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THE LIVED EXPERIENCES OF FACULTY WHO USE INSTRUCTIONAL TECHNOLOGY: A PHENOMENOLOGICAL STUDY

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By

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This qualitative phenomenological study was designed to gain an in-depth understanding of the lived experiences of university faculty who adopt technology for teaching and learning purposes and to determine if adoption affected the way a person taught, worked, and lived. A review of the literature found a gap in the understanding of the lived experiences of faculty who teach with technology, and this study was designed to help fill that gap.

Using a purposeful sampling method with a reputational technique, I targeted 20 faculty members who used technology to teach. The phenomenological method provided an understanding of their experiences as they used technology.

The central research question was: What was the experience of faculty who adopt technology in their teaching?

Participant interviews showed that most faculty started using technology because of one of two reasons: they were encouraged by their department or administration, or they thought technology use would improve the student learning experience. These faculty continue to use technology because they believe it does improve the educational experience, and it brings them efficiencies. All the participants indicated that they use more technology in their personal life because of their technology use in their teaching life. The study revealed a broad variety of technologies being used by faculty. While all used university-supported technologies, many also researched and found free technologies that they used to teach. Faculty looked to university

support systems, and their own personal and professional networks for support and guidance in the use of technology.

These finding have broad implications for faculty, administrators, students, and development and support staff. Implications include paradigm shifts required of all parties in higher education. As faculty become more tech savvy and incorporate technology into their teaching, the way they work and live will change—technology will blur the line between work and home. Administrators should find fiscal and procedural processes that will accommodate and support this way of working. Students will become more engaged in their learning. Development and support staff should develop trusting relationships with faculty members, and not just be a "help desk."

Dedication

This endeavor is dedicated to my wife, Beckie. Thank you for putting up with me and supporting me during all of this.

Acknowledgements

I can't begin explain how grateful I am to my advisor, Dr. Marilyn Grady. She took me in and helped me succeed when I had lost faith in "the system." Her sense of humor, persistence, and faith in me made this possible. She is the kind of advisor that every graduate student should have… I know I was one of the lucky ones.

Thank you Dr. LaCost, Dr. Sanger, and Dr. Steckelberg. Your thoughtful feedback made this study so much better, and allowed me to find so much good stuff! You are all a wealth of knowledge and experience, thank you for sharing both.

Thank you to my family, my friends, and especially my wife. You all watched me go through this process for too many years. You were patient and supportive, and knew when to NOT ask how things were going. You are all the best.

Thank you to my group… we never came up with a name, but we all got through it. Thanks Kathy, Terry, and Dave.

Finally, thank you to the faculty who participated in this study. I appreciate your willingness to give back, and help me finish this journey.

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CHAPTER 1

Introduction

Context of the Problem

Instructional technology use in higher education is a complex topic that has been explored by many researchers. Much of the instructional technology research has focused on the pedagogical benefits of instructional technology and the factors that influence the adoption of instructional technology by faculty.

Celik and Keskin (2009) compared student learning outcomes for a set of learning objectives taught with instructional technology to student learning outcomes for the same set of learning objectives being taught without instructional technology. They found the effective use of instructional technology decreased the amount of teaching time needed for students to learn a set of learning objectives.

To determine how faculty training impacts instructional technology integration, Georgina and Hosford (2009) surveyed faculty at 16 Midwestern colleges and universities. They found significant correlations between technology literacy and pedagogical integration of instructional technology. In other words, faculty who were comfortable with, and knew how to use, technology were more likely to use technology in their teaching than faculty who were not comfortable with technology.

Somekh (2008) reviewed research on the factors affecting instructional technology adoption and found that an important key for successful adoption of instructional technology was focusing professional development on both technical skills and pedagogical practices. The focus on technical skills and pedagogy led to instructors embedding technology in the learning processes. Somekh (2008) found that another factor to the successful adoption of instructional

technology in the classroom was the teachers themselves. With this focus on the educators, training and pedagogical support catered to individual differences and took into account individual teachers' personality types.

Becking (2011) used a mixed-methods approach to examine technology usage by university faculty at a large Midwestern university. She concluded that professional development and instructional technology training for instructors should be pedagogically oriented. She stated, "Instructors need to not only know where to click but also how, why, and when to use chosen technologies" (p. 198).

Research in these areas has produced information about the learning benefits of instructional technology and its adoption, however, little research has focused on the experiences of instructors who adopt instructional technology in their teaching processes.

Statement of the Problem

Researchers do not understand the implications of technology adoption on the way university faculty members teach their courses and on their everyday lives.

Purpose of the Study

The purpose of this study was (a) to gain an in-depth understanding of the lived experiences of university faculty who adopted instructional technology for teaching and learning purposes, and (b) to determine if adoption affected the way a person taught, worked, and lived.

I examined the lived experiences of faculty who used instructional technology and taught at a large Midwestern university. Specifically, I examined:

- If technology adoption affected the way a person taught and worked? If so, how?
- If technology adoption in the classroom affected the way a person lived outside of the classroom? If so, how?

- Why faculty adopted instructional technology into their teaching?
- What instructional technologies faculty adopted into their teaching.
- Where faculty looked for guidance when adopting instructional technology into their teaching?

Answering these specific questions, and, more generally, examining the lived experiences of faculty informs the development of new teaching practices and learning experiences.

In order to develop new theories, training and development processes, and best practices that may help facilitate future adoption of new technologies, it is important to understand how people use and adopt new technologies. It is also important to understand the faculty members' expectations when adopting or purchasing new technology. This information will help other faculty members manage their expectations and analyze their goals and outcomes.

