the CSWE and it is important for schools of social work to consider ways in which technology could be implemented within their curricula. Future social workers will have to be taught these methods in order to disseminate them into real-world practice. This dissemination will have to take place in both the field and in the classroom.

Attitudes and Barriers to Adoption of Technology

The attitudes of instructors toward teaching with technology are varied. In the literature that is published regarding social work programs, instructors appear apprehensive about using certain technologies to teach courses (Buquoi et al., 2013), especially practice-based courses (Wilson et al., 2013). This is a negative bias toward technology in its ability to help facilitate practice areas that traditionally depend on face-to-face interaction (Ashery, 2001). The perceived limitations of the technology may explain why certain faculty within social work programs are not overwhelmingly adopting teaching innovations (Beaulaurier & Radisch, 2005; Chen, 2009).

Barriers can hinder a faculty member's adoption of technology (Yohon & Zimmerman, 2006). One is overcoming the initial anxiety people have about using new technologies (Buquoi et al., 2013). Even digital natives or other regular users of technology can have trepidation when adopting new habits. Some faculty may not see the benefits as there is much less evidence-based research on the positive effects technology can have in classrooms (Gerard, Varma, Corliss, & Linn, 2011). As illustrated in one study on distance learning, 47% of students thought that a one-

way, live Internet video was a productivity enhancer, while only about 20% of faculty thought similarly (Zhao, Alexander, Perreault, Lila, & Allen, 2009). There is clearly a difference of opinion with regard to effectiveness of some innovative teaching methods.

Another barrier includes availability of funds and the larger program development costs schools incur (Chen, 2009). If a school cannot afford to buy the technology, then instructors will have fewer resources available to them. However, monetary incentives on a more personal level (e.g. faculty stipends) do not appear to be the most significant motivating factor in a faculty's embrace of technology (Ives, McWhaw, & De Simone, 2005). Faculty workload, the time it takes to learn new things, and the lack of clear rewards are all concerns that can stunt the growth of tech initiatives (Chen, 2009). New educational innovations are often less concerning to faculty when compared to such duties as tenure related materials (Ashery, 2001; Leron & Hazzan, 2000).

Theoretical Framework

The Diffusion of Innovations (Rogers, 2003) provided the framework undergirding this research study. The theory describes the variables related to technology acceptance within groups or organizations: the innovation, communication channels, time, and the social system. These factors influence the rate of adoption beginning at the time when only innovators are using the technology through the final stages when only a few of the group has not adopted. A visual representation of this adoption process can be seen in Figure 4.2. This normally distributed graph portrays the first handful of people who might try out a new technology, the adoption by the mainstream (i.e. two-thirds) group of users, and finally the more traditional skeptics who might only adopt the technology because of heavy organizational influence.

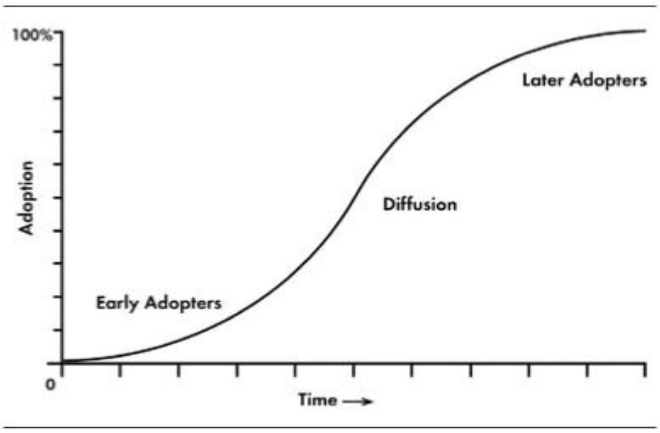

Figure 4.2. Diffusion curve (Rogers, 2003).

Each of the elements of diffusion may apply to social work faculty member's adoption of technology as well. Social work programs have a social system, timelines for projects, specific communication channels, and a variety of innovations. The concepts behind diffusion can support the process and provide strategies to speed up adoption. In a study surveying American and international social work programs, Cwikel, Savaya, Munford, and Desai (2010) reported that programs adopted innovations that were unique to them, allowed for collaboration with new partners and coalitions, or met the special education needs of particular populations of students. Diffusion would describe these as attributes of the innovation itself.

Methods

The purpose of this research study was to assess social work faculty and their usage of technology, attitudes toward technology, and perceived barriers to implementing technology. This research was approved by the Institutional Review Board (STUDY00001800). A cross-sectional survey was administered online to faculty members in social work programs.

Sample

The population of interest for this research study was the full-time, part-time, and adjunct faculty who teach at CSWE accredited BSW and MSW programs in the state of Georgia. A

convenience sampling method was employed to solicit response from schools with close ties to the researchers. This sampling frame included roughly 85 faculty from the University of Georgia, Georgia State University, and Kennesaw State University. Email correspondence was sent to faculty members at these respective schools and those faculty, utilizing a snowball method, solicited participants within the research study. The demographic characteristics of the sample included a range of ages (36-66), years of teaching experience (2-22), and tenure statuses. The final sample size was $n = 20$, nearly a 25% response rate.

Instrument

Using a similarly designed study template (Buquoi et al., 2013), an online survey was constructed for the purposes of this research study. An expert panel of professors evaluated the instrument for content and face validity. Items measured demographic information, technology usage, attitudes on technology, and barriers. Survey items included multiple choice scales, Likert-type scales and open-ended questions. The hosting site of the survey was SurveyGizmo.com, a site used for its smart phone survey compatibility. Although online surveys have been associated with lower response rates (Fan & Yan, 2010), the technology theme is appropriate for the content of the questions.

A qualitatively inspired component of the research study was also conducted. Three interviews with current social work faculty at a large, land grant institution in the south were recorded between the dates September 11, 2015 and September 22, 2015. Assumed meaning emerged concerning current usage of technology in coursework, what it takes to reach young students, and what tools will social workers need to solve the problems of the future.