Past research has focused on the pedagogical benefits of instructional technology and on variables that hinder or encourage a person to adopt technology, but researchers have not taken into account the experiences of the instructors or the social variables that may affect adoption.

Technology adoption has been examined through the lens of several different theories, with Roger's Theory of Innovation being the most popular. However, Kidd (2009) argued that not enough research has been done in the area of lived experiences of faculty who are using instructional technology in their teaching methods and processes.

> … Roger's theory and subsequent models presented in this review do not adequately address the faculty's experience or the component of experience during the adoption process, the social or cognitive variables that shape one's ability to adopt ICTs (Information Communication Technologies), not the individual factors that may hinder or accelerate one's decision or ability to adopt technological innovation. Therefore, a

paucity exists in the literature to look into the lived experiences of faculty who adopt ICTs for teaching and learning (Kidd, 2009, p. 157).

A phenomenological approach allowed me to gain a better understanding of the process of adopting instructional technologies by university faculty and how instructional technology adoption changed the way faculty teach and live.

Definition of Terms

For the purpose of this study, "faculty" was defined as professional educators who teach courses for university credit. "Instructional technology" was defined as any technology used to aid in the teaching and learning process.

Research Questions

The central research question was: What were the experiences of faculty who adopt technology in their teaching? Specific research questions included:

- Did technology adoption affect the way a person taught and worked? If so, how?
- Did technology adoption in the classroom affect the way a person lived outside of the classroom? If so, how?
- Why did faculty adopt instructional technology into their teaching?
- What instructional technologies were faculty adopting into their teaching.
- Where did faculty look for guidance when adopting instructional technology into their teaching?

Limitations

The limitation of this study exists in the means of sampling. The purposeful sampling method with a reputational technique does not allow researchers to generalize data to all higher education faculty members. Rather, results provide information for a more in-depth

understanding of this particular phenomenon, and the results are most pertinent only to faculty members who use instructional technology at a large Midwestern university.

Delimitations

A delimitation of the study lies in the process faculty used to select new technologies. Individuals are different in the way they discover, analyze, select, and adopt a specific technology.

Another delimitation is that individual faculty chose which development opportunities they experienced. Faculty members may have chosen not to attend a training class, for example, that may have increased their knowledge about a specific instructional technology, thus influencing their experiences during the adoption.

Significance of the Study

Professional and social implications. A clear understanding of how technology adoption may affect the way a person teaches and works offers information useful to instructional technology researchers and teaching faulty.

Contributions to the literature. This phenomenological study used in-depth interviews to allow instructors to tell their stories of technology adoption. The use of interviews gave ample opportunity for the faculty voices to be heard. The results of the study fill the gap in the literature concerning faculty adoption of instructional technology by telling the stories of the faculty experiences.

Personal knowledge. As a college instructor and an information services professional, I have experienced adopting new technologies in my teaching processes, and I have helped faculty work through the same process. As a result of this study, I have a better understanding of the process of adopting a new instructional technology.

By analyzing the lived experiences of faculty who have adopted instructional technology into their teaching, this study produced five major outcomes:

- Provided insight into the feelings, struggles, and successes of faculty who decide to adopt instructional technologies into their teaching.
- Provided insight into the impact instructional technology adoption in the classroom has on technology use in personal life.
- Provided understanding of how instructional technology adoption affects the way a faculty member develops teaching strategies and how they teach using instructional technology.
- Identified administrative processes and philosophies that should evolve and develop.
- Identified development and support needs of faculty who adopt new technology into their teaching strategies.

Researcher Bias

In qualitative research, personal views can never be kept separate from the interpretation of the data (Creswell, 2005). As a college instructor who uses technology, an IT professional, and a former instructional design professional, my perceptions of the faculty members and their experiences have been influenced by these past experiences.

Because of my background and the fact that I performed in-depth interviews with the subjects, I was an ideal person to reflect upon and extract meaning from the data I collected. I acknowledge the following biases:

- I am an instructional technology professional who supports faculty who use instructional technologies, and develops training and development programs for faculty who want to learn about instructional technology.

- I believe that effective use of instructional technology does improve student learning.
- I am a college instructor who uses technology as a part of my teaching processes.
- I am an early adopter of new technologies. I have found that being an early adopter of technology is both rewarding and unpleasant.
- I have strong feelings about the need for college instructors to use the technology that is available to them and supported by their university.
- I believe that all college instructors have the responsibility to prepare students for challenges they will face in their careers after college; this includes how to use technology in a professional setting.

Conclusion and Summary

Instructional technology use in higher education has become the rule rather than the exception, and faculty who do not use instructional technology in their teaching may soon feel the pressure to do so. This phenomenological study investigated the lived experiences of 20 university faculty members who use technology in their teaching methods. The following chapter details the literature and previous studies relevant to this study.

CHAPTER 2

Literature Review

Instructional technology use in higher education is a complex topic that has been explored by many researchers. Much of the research on instructional technology has focused on the pedagogical benefits of instructional technology and the factors that influence the adoption of instructional technology by faculty. Although research in these two areas has produced valuable information about instructional technology and its adoption, little research has focused on the experiences of faculty who adopt instructional technology in their teaching processes. A description of the research in the areas of pedagogical benefits of instructional technology, instructional technology adoption factors, and faculty experiences with instructional technology follows.

Pedagogical Benefits of Instructional Technology

With the increased popularity of online learning programs at colleges and universities, instructional technology has become a major focus in the field of teaching and learning. Many researchers have identified the benefits of effective instructional technology use in the classroom.

Improved Learning Processes. Celik and Keskin (2009) examined the effects of primary education teachers' technology literacy on students' success. Through the analysis of teachers' surveys and students' scores on a 5th grade performance test, they found the effective use of instructional technology decreased the amount of teaching time needed for students to learn a set of learning objectives, when compared to that same set of learning objectives being taught without instructional technology.

Other research (McGlynn, 2005; Oblinger, 2008) showed that when instructional technology is used effectively, students can achieve stated objectives faster, learn materials more quickly and at a deeper level, and are more interactive and experiential during their learning process, than when technology is not used. Effective use of instructional technology is defined as using technology to create learning opportunities that expand student collaboration, and integrating instructional technology into student learning and actively engaging students (McGlynn, 2005; Oblinger, 2008).

Ajjan and Hartshorn (2008) surveyed 136 university instructional personnel at a large university in the southeastern United States. They found that instructional technology creates an effective learning environment, helps to foster collaboration, allows students to create or share new knowledge, and supports the connection of different pieces of information. They also found that faculty felt integration of instructional technology in the classroom increases student reported satisfaction with the course, improves student learning, improves student writing ability, and increases student interaction with other students and faculty.

Improved Efficiency. Xu and Meyer (2007) analyzed a set of existing data from the National Study of Postsecondary Faculty; the study focused on full time faculty at doctoral and research institutions. The original study posed five questions about email and web use. Xu and Meyer analyzed the answers to the three of the five questions, below:

- Is the computer the primary medium of teaching?
- Are websites used to disseminate class information?
- Are emails used for communication? If so, how?

Xu and Meyer (2007) found that faculty who used instructional technology (email, Web, electronic calendaring) saw an increase in their overall productivity, which freed up time to improve their teaching materials, teaching strategies, and their feedback to students.

Most traditional college students, born between 1989 and 1993, already see the benefit of leveraging technology in their learning, as well as in their everyday lives. These millennial students, or Net Generation students, (born after 1982) tend to be collaborative, technologically sophisticated, multi-taskers, experiential, team oriented and concerned about social issues (Friel, Britten, Compton, Peak, Schoch, & VanTyle, 2009). These students expect technology to be used in their leaning processes, and they expect it to be used effectively.

Prensky (2001) argued that millennial students are digital natives who have spent their entire lives using computers and digital technologies, while the majority of college faculty are digital immigrants who are constantly playing catch-up and have a harder time keeping up with new technologies. In addition, research has shown that college faculty are often slow to adopt new technologies based on fear of failure, disinterest, or aversion to change (Friel, et al, 2009).

Keengwe, Georgina, and Wachira (2010) analyzed faculty training and technology adoption trends, and found that a two-tiered approach (focusing on the technology and the pedagogy) was most effective in improving appropriate integration of technology into classroom instruction. They also contended that since technology changes at such a fast rate, it is not enough to train people on how to use a particular technology, but rather colleges and universities must focus on developing technology literate faculty and students.

The generation gap, as defined by Prensky (2007), in technology use and adoption has encouraged scholars to explore how instructional technology is adopted and effectively used by these digital immigrants to improve the education of digital natives.

Instructional Technology Adoption Factors

Phillips (2005) analyzed the factors that influence adoption of education technology in higher education. Through the use of content analysis of existing research, he determined that the major factors affecting instructional technology adoption are all human factors (not driven by or defined by technology, but rather by the people involved). Next, I examine four human factors that affect the adoption of instructional technology: faculty technology literacy and skills, faculty perception of their own skills, faculty support and training, and faculty motivation.

Faculty technology literacy and experience. In a study designed to determine use levels of instructional technology in education, Spotts (1999) interviewed faculty at a Midwestern university. Based on these interviews, Spotts categorized users into three groups high-level users, medium-level users, and low-level users. He found that most faculty were low-level users of technology and argued that, in order for faculty to effectively use instructional technology in their teaching, they must become more technology literate and move to the high-level users category.

Georgina and Olson (2008) surveyed 237 faculty at 16 Midwestern colleges and universities in the United States. They found that a faculty member who is highly technology literate is more apt to integrate their technology skills into the design of their courses. They also found significant correlations between high technology literacy and successful integration of instructional technology into pedagogical practices. In other words, when individuals with high technology literacy integrated technology, they do so effectively. Overall, Georgina and Olson (2008) found that if an instructor possessed the technology skills needed to integrate instructional technology into their pedagogical practices, it was extremely likely the instructor would integrate the instructional technology.

To determine how faculty training impacted instructional technology integration, Georgina and Hosford (2009) used the same data set as the Georgina and Olson (2008) study, and found significant correlations between technology literacy and pedagogical integration of instructional technology. Faculty who were comfortable with and knew how to use technology were more likely to use technology in their teaching than faculty who were not comfortable with technology.

Georgina and Hosford (2009) confirmed the previous findings of Georgina and Olson (2008) and found a significant correlation between technology literacy and integration of technology into pedagogical practice. They also found that faculty preferred to learn about new technologies in small groups and on their own time.

Faculty perception of technology skills. Salter (2005) surveyed university faculty and found that along with past experiences, educators' perceptions about their own technology skills were a major factor in determining the success of their adoption of instructional technology in their teaching practices. Menchaca and Bekele (2008) studied a hybrid masters program and found that faculty perception of their technology proficiency was critical to student learning. Both studies concluded that faculty who believed they were proficient with technology, faculty who actually were proficient with technology, and faculty who had past experiences with technology were likely to use instructional technology effectively in their teaching.

Faculty perception of their own technical skills was an important concept when exploring why faculty adopt, or do not, adopt new instructional technology in their teaching practices. Ajjan and Hartshorne (2008) found that faculty attitudes and perceived behavioral control were strong indicators of their intention to adopt new instructional technology. Faculty with negative attitudes about instructional technology often reported that they lost control over their content

and processes when they adopted technology, and were less likely to explore new instructional technologies than faculty with positive attitudes. The reverse was also found to be true. Faculty with positive attitudes about instructional technology reported that they increased control and mastery of their teaching, and were more likely to explore new instructional technologies than faculty with negative attitudes.