Data Collection

SurveyGizmo was used to create and distribute the online survey. Links to the survey were emailed to faculty. The average completion time was just over nine minutes and 10% of the surveys were completed using a mobile device. All surveys were submitted between April 13, 2015 and May 6, 2015. The data were confidential as the IP addresses of people surveyed were collected.

Data Analysis

Data were transferred from the survey website into an Excel spreadsheet and then uploaded and analyzed using the Statistical Package for Social Sciences (SPSS) and R. The descriptive data and corresponding statistics, figures, and tables were reported. For the research question pertaining to attitudes, barriers, or usage, correlation coefficients were reported. An exploratory regression analysis was conducted on these variables. The corresponding R-square and other values were used to construct a model. The model was designed to predict faculty usage category based on attitudes toward technology. Open ended questions from the survey were reported and field notes from the interviews were analyzed for themes as well.

Limitations

The sampling method was non-probabilistic and may have attracted technology-inclined faculty due to the nature of the online-only survey. The sample is non-generalizable; it only includes only five social work departments so it is understood that the results cannot be projected beyond this sample. It may be considered an exploratory research study.

Results

The University of Georgia Statistical Consulting Center was consulted for analysis of the data. The resulting tables and figures were informed by SCC staff and mostly analyzed with the software program R.

The descriptive themes identified in the survey include the most used technologies in the teaching and learning process, general attitudes toward technology, barriers that faculty experience, and thoughts on where the primary responsibility of training new social workers lies with regard to teaching technology skills. The response rate from social work faculty was approximately 15% ($n = 20$). This sample is understood to have very little statistical power, but tests were still undertaken.

Table 4.1

Sociodemographic Characteristics of Participants

Faculty (*n* = 20) **Characteristics**	**%**
Gender	
Female	50%
Male	50%
Age	
30-39	15%
40-49	45%
50-59	15%
60+	25%

Academic Rank	
Full Professor	15%
Associate	10%
Assistant	40%
Adjunct	15%
Other	20%

The current usage of technology by faculty within the teaching and learning process is illustrated in Figure 4.3.

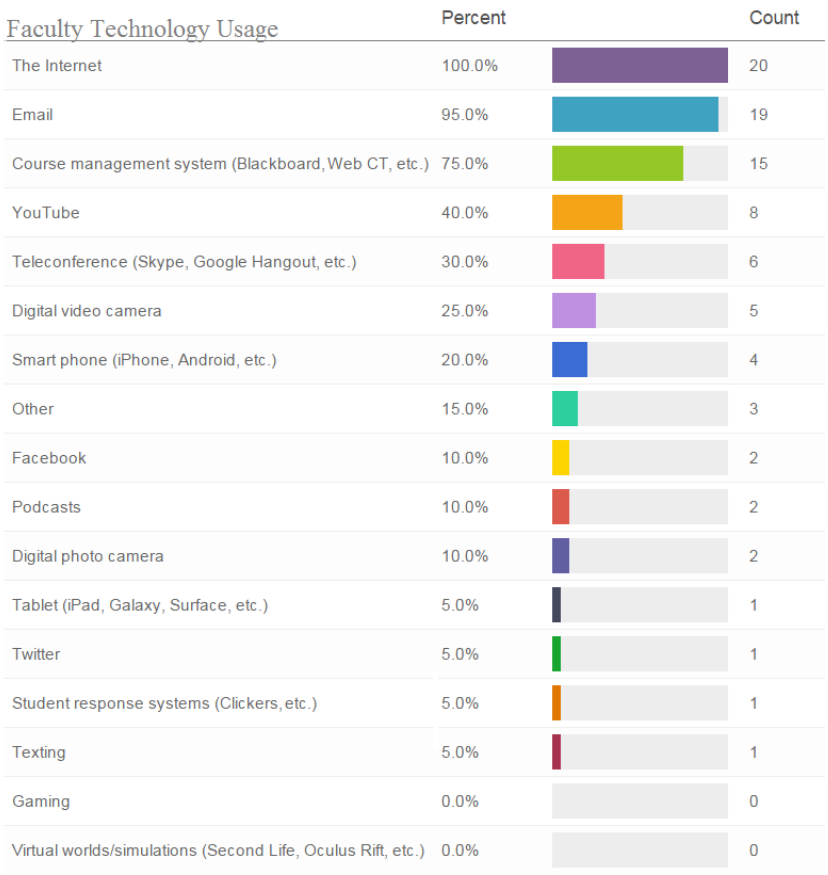

Figure 4.3. Technology usage in the teaching and learning process by faculty.

Attitudes toward technology were very positive but evenly distributed. Barriers were considered low to moderate. This echoes Buquoi et al.'s findings (2013).

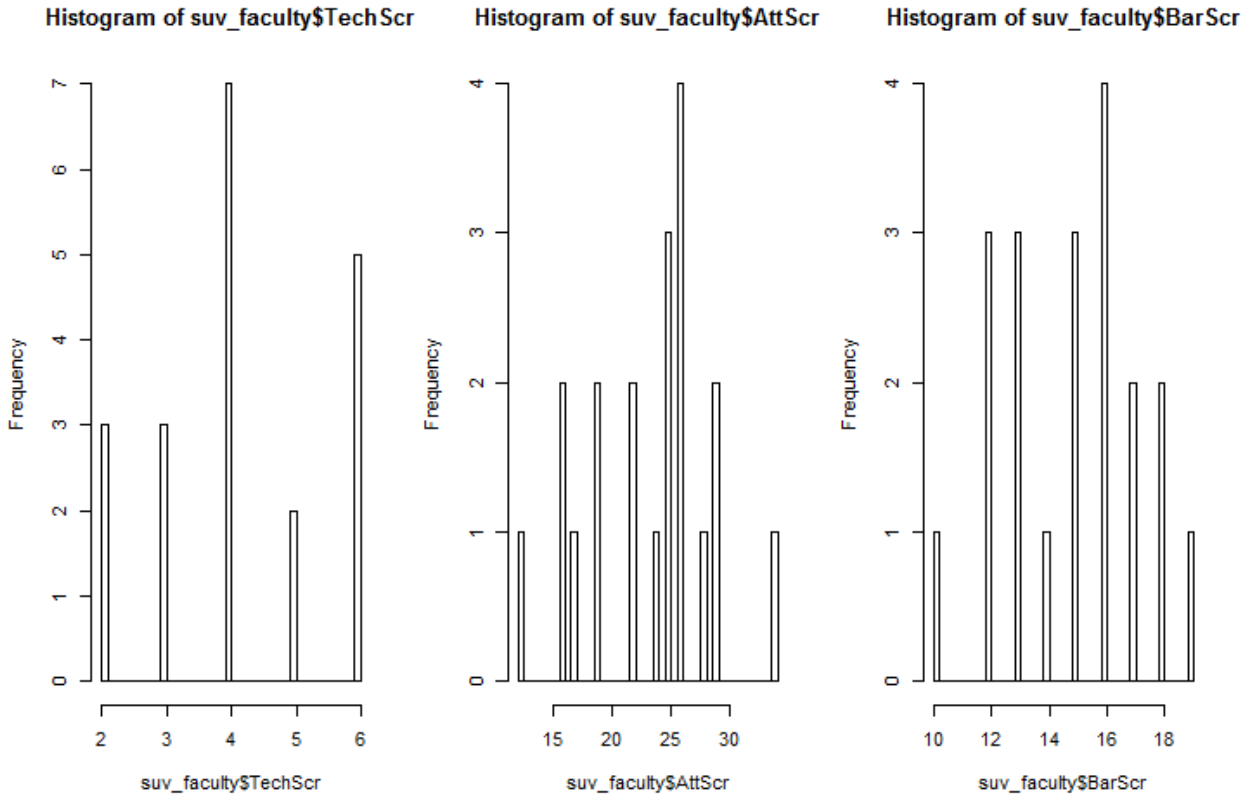

Figure 4.4. Histogram of technology, attitude, and barrier scores.

A variable was created called tech score and this summed the instances of using technology in coursework. The variables of attitude score and barrier score were created similarly. Data measures included attitude and barrier score, both used as a predictor variable for usage. Also, age as predictor variables and tech score and attitude score as outcome variables.

For research question four, a linear model was fit for tech score predicted from attitude score, with results below from the software program R:

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	1.83345	1.33315	1.375	0.1859	
AttScr	0.09942	0.05581	1.781	0.0917	.

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.314 on 18 degrees of freedom

Multiple R-squared: 0.1499, Adjusted R-squared: 0.1027

F-statistic: 3.174 on 1 and 18 DF, P-value: 0.09172

For research question five, a linear model was fit for tech score predicted from barrier score, with results below from the software program R:

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	3.55224	2.03265	1.748	0.0976	.
BarScr	0.04025	0.13520	0.298	0.7693	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.421 on 18 degrees of freedom

Multiple R-squared: 0.004901, Adjusted R-squared: -0.05038

F-statistic: 0.08865 on 1 and 18 DF, p-value: 0.7693

In neither question four or five was the predictor variable significant, as the P-values are .092 and .769, respectively. This means that a faculty member's attitude score or barrier score are not good predictors of the actual usage or adoption of technology.

For research question six, two linear models were fit with age as a predictor variable. See the results below.

Model3: Attitude Score ~ Age

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	7.40388	1.38560	5.343	4.44e-05	***
Age	-0.06560	0.02737	-2.397	0.0276	*

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.241 on 18 degrees of freedom

Multiple R-squared: 0.2419, Adjusted R-squared: 0.1998

F-statistic: 5.745 on 1 and 18 DF, P-value: 0.0276

Model4: Tech Score ~ Age,

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	34.2251	5.6120	6.099	9.22e-06	***
Age	-0.2203	0.1109	-1.987	0.0624	.

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 5.025 on 18 degrees of freedom

Multiple R-squared: 0.1799, Adjusted R-squared: 0.1343

F-statistic: 3.948 on 1 and 18 DF, P-value: 0.06236

From these two models, age has a slightly significant negative impact on technology attitude, as well as on technology usage, which means younger faculty members had more positive attitudes towards the technology usage, and they were more likely to use technology in their classes.

Faculty strongly agreed (40%) or agreed (45%) that the responsibility of promoting more technology opportunities within the field of social work rests on social work programs in colleges and universities. Open ended answers revealed mixed ideas about using technology in courses. One faculty reported that students love doing certain tech-heavy assignments. Another wrote that "social work is a human interaction/communication process, too much is lost when technology becomes the focus and not the human interactions". There are a range of beliefs when it comes to this topic.

Interviews with three faculty members were recorded using field notes and guided by Roulston's (2010) reflective interviewing techniques. The questions asked concerned the future of the profession, current usage of technology, and reaching students in this new era. The faculty were a part of a strategic convenience sample and three categories of faculty are represented: low technology user, medium technology user, and a high technology user.

Low Technology User

This faculty member can be described as a low technology user. They reported as never using online social media or even typing on a computer. They conceded that they were stuck in their ways but that also there are no incentives for them to change as their publishing record and academic work have not suffered. Despite their low technology usage, this faculty member has written articles on topics such as social media, online crowdsourcing data, and app development. With regard to online teaching they believe that courses such as research or statistics are communicated well but that practice skills should be taught in person. They described teaching in China recently and that they include more technology in those class sessions because of the demand. They said that they believe smaller schools are using certain technologies to get the edge on larger institutions. They reported video and online video resources as one of the most

powerful tools for students and that technology in the world is both positive and inevitable.