Improving faculty perceptions about technology and improving faculty technology skills are paramount to improving the adoption of instructional technology in teaching processes. In the next section, faculty training and support as the keys to improving instructional technology use in classrooms is discussed.

Faculty support and training. In their study of the effects of information technology on student achievement, Celik and Keskin (2009) found that additional training and experience implementing instructional technology in pedagogical processes led to teachers who were comfortable with instructional technology and who used it effectively. They also found that effective use of instructional technology by teachers decreased the amount of teaching time needed to accomplish a goal, thus improving teacher efficiency. Based on these findings, the researchers made a case for the Turkish Department of Education to increase the amount of technology focused credit hours required for teacher candidates.

Somekh (2008) reviewed research that focused on the factors affecting instructional technology adoption and found a key for the successful adoption of instructional technology was for professional development opportunities to focus on both technical skills and pedagogical changes. This focus on skills and pedagogy led to instructors embedding technology in the learning processes. Somekh (2008) also found that another factor to the successful adoption of instructional technology was for development to focus on the teachers. With this focus on the

educators, training and pedagogical support catered to individual differences and took into account individual teachers' personality types.

Becking (2011) used a mixed-methods approach to examine technology usage by university faculty at a large Midwestern university. She concluded that professional development and instructional technology training for instructors should be pedagogically oriented. She contended, "Instructors need to not only know where to click but also how, why, and when to use chosen technologies" (Becking, 2011, p. 198).

Faculty motivation. Spotts (1999) argued that faculty would be more likely to adopt new instructional technology if they received academic recognition (promotion and tenure considerations) for the successful adoption and deployment of those technologies.

Sahin and Thompson (2007) used the Learning/Adoption Trajectory model for technology adoption as a basis to investigate faculty adoption level of technology. They surveyed 43 faculty members from a large Midwestern university, and found that knowledge of data analysis tools, self-directed informational sources, and collegial communication all have significant positive influence on faculty members' instructional technology adoption.

In their mixed-methods study, Nicolle and Lou (2008) surveyed 117 faculty members from a large southern university, and then interviewed nine selected survey respondents. Their results indicated that institutional support, peer support and perceived impact on student learning were all important in motivating faculty in integrating technology in their teaching. Specifically, peer interactions and collegiality were both considered important from the instructors' perspective when analyzing instructional technology adoption.

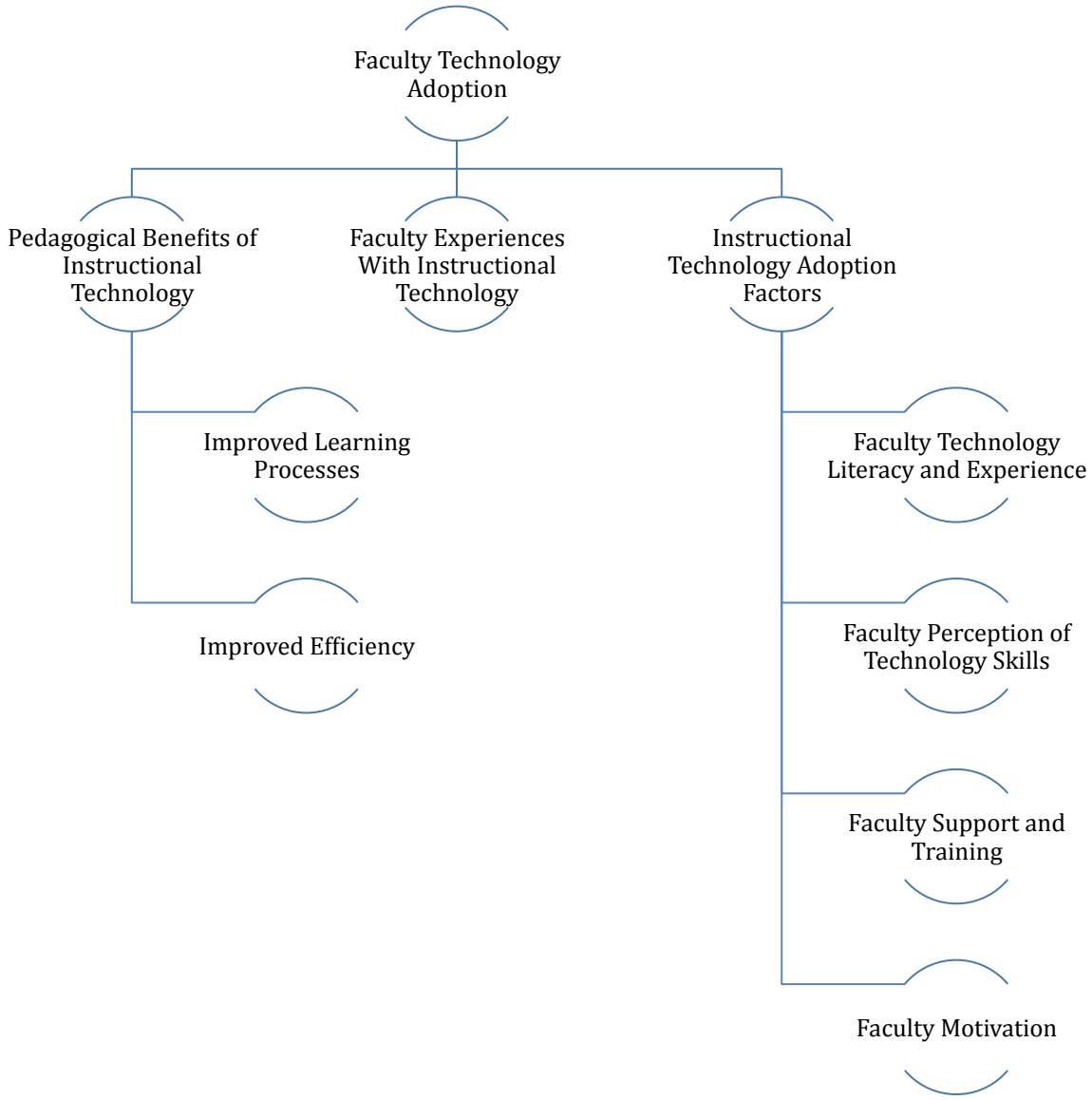
Faculty Experiences with Instructional Technology

In their qualitative study focusing on technology adoption and implications on training, Keengwe, Kidd, and Kyei-Blankson (2009) concluded that faculty support and training was the foundation of faculty adoption of instructional technology. They analyzed the written narratives of 25 faculty members from a large Midwestern university. The narratives were written by the research subjects in response to these questions:

1. How would you describe your experiences in the technology adoption process as it relates to adopting technology for the teaching and learning process?
2. What factors are critical that hinder or influence the technology adoption process?
3. What recommendations would you offer to faculty and university administrators based on these experiences?

The four major themes that emerged from their analysis were: organizational support, leadership, training and development, and resources. Keengwe, Kidd, and Kyei-Blankson (2009) concluded that adoption of technology could not be separated from the natural learning processes of the faculty members as they progress through their careers. They also suggested that the institution create systems to support faculty in their quest to learn and adopt new technology in their teaching methods.

Figure 2.1. Literature Map



Conclusion and Summary

This literature review focused on two heavily researched themes of instructional technology use: the pedagogical benefits of using instructional technology and the factors that influence the adoption of instructional technology. The following chapter provides the methodological foundation for my study, which was an examination of the lived experiences of faculty who adopt instructional technology into their teaching processes.

CHAPTER 3

Methodology

Qualitative design was needed in this research to ensure I acquired the stories that were relayed by the faculty. Creswell (2007) described five qualitative traditions (Table 3.1) as narrative, grounded theory, case study, ethnography, and phenomenological.

Table 3.1. Types of Qualitative Traditions and Major Attributes of Tradition

Types of Qualitative Traditions	Major Attribute of Tradition
Narrative	Reports the life of a single individual
Grounded theory	Moves beyond describing or reporting but acts to generate or discover a theory
Case Study	Focuses on one or more cases within a bounded system
Ethnography	Focuses on entire cultural group
Phenomenological	Describes the meaning of several individuals and their lived experience of a concept or phenomenon.

Qualitative Inquiry and Research Design (Creswell, 2007).

A phenomenological approach was taken since all participants had shared a common experience of the phenomenon (Creswell, 2007).

Phenomenology

According to Moustakas (1994), evidence from phenomenological research is derived from first-person reports of lived experiences. Phenomenology describes the meaning of experiences lived by several individuals and seeks to understand the essence of those experiences (Hatch, 2002).

Phenomenological research can be conducted through two approaches. Van Manen (1990) described hermeneutic phenomenology as focusing on the lived experiences of research participants and interpreting the ‘texts’ of their life (pp. 4). Moustakas (1994) described

transcendental, or psychological, phenomenology as focusing more on the actual experiences of the participants and less on the interpretations of the researcher.

According to Creswell (2009), phenomenological research does not focus on a specific theoretical orientation, but the author tries to build the essence of the experience from the point of view of the participants. Creswell (2007) provided additional detail when he stated "the basic purpose of phenomenology is to reduce individual experiences with a phenomenon to a description of the universal essence" (pp. 58) or an understanding of the very nature of the thing studied.

Creswell (2009) also stated that phenomenological research questions must be descriptive and must look for meaning in the experiences of the participants. In qualitative research the researcher becomes a key instrument in the research process and does not rely on questionnaires or instruments developed by other researchers (Creswell, 2007).

Historically, the phenomenological method has been used extensively in the nursing/health care profession. O'Brien, Martin, Heyworth, and Meyer (2009) and Soreca, Frank, and Kupfer (2009) explored the lived experiences of people in specific health care situations. Both of these studies helped medical practitioners to implement quality improvements for the industry.

These cases served as examples of how the phenomenological method was appropriate for a study of instructional technology adoption by university faculty. In conducting this phenomenological study, I examined how instructional technology adoption affected the way faulty teach, how it affected the way faculty live, why faculty adopted instructional technology in their teaching methods, what technologies faculty used, and how and where faculty found information and resources about adopting instructional technology into their teaching.

I used the hermeneutic approach to phenomenological research and attempted to interpret the experiences of the research participants as they described their technology adoption experiences. Table 3.2 is a visual representation of Moustakas' (1994) qualitative tradition of phenomenology as compared to the steps taken by this researcher in accordance with the same qualitative tradition.