Medium Technology User

This adjunct faculty member can be described as a medium technology user. They reported using Blackboard, texting, and assigning digital photography projects to their students. They believe that teaching technology to students is something social work programs could do more of and that it makes sense because it is safer to experiment in the classroom with new skills versus on the job. They reported a belief in the digital native phenomenon but was skeptical in teaching using technologies that allow students to potentially represent themselves in a dishonest way (i.e. impersonating a student online). This faculty member stated that so much of the profession of social work is relationship building and being able to connect with people, so any future technology curriculum should be guided by this principle.

High Technology User

This faculty member can be described as a high technology user. They do not give their classes hard copies of anything (i.e. syllabi and readings are digital) and they have taught hybrid classes. They are the "king/queen of YouTube clips", have used Skype for guest lectures and in nursing home settings, and actively uses Twitter. Although they said using technology with digital native students might be important to their learning style, they believe that face to face interaction is important for teaching clinical skills. This faculty member recognized the notion that some big schools have the money and resources to take whole programs online, but that most social work programs are not ready to integrate much of the new technology. They believe that social work students should be trained in how to use technology for social work practice. They described a need for a technology evidence base within social work practice and that if we aren't doing it already, then we are behind.

Discussion

The age of a faculty member can slightly influence their attitude towards using technology. This is a logical assumption as people who were born decades before the personal computer became available were not exposed to these technologies in the same way as a younger individual would be. Although the hypothesis that attitude could predict faculty adoption of technology was not confirmed, these results still point toward an interesting possibility. Technology adoption is a complicated process, and one's personal beliefs about a certain piece of technology is only a minor factor in the process.

Technologies that have a Future within Social Work

Smart phone and teleconference technologies have a growing place within social work courses. Distance and hybrid classes are becoming the norm for programs. Video has been and continues to be a very important element within social work education and might expand with social work practice as well. Body cams, video simulations, and video of real client interaction will be a part of future social work education.

Role of Social Work Programs in Student Technology Competency

The role social work programs play in a student's technology competency is complex. The practice of social work is moving towards including new technologies so the question of how social workers learn to use these innovations is important. Faculty have an opportunity to demonstrate the critical application of these modern methods within their classes. This inclusion will better prepare social workers for field instruction and a career beyond. However, the current climate of zero incentives for faculty to teach using technology has to change.

Implications for Future Studies

The social work profession needs faculty to teach with more technology so there is a need for more research on the topic. Future studies should be nationally representative, and include enough predictor variables to adequately model the adoption process. The question of how to get more faculty on board the technology train is essential to the survival of the profession.

References

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. New York, NY: Longman.

Ashery, R. S. (2001). The utilization of technology in graduate schools of social work. *Journal of Technology in Human Services, 18*(1), 5.

Ballantyne, N. (2008). Multimedia learning and social work education. *Social Work Education, 27(6),* 613-622.

Beaulaurier, R. L., & Radisch, M. A. (2005). Responding to CSWE technology guidelines: A literature review and four approaches to computerization. *Journal of Teaching in Social Work, 25*(1), 129-152. doi:10.1300/J067v25n01•09

Bettmann, J., Thompson, K, Padykula, N., & Berzoff, J., (2009). Innovations in doctoral education: Distance education methodology applied. *Journal of Teaching in Social Work, 29*(3), 291-312. doi:10.1080/08841230903018397

Buquoi, B., McClure, C., Kotrlik, J. W., Machtmes, K., & Bunch, J. C. (2013). A national research survey of technology use in the BSW teaching and learning process. *Journal of Teaching in Social Work, 33*(4), 481-495. doi:10.1080/08841233.2013.833577

Bye, L., Prom, K. B., Tsybikdorzhieva, B., & Boldonova, I. (2006). Utilizing technology to infuse international content into social work curriculum: A siberian correspondent model. *Journal of Teaching in Social Work, 26*(3), 41-55.

Chen, B. (2009). Barriers to adoption of technology mediated distance education in higher-education institutions. *Quarterly Review of Distance Education, 10*(4), 333-338.

CSWE. (2008). Educational policy and accreditation standards (EPAS).

Cummings, S. M., Chaffin, K. M., & Cockerham, C. (2015). Comparative Analysis of an Online and a Traditional MSW Program: Educational Outcomes. *Journal of Social Work Education, 51:1,* 109-120

Curl, A. L., & Bowers, D. D. (2009). A longitudinal study of website accessibility: Have social work education websites become more accessible? *Journal of Technology in Human Services, 27,* 93-105.

Cwikel, J., Savaya, R., Munford, R., & Desai, M. (2010). Innovation in schools of social work: An international exploration. *International Social Work, 53(2*), 187-201.

Davis, J. A. (1971). Elementary survey analysis. Englewood Cliffs, NJ: Prentice-Hall.

Dennison, S. T., Gruber, K. J., & Vrbsky, L. (2010). Research literature review on social work education instructional methods: 1998-2008. *Journal of Teaching in Social Work, 30*(4), 399-419. doi:10.1080/08841233.2010.517732

Devaraj, S. Easley, R., & Crant, J. M. (2008). How does Personality Matter? Relating the Five Factor Model to Technology Acceptance and Use. *Information Systems Research, 19(1*), 93-105.

Dombo, E. A., Kays, L., & Weller, K. (2014). Clinical social work practice and technology: Personal, practical, regulatory, and ethical considerations for the twenty-first century. *Social Work in Health Care, 53*(9), 900-919. doi:10.1080/00981389.2014.948585

Fan, W., & Yan, Z. (2010). Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior, 26(2),* 132-139. doi:10.1016/j.chb.2009.10.015

Faria, G., & Perry-Burney, G. (2002). A technology-based MSW program. *Journal of Teaching in Social Work, 22 (3/4),* 155-169.

Faul, A. C., Frey, A. J., & Barber, R. (2004). The effects of web-assisted instruction in a social work research methods course. *Social Work Education, 23*(1), 105-118. doi:10.1080/0261547032000175764

Frydenberg, Mark (2008). Wikis as a Tool for Collaborative Course Management. *MERLOT Journal of Online Learning and Teaching, 4 (2).*

Gelman, C. R., & Tosone, C. (2006). Making it real: Enhancing curriculum delivery through the use of student-generated training videos. Journal of Technology in Human Services, 24(1), 37-52.

Gelman, C. R., & Tosone, C. (2010). Teaching social workers to harness technology and inter-disciplinary collaboration for community service. *British Journal of Social Work, 40*(1), 226-238. doi:10.1093/bjsw/bcn081

Gerard, L. F., Varma, K., Corliss, S. B., & Linn, M. C. (2011). Professional development for technology-enhanced inquiry science. *Review of Educational Research, 81(3),* 408-448.

Giffords, E. D. (2009). The Internet and Social Work: The Next Generation. Families in Society: *The Journal of Contemporary Social Services, 90(4).*

Gustafson, L. F., & Kuhn, A. (1999). Infusing technology into the social work curriculum. *Professional Development, 2(1),* 49-54.

Hylton, M. E., & Albers, E. (2007). The use of interactive television in a BSW program: Comparing experiences of distance and campus-based learners. *Journal of Baccalaureate Social Work, 13*(1), 52-66.

Ives, C., McWhaw, K., & De Simone, C. (2005). Reflections of researchers involved in the evaluation of pedagogical technological innovations in a university setting. *Canadian Journal of Higher Education, 35(1*), 61-84.

Jacobsen, D. M. (1998). Adoption patterns of faculty who integrate computer technology for teaching and learning in higher education. Paper presented at the 98 World Conference on Educational Multimedia and Hypermedia World Conference on Educational Telecommunications.

Jankowska, M. A. (2004). Identifying University Professors' Information Needs in the Challenging Environment of Information and Communication Technologies. *Journal of Academic Librarianship, 30(1),* 51-66.

Kaye, L., W. (1991). A social work administration model curriculum in computer technology and information management. *Journal of Teaching in Social Work, 5(1),* 49-63.

Leron, U. & Hazzan, O. (2000). IT in higher education: why is it so hard and why there is still hope after all? *British Journal of Educational Technology, 31(3),* 243–245.

Li, Q. (2005). Infusing technology into a mathematics methods course: Any impact? *Educational Research, 47(2*), 217.

Liang, B., Commins, M., & Duffy, N. (2010). Using Social Media to Engage Youth: Education, Social Justice, & Humanitarianism. *The Prevention Researcher, 5,* 13-16.

Liechty, D. (2012). Technology, consciousness, and the transitional symbolic self: Implications for social work education. *Journal of Teaching in Social Work, 32*(4), 342-355. doi:10.1080/08841233.2012.705242

Littlefield, M. B., & Roberson, K. C. (2005). Computer technology for the feminist classroom. *AFFILIA: Journal of Women and Social Work, 20*(2), 186-202.

Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? university students' use of digital technologies. *Computers & Education, 56,* 429-440. doi:10.1016/j.compedu.2010.09.004

Menon, G. M., & Coe, J. A. R. (2000). Technology and social work education: recent empirical studies *Research on Social Work Practice, Vol. 10 (4),* 397-399.

Metin, M., Yilmaz, G., Coskun, K., & Birisci, S. (2012). Developing an Attitude Scale towards Using Instructional Technologies for Pre-Service Teachers. *Turkish Online Journal Of*

Okpala, A. O., & Okpala, C. O. (1997). Faculty adoption of educational technologies in higher learning. *Journal of Instructional Psychology, 24(4),* 262.

Parrott, L., & Madoc-Jones, I. (2008). Reclaiming information and communication technologies for empowering social work practice. *Journal of Social Work, 8(2*), 181-197.

Petracchi, H. E., & Zastrow, C. (2010). Suggestions for utilizing the 2008 EPAS in CSWE-accredited baccalaureate and masters curriculums- part 1: The explicit curriculum. *Journal of Teaching in Social Work, 30(2),* 125-146.

Potts, S. (2013). University of Texas Social Work Informatics Syllabus. Retrieved from http://www.utexas.edu/ssw/eclassroom/syllabi/Potts_Suzanne/fl2012sw393t20.pdf

Prensky, M. (2001). Digital Natives, Digital Immigrants Part 1. *On the Horizon, 9(5),* 1-6.

Reamer, F. G. (2013). Distance and online social work education: Novel ethical challenges. *Journal of Teaching in Social Work, 33*(4), 369-384. doi:10.1080/08841233.2013.828669

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). New York, NY: Free Press.

Roulston, K. (2010). Reflective Interviews: A Guide to Theory & Practice. Thousand Oaks, CA: Sage.

Sahin, I., & Thompson, A. (2006). Using fink' theory to interpret instructional computer use by COE faculty. *Journal of Research on Technology in Education, 39(1),* 81-104.

Sahin, I., & Thompson, A. (2007). Analysis of Predictive Factors That Influence Faculty Members' Technology Adoption Level. *Journal of Technology and Teacher Education 15(2),* 167-190.

Saleh, H. (2008). Computer self-efficacy of university faculty in lebanon. *Educational Technology Research & Development, 56*(2), 229-240. doi:10.1007/s11423-007-9084-z

Schmid, R. F., Bernard, R. M., Borokhovski, E., Tamim, R. M., Abrami, P. C., Surkes, M. A., Woods, J. (2014). The effects of technology use in postsecondary education: A meta-analysis of classroom applications. *Computers & Education, 72*, 271-291. doi:10.1016/j.compedu.2013.11.002

Seabury, B., & Maple, F. (1993). Using computers to teach practical skills. *Social Work, 38(4),* 430-439.