Table 3.2. Moustakas Phenomenology Model and Researcher Actions

Preparing to Collect Data Model	**Researcher Actions**
Formulate the question	Pilot interviews with university faculty helped to focus questions and shape the sampling method.
Conduct literature review and determine nature of study	Literature review was conducted to determine gaps in the research. Interrelated concepts such as instructional technology adoption factors and instructor experience appear to be determining factors in whether faculty adopt technology. Data describing the lived experiences of faculty who adopt technology was lacking.
Develop criteria for selecting participants	Purposeful sampling method with reputational technique was used to select participants who were known to use instructional technology. Thirty five individuals were targeted with an email (Appendix D) and 20 responded. Participants signed an assent form (Appendix E); both were approved through the IRB process (Appendix C).
Develop instructions and guiding questions for phenomenological research interview	An interview guide (Appendix A) was prepared, which ensured the same questions were asked to all focus groups.
Collecting Data Model	**Researcher Actions**
Engage in the Epoche process to assist in creating an atmosphere and developing rapport for conducting the interview	I engaged epoche by leaving biases behind. I focused only what the participants were describing as their personal experiences. I positioned myself in the research in the role of the researcher section.
Bracket the question	Due to my strong interest in the phenomenon being studied, I carefully bracketed my experiences and personal biases, as described in Chapter 1.

Conduct qualitative interview	Interviews were conducted at times convenient for the participants, and in their offices. Twenty participants were interviewed. See Appendix A for the Interview Guide.

Organizing, Analyzing and Synthesizing Data Model	**Researcher Actions**
Develop individualized textural and structural descriptions	Each theme is identified with a quote that is directly linked to a participant, followed by textural and structural depiction of the phenomenon experienced by the participants of this study.
Essence	The essence of this phenomenon lies in paradigm shifts required of all players in the process of teaching and learning. As *faculty* become more tech savvy and incorporate technology into their teaching, the way they live and work changes—Technology blurs the line between work and home. *Administrators* must find fiscal and procedural processes that will accommodate and support this new way of working. *Students* are become more engaged in their learning. *Development and support staff* will have to work to develop trusting relationships with faculty members, and not just be a "help desk."

Summary, Implications and Outcomes Data Model	**Researcher Actions**
Summary of Study	Faculty who start using technology in their teaching often do so because of pressure from their administration or because they have a desire to be better teachers. They typically start off slow, and look on campus and in their personal and professional networks for help and guidance. Once they become adept at using a particular technology, they are more apt to expand that usage or look for other technologies that may be effective in improve learning. Technology adoption at work leads to technology adoption at home.

Relate study findings to and differentiate from findings of literature review	This study helps fill the gap in the literature about faulty adoption of instructional technology by telling the story of the faculty's experiences. For the most part, this study has supported the findings described in Chapter 2. With regard to Xu and Meyer's (2007) findings that faculty who used instructional technology (email, Web, electronic calendaring) saw an increase in their overall productivity; I found this to be the experience of the participants. Keengwe, Georgina, and Wachira (2010) findings that a two-tiered approach (focusing on technology and pedagogy) was most effective in improving appropriate integration of technology into classroom instruction was also supported by the study. The participants also supported Keengwe, Georgina, and Wachira's (2010) contention that it is not enough to be trained on how to use a particular technology, but rather they must focus on becoming technology literate faculty. The study supports Phillips (2005), Georgina and Hosford (2009), Georgina and Olson (2008), Somekh (2008), and Spotts (1999) findings that faculty technology literacy and skills, faculty support and training, and faculty motivation all influence faculty adoption of instructional technology. However, Salter's (2005) findings that faculty perceived themselves as being technologically advanced were more likely to adopt technology than those who didn't, was not supported. A longitudinal study of faculty that follows them through the stages of technology adoption, following them from tech novices to tech savvy teachers.

Relate study to possible future research	A study focusing on student experiences as they navigate a technology rich course. Are the benefits worth the cost? A large-scale quantitative study on the impact of technology adoption on personal technology use. An in-depth study exploring the relationship between faculty and development and support staff. Focusing on how to develop a trusting partnership. A large scale quantitative study of university policies that may affect technology acquisition and adoption.
Relate study to personal/professional outcomes	I now have a better understanding of the process a faculty member goes through when adopting a new instructional technology. I have been working with instructional technology for 10 years, and view new technologies as exciting opportunities. I had forgotten what it like for a person who is not immersed in technology to try to find, analyze, adopt, and assess a new technology. This study has shined a light on that experience for me, reminding me of that perspective.
Researcher's future direction and goals	Throughout my professional career, I have straddled two worlds; faculty and support/administrator. While I hope to keep one foot in the classroom, I will remain involved in the administrative and support world of technology and pedagogy in higher education. I hope to continue to mentor technologically curious faculty, and plan to continue my research in this area. I consider myself an educator, regardless of if I am teaching college students or college faculty.

Phenomenological research methods. (Moustakas, 1994).

Research Design

This phenomenological qualitative study was conducted through interviews of university faculty. Data analysis was based on Creswell's (1994) systematic process of analyzing textual data.

Sampling method. The data for the study was collected during the Spring of 2012. The sample consisted of faculty at a large Midwestern university. A purposeful sampling method with a reputational technique was used. Teddlie and Yu (2007) identifed six purposeful sampling strategies commonly used to either identify a *representative* or *typical* sample, or to identify a sample that allowed comparison across different types of cases. The reputational technique achieved the former, by identifying individuals who possessed the characteristics typical of the population being studied (Teddlie & Yu, 2007)

Faculty who were using instructional technology in their teaching received an email offering them the opportunity to participate in the study. Although the total number of university faculty included 1597 individuals, 35 participants were solicited using purposeful sampling with a reputational technique. Of the 35 faculty members contacted, 20 replied and were contacted to set up interviews. All 20 interviews were carried out.

Using purposeful sampling with reputational technique (Teddlie & Yu, 2007) allowed me to target 35 faculty members from 35 different departments. Thus, the 20 participants were from 20 different departments. It is not known if the sample differed from the population. The sample was small which allowed for an in-depth investigation.

Participants were faculty who were known to me and who had adopted instructional technology in their teaching processes or were adopting instructional technology in their teaching processes at the time of data collection.