Siebert, D. C., & Spaulding-Givens, J. (2006). Teaching clinical social work skills entirely online: A case example. *Social Work Education, 25(1*), 78-91. doi:10.1080/02615470500477953.

Stotzer, R. L., Fujikawa, K., Sur, J., & Arnsberger, P. (2013). Cost analysis of a distance education MSW program. *Journal of Teaching in Social Work, 33*(4), 357-368. doi:10.1080/08841233.2013.826318

Tetloff, M., Hitchcock, L., Battista, A., & Lowry, D. (2014). Multimodal composition and social justice: Videos as a tool of advocacy in social work pedagogy. *Journal of Technology in Human Services, 32*(1), 22-38. doi:10.1080/15228835.2013.857284

University of Minnesota. (2015). *M.S.W. Student Handbook 2015-2016.* Retrieved from http://www.cehd.umn.edu/ssw/Documents/MSW/MSWHandbook2015-2016.pdf

Vernon, R., Vakalahi, H., Pierce, D., Pittman-Munke, P., & Adkins, L. (2009). Distance education programs in Social Work: Present trends and future intentions. *Journal of Social Work Education, 45(2)* 263-276.

Wilson, A. B., Brown, S., Wood, Z. B., & Farkas, K. J. (2013). Teaching direct practice skills using web-based simulations: Home visiting in the virtual world. *Journal of Teaching in Social Work, 33*(4), 421-437. doi:10.1080/08841233.2013.833578

Woehle, R., & Quinn, A. (2009). An experiment comparing HBSE graduate social work classes: Face-to-face and at a distance. *Journal of Teaching in Social Work, 29(4*), 418-430. doi:10.1080/08841230903249745

Yohon, T., & Zimmerman, D. (2006). An exploratory study of adoption of software and hardware by faculty in the liberal arts and sciences. *Journal of Technical Writing & Communication, 36(1),* 9-27.

Young, J. R. (2009). When computers leave classrooms, so does boredom. *Education Digest, 75(3),* 48-51.

Zeman, L. D., & Swanke, J. (2008). Integrating social work practice and technology competencies: A case example. *Social Work Education, 27*(6), 601-612. doi:10.1080/02615470802201630

Zhao, J. J., Alexander, M. W., Perreault, H. W., Lila T., & Allen D. (2009). Faculty and student use of technologies, user productivity, and user preference in distance education. *Journal of Education for Business, 84(4),* 206-212.

CHAPTER 5

CONCLUSIONS

The three research studies within this dissertation contain examinations of technologies as they apply to social work education. While assertions and arguments have been made within the previous chapters; this final chapter of the dissertation is written with the purpose of summarizing prior results and making several definitive arguments. These arguments relate to best practices for certain technologies in the teaching and learning process, issues of who should be teaching Internet and technology skills, a theoretical argument to academics for publishing in open access journals, and a constructive criticism of social work academics and their online social presence.

Summary of Dissertation Findings

Chapter two featured a systematic review of the literature that found a need for more replicable, empirically driven articles. Social media and practice and how to best teach practice skills online are two issues that need more research attention. The review found the most reported results included online ethical considerations, client advocacy best practices, and distance learning feasibility. It was overwhelmingly reported that distance learning is manageable for social work programs. Faculty are utilizing online educational technology and it often attracts students from different locations or walks of life. In a survey of MSW programs offering a degree using distance technology, most described their distance program as “representing a more diverse group of students when compared to the campus program" (Quinn & Barth, 2014, p. 40).

Chapter three found that social work students were entering field placements with acceptable technology skills, as measured by field supervisors. There was a significant difference in the agreement between students and supervisors with regard to where technology skills are taught. Supervisors tended to agree that students learn tech skills in class, while students tended to disagree with the same question. More research is needed on texting applications and database development within the field.

Chapter four found that while age slightly impacts the adoption of technology among faculty members, more research is needed to figure out the tipping point of new technologies. With distance education as an example of an innovation that has reached the tipping point (i.e. most schools have adopted it), attention needs to be paid towards the next great frontier of topics. Potential topics include online relationship building, the hazards of misrepresentation through avatars, or the assembly of a centralized, online repository of social work videos and resources. One of these innovations could be overwhelmingly adopted by social work faculty in the future.

Promotion of Technology Skills

The promotion of technology opportunities within the field begins in a social work student's first semester of class. The instructors of those courses have the chance to impart innovative critical thinking skills pertaining to social justice issues. Faculty can teach these skills. While students appear to be entering the field with enough knowledge about technology in order to be competent, there are higher standards.

95% of faculty surveyed in this research study agreed that social work programs are responsible for promoting more technology opportunities, yet only 26% of students reported learning technology skills during classes. Faculty reported using smart phones in teaching 20% of the time and other studies have put the number closer to 40% (Buquoi, McClure, Kotrlik,

Machtmes, & Bunch, 2013); students and field supervisors reported using smart phones in their work 60% and 70% of the time. In comparing Facebook usage, it was found that Faculty used it 10% of the time, students used it 36%, and supervisors used it 46%. These disparities are troublesome because social work students will be texting, video chatting, and sending documents to future clients. The ethical concerns alone are enough to warrant entire courses on digital relationships within social work.

Technology can promote well rounded education. Fink's taxonomy of significant learning (Fink, 2003) is a model illustrating six facets of how students learn. Figure 5.1 and technology applications are below.

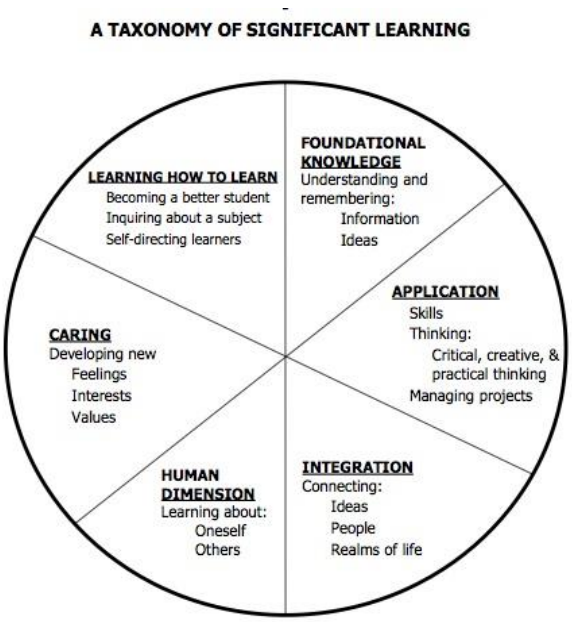

Figure 5.1. A taxonomy of significant learning (Fink, 2003).

Foundational knowledge in a course is the easiest to transmit with the aid of technology (e.g. online class). Application and practice skills are hardest to convey at a distance and completely removed from the physical space of the student. Creative thinking is one part of this

process, however, and group projects involving creating something in the vast online world can teach managing skills. Integration of ideas is best technologically served using a wiki to collate information. The human dimension and caring are especially important to the social work process and can be taught using stories from other people (e.g. YouTube clips, Twitter conversations, news stories). Finally, learning how to learn can include teaching students how to find research from valid and reliable online resources. Fink's comprehensive notion of how to educate gives us a way to look at faculty implementing new innovations.

Open Access Publishing

If a researcher searches the online library databases of a large public institution, that scholar is eventually met with a message similar to: "this highly relevant result was discovered, due to the authoritative indexing provided by [database], details cannot be displayed to unauthorized users" (EBSCO Host, 2016). This is a pay wall to view peer reviewed research. Due to the ideas behind social justice and the duties of public service academics, this notion of restricting access to often publically funded studies is anathema to the research dissemination process as well as to this dissertation.

The purpose of the scholarly articles within this dissertation is to reach scientists, social workers, and international audiences. With that in mind, the majority of publications from this body of work will be submitted to peer reviewed journals that have an open access policy. *Advances in Social Work* is one such journal and their policy states that they provide "immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge" (Trustees of Indiana University, 2007, p. 1). There are also instances of subscription-based journals moving segments of articles to online and

open sources, such as the *Journal of Technology in Human Services* passing the reviews of software and app development to a partner's online website for more access. (Fitch, 2013).

The tenure-track can limit the amount of open-access articles faculty can publish. Due to the high esteem of being accepted in top tier, publisher-owned journals, certain tenure track positions hinder the free dissemination of knowledge. Students and social workers globally are affected as well. On their web site, the American Library Association (2016) stated, "after leaving the educational setting…social workers find that their access to research literature is severely diminished…awareness of open access resources among social work students…is a key component to ongoing professional development and evidence-based practice."

In a recent lecture about where social work will be in ten years, Dean Anna Scheyett said that the speed and volume of information is something that social workers need to talk about in the future and she questioned how to get real time infusion of research into the classroom (Scheyett, 2016). She gave an example of faculty members throwing a PowerPoint online so audiences can get the general results immediately. Ideas like these are opening the access to scientific data.

Social Work Academics and Online Presence

MacKinnon (2009) asked the question, "what can the 'profession' [of social work academics and social workers] do to promote and support greater public engagement" (p. 513) and that question still applies years later. MacKinnon's article concludes by stating a need for more public discourse by social work intellectuals. One facet of the publishing world exists online, including blogs, social media posts, and the aforementioned open access journals. More derivations of public discourse outlets are created every year and some have called the Internet the democratization of information. Newer practices include publishing on Wikipedia (Howard

& Garland, 2015) or submitting raw data from a study to public databases for other researchers to test or replicate. As part of this dissertation process, the online Wikipedia entry for 'digital divide' was updated with a social work reference, but was immediately taken down as it was judged as not having merit by one of the many established wiki authors. Efforts are ongoing to insert relevant social work information into this expanding resource.

Social work faculty are considered public intellectuals. Reamer (2013) argued for more usage of technology within this sense. Social work academics have a duty to engage in public discourse, most often with published scholarly research. There is an opportunity to further inform this communication chain, however. Faculty can publish on a more personal level using blogs, crowd sourcing websites, standard journalistic practices, or using other social media. Academics are often a part of the publish or perish world, and if that is to remain, then perhaps tenure committees should begin to look more at what it means to publish as well as what it means to affect change with research. Also, questions such as what do social work academics study, and why they are significant to the scientific world are important.

Diffusion of Innovation

Rogers' (2003) theory helps understand the future of technology adoption within social work education. Figure 5.2 shows information and communication technology adoption within social work education. This is shown along with the diffusion curve. The innovative adopters and early adopters account for the first 15% of faculty adoption, and the laggards account for the final 15% of faculty adoption. With regard to how this adoption can be influenced, Rogers lists several factors. Two of these factors include communication channels and time. Diffusion would describe interpersonal channels as the most effective for persuading faculty to adopt a new innovation, and might recommend faculty to faculty lessons because these communications are

more effective when the channels are linked by education or position. Diffusion would also describe time dimension as the process by which an "individual passes from first knowledge of an innovation through its adoption or rejection" (Rogers, 2003, p. 20). If social work programs could expose faculty to new technologies first, then this process is more controlled. Thus, programs should implement more technology workshops on cutting edge technological practices.