Data collection procedures. IRB approval was obtained before conducting the research. Prior to collecting data, faculty were given written instructions and notified of their voluntary participation in the research and right to refusal. Each subject received general instructions, study descriptions and intent, IRB approval notification, and an informed consent form. Participants were asked to sign the Informed Consent before interviews were conducted. All data collection took place during a 4-week time frame during March and April of 2012.

In-depth interviews were conducted in order to gain insight into the participants' experiences. Open-ended questions were asked to understand how participants felt about their experience with technology (See Interview Guide Appendix A). I took notes and recorded my observations during each interview. All interviews were recorded using digital recorders. Each interview was transcribed by a professional transcriptionist, who signed a confidentiality agreement (See Appendix B).

I used my iPhone™ as the primary recording device, and a Sony digital recorder as a backup. I had to use the backup digital recording for one interview when the iPhone™ recording was inaudible. I synced my iPhone™ with iTunes™, and then placed a copy of each digital recording in a private Dropbox™ folder that only the transcriptionist and I could access.

Once the transcriptionist returned the transcript via email, I deleted the digital recording from the Dropbox™ folder, keeping the original copy of the digital recording on my personal computer hard drive. I then downloaded the transcript to my personal computer hard drive and deleted the email from the transcriptionist. My personal computer is backed up nightly on an external hard drive located at my home.

The IRB approval can be found in Appendix C. Text of the email invitation to participants is in Appendix D. The Informed Consent form is in Appendix E.

Data analysis. Data analysis was performed following Creswell's (1994) systematic process of analyzing textual data. These eight steps helped me systematically process the qualitative data.

1. Read through all the transcriptions and jotted down notes to get a sense of the whole.
2. Picked one document and asked: What is this about? Focused on the underlying meaning.
3. Made a list of topics and clustered the similar topics together. Separated the topics into major topics, unique topics, and leftovers.
4. Developed abbreviated codes for each topic, and then read through the transcripts and assigned codes to appropriate segments of the transcripts.
5. Grouped related topics into categories, and used descriptive wording for the category names.
6. Finalized the abbreviations for the topics found in each category and alphabetized codes.
7. Grouped the data based on their assigned category and performed preliminary analysis.
8. No data needed to be recoded.

I used MAXQDA, qualitative data analysis software, to analyze the transcribed interviews because of the large amount of data created by 20 in-depth interviews. Using MAXQDA, I identified 49 individual topics and winnowed those down to eight themes. During this process, I reviewed extract key phrases, terms, and identified meaning from individuals' experiences. I used the memo function of the software to make notes about, or tag, specific passages to clarify the context of the codes I created.

After coding all the transcripts, I reviewed my field notes from each interview and revised codes to reflect additional information. I used descriptive quotes from the interviews illustrate each theme and to write descriptive summations of faculty experiences.

Finally, I interpreted the data and drew meaning from both single instances and aggregated themes. Overall meaning emerged from this collection of stories, instances, and themes.

Participants

Purposeful sampling methods are often used in qualitative research studies so that the participants have experience in the phenomenon being studied. Creswell (2009) recommended selecting participants who can provide information about the phenomenon being studied. For this study, participants were selected because they were known to be using or adopting technology in their teaching. All participants were given pseudonyms. Participant demographics are in Table 3.3.

Twenty faculty members who had a range of experiences in teaching, technology adoption, and technology use were selected for the study. Participants' academic rank ranged from lecturer to full professor, with three lecturers, four professors of practice, seven assistant professors, three associate professors, and three professors. Ten of the participants were female and 10 were male. The 20 participants came from 20 different departments. The departments represented were: accounting, advertising, biochemistry, biological sciences, broadcasting, communication studies, economics, English, entomology, food sciences and technology, interior design, law, management, math, mechanical engineering, modern languages, music, special education & communication disorders, statistics, and teaching learning & teacher education.

All participants defined instructional technology as technology that derived from or related to a personal computer, and is used for instruction or facilitating student learning. Of the 20 participants, two had used instructional technology for their personal learning as students. The remaining 18 had not experienced the use of instructional technology as students.

Thirteen participants had used technology in their teaching for five to ten years. The remaining seven participants had used technology in their teaching for less than five years.

All 20 participants were currently using, or had used, instructional technology in a face-to-face class to enhance learning and efficiency. Ten instructors were currently teaching, or had taught, a completely online course. The remaining 10 participants had never taught a completely online course. All participants were given a pseudonym for data analysis and reporting purposes.

Table 3.3. Participant Demographics

Name	Academic Rank	Gender	Student With Technology	Years Teaching with Technology	Taught Online
Professor Artie	Associate Professor	Male	Yes	<5 Years	No
Professor Blake	Lecturer	Male	No	5-10 Years	No
Professor Caan	Associate Professor	Female	No	5-10 Years	Yes
Professor Diller	Lecturer	Female	No	<5 Years	No
Professor Eagle	Professor of Practice	Male	No	5-10 Years	No
Professor Farha	Professor of Practice	Male	No	<5 Years	Yes
Professor Gregory	Professor	Male	No	5-10 Years	Yes
Professor Hilt	Assistant Professor	Female	No	<5 Years	Yes
Professor Ian	Assistant Professor	Male	No	5-10 Years	Yes
Professor Jach	Professor	Female	No	5-10 Years	Yes
Professor Knapp	Assistant Professor	Male	No	5-10 Years	Yes
Professor Leroy	Associate Professor	Male	No	5-10 Years	No
Professor Mavis	Assistant Professor	Female	Yes	<5 Years	Yes
Professor Nadal	Professor of Practice	Male	No	5-10 Years	No
Professor Oak	Assistant Professor	Female	No	5-10 Years	Yes
Professor Parker	Lecturer	Female	No	<5 Years	No
Professor Quaid	Assistant Professor	Female	No	5-10 Years	No
Professor Riker	Assistant Professor	Male	No	<5 Years	No
Professor Shannon	Professor	Female	No	5-10 Years	Yes
Professor Taft	Professor of Practice	Female	No	5-10 Years	No

Demographics of interviewed sample.