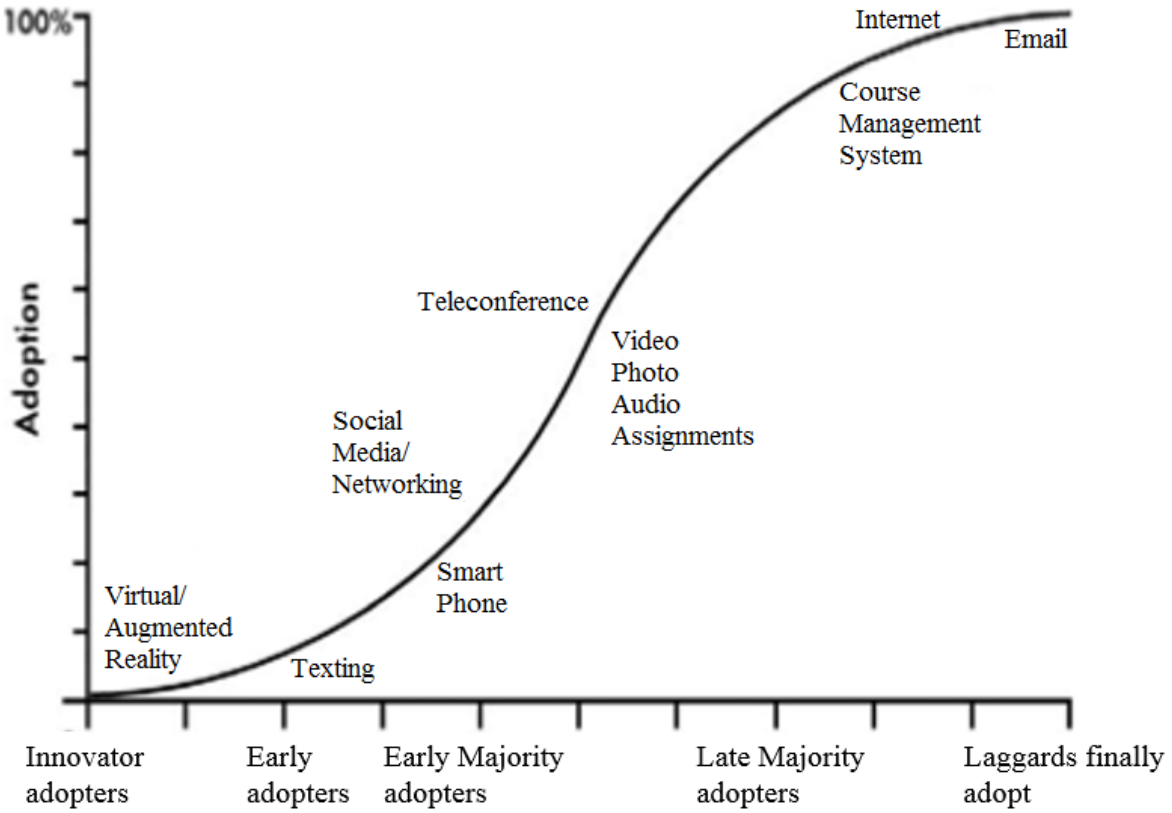

Figure 5.2. Diffusion ranking of technologies adopted within social work education.

Deep Future of Technology within Social Work Education

Technologies related to tele-practice or using more video recording devices are nearing a tipping point among social workers and academics. One day in the future, video or avatars of clients and face to face contact will be almost indiscernible with regard to effectively conducting a home visit, group meeting, or assessment. Digital relationships, online social presence, and conversations with people thousands of miles away will become increasingly essential to social work. The newest innovations, whether called hypertechnology, web 3.0, or augmented reality, will push the bounds of practice. This is because sharing and comprehending a person's social communications is of utmost importance to the social worker. If this means developing more skills related to technology, then it must be done, because "it is more difficult for an IT person to understand human services than it is for a human service person to understand IT" (Schoech, 2014, p. 249).

Social work practice and education are tied to the same boat in an ocean of institutions. Technology is a wind that is blowing. The people who have influence within the profession can choose to use this wind or risk constantly getting swept up in the force.

References

American Library Association (2016). Social Work Liaison's Toolkit: Open Access. Retrieved from: http://www.ala.org/acrl/aboutacrl/directoryofleadership/sections/ebss/ebsswebsite/socialworksocialwelfare/toolkit/openaccess

Buquoi, B., McClure, C., Kotrlik, J. W., Machtmes, K., & Bunch, J. C. (2013). A national research survey of technology use in the BSW teaching and learning process. *Journal of Teaching in Social Work, 33*(4), 481-495. doi:10.1080/08841233.2013.833577

EBSCO Host (2016). Retrieved from UGA Libraries database link, http://eds.b.ebscohost.com.

Fink, L. D. (2003). Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses. San Francisco, CA: Jossey-Bass.

Fitch, D. K. (2013). Editorial: Passing the Torch. *Journal of Technology in Human Services, 31,* p. 297-303, DOI: 10.1080/15228835.2013.866031.

Howard, M. O., & Garland, E. L. (2015). Social work research: 2044. *Journal of the Society for Social Work & Research, 6*(2), 173-200. doi:10.1086/681099

MacKinnon, S. T. (2009). Social Work Intellectuals in the Twenty-First Century: Critical Social Theory, Critical Social Work and Public Engagement. *Social Work Education, 28:5,* p. 512-527.

Quinn, A., & Barth, A. M., (2014). Operationalizing the Implicit Curriculum in MSW Distance Education Programs. *Journal of Social Work Education, 50,* p. 34-37.

Reamer, F. G. (2013). Distance and online social work education: Novel ethical challenges. *Journal of Teaching in Social Work, 33*(4), 369-384. doi:10.1080/08841233.2013.828669

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). New York, NY: Free Press.

Scheyett, A. (2016). Where will Social Work be in Ten Years? *Presentation at the University of Georgia on February 22, 2016.*

Schoech, D. (2014) Human Services Technology, 1980+: Retrospective and Perspective. *Journal of Technology in Human Services, 32:4,* 240-253, DOI: 10.1080/15228835.2014.968432

Trustees of Indiana University (2007). Editorial Policies. *Advances in Social Work.* Retrieved from: https://journals.iupui.edu/index.php/advancesinsocialwork/about/editorialPolicies#openAccessPolicy