Validity and Reliability

For the study, I used Creswell's (1994) approach to validity and reliability in qualitative research. Following are the techniques reflected in the study.

Internal validity. Internal validity was addressed through use of an external auditor and clarification of researcher bias.

According to Creswell (1994), internal validity of a qualitative study can be addressed through several procedures. I addressed the issue of internal validity through the use of an external auditor. I provided an audit trail by keeping a research field journal with notes, dates times of key decisions, interview information, copies of transcripts, data analysis procedures and decisions, and data provided by MAXQDA. The external auditor was able to follow the audit trail to determine accuracy of the analysis based on the review of materials.

My bias as a researcher in this study was articulated in Chapter 1.

External validity. Although results of the study are not generalizable to other populations, the uniqueness of the experiences described provide rich detail for those who want to understand the lived experiences of instructors who adopt technology in their teaching. t

Reliability. Reliability was established through detailed protocol for data collection and analysis, rich detailed description of the data and results. This information provides a framework for comparison for other researchers who may be interested in conducting a similar study (Creswell, 1994).

Ethical Considerations

Confidentiality was maintained by assigning each participant a pseudonym to be used instead of his or her name. Each participant signed the informed consent form that explained the research study and that any participant could drop out of the study at anytime. All recorded

notes, digital and written, were stored in a locked file cabinet in my office and will be housed for three years. Data and notes are also available to my advisor.

Role of the Researcher

Like many who choose a qualitative research model, I had preconceived notions, strong beliefs, and feelings about the topic I studied. I have been a teacher for 20 years and have been teaching with instructional technology for 10 of those years. I have worked in the capacity of consulting with and supporting faculty who use technology for seven years. I bring significant personal experiences to this research project.

My passions for teaching and technology have been the driving force behind my doctoral program and this research. When I work with faculty who are starting the process of using instructional technology as part of their teaching methods, I reflect on myself ten years ago, in 2002. Granted, the instructional technology ten years ago was not as advanced as instructional technology in 2012, but the feelings of doubt, the fear of failure, and the dread of learning something new are the same.

As teachers, we want students to view us as competent and professional, often technology has the ability to make us look, and feel, the opposite. I encourage faculty to take that risk, be OK with failure, and use technology to make learning easier, more enjoyable, and more efficient for their students.

In my work, I have seen young faculty members starting their careers with boundless energy and the desire to try something new. When I run into these same teachers two or three years into their academic careers, many have lost most of that energy as demands of committee work, the stress of the promotion and tenure processes, and the demand to secure grant funds have taken precedent over their teaching responsibilities. I want to find a way to help those

faculty members regain their excitement for teaching and for learning something new, and I want to help bring a level of efficiency to their professional lives that will benefit all aspects of their work. I want to help them accomplish this with the integration of instructional technology.

Creswell (2009) stated that bias is not a word normally used in qualitative research, but the researcher needs to be reflective while interpreting data. I put aside my feelings on this topic when I collected and analyzed the data.

Conclusion and Summary

Using the hermeneutic approach to phenomenological research allowed me to interpret the experiences of the research participants as they described their technology adoption experiences. This methodology sets forth the framework and specific process I used to conduct the research and analyze the phenomenon.

Chapter 4

Themes

The purpose of this study was to gain an in-depth understanding of the lived experiences of university faculty who adopted instructional technology for teaching and learning purposes, and to determine if adoption affected the way a person taught, worked, and lived. Initially, 49 codes (found in Table 4.1) emerged from my analysis of the interview transcripts.

Table 4.1. Codes.

Student-Centered	Student-focused	Presentation Software	Performance Based	Students encouraged /excited	Make content applicable to real life	Content applicable to real life
Performance Based	Frees up time to change teaching	More Organized	Visual Cues/ Representation	Department Influence	Improve Teaching & Learning	Interest In Technology
Efficiency	Feedback on Teaching Performance	I learned with technology	For the environment	No More "Two Worlds"	Computers @ Home	Entertainment
Family Communication	Photo Sharing	Calendaring and Scheduling	Self Perception of Tech Knowledge	Colleague Reaction	My teaching has not changed	Tech in online courses only
Free on the Web	Social Software	Resources on the web	Blackboard	More Efficient	Lecture Capture/ Recording	Collaboration Technologies
Personally Purchased Software/ Hardware	Specific type of computer	Student Response	Online Assessments	Mobile	Personal course web site	Publisher Software
Data gathering software	Performance Based	Tech Staff	Online Research/ Google	UNL Colleagues	Colleagues	Technology Failures

From the 49 codes, eight themes emerged and were analyzed to gain a true understanding of the lived experiences of faculty who adopt technology into their teaching practices. Those themes were:

- I have a better awareness of and engagement with students
- I like free stuff
- I guess I'm kind of slow to be dragged into it
- There is this guy on campus named Heath Tuttle
- That whole distinction is idiotic
- They think I know more than I do
- It was a real nightmare
- I don't even use a pen anymore

The chapter is in "the words" of the participants. Their words are significant because they offer insight into the experiences of the participants as they adopted technology for teaching and learning purposes.

I Have A Better Awareness Of, And Engagement With Students

When asked if their use of technology has changed the way they taught, 18 participants said "Yes," and talked about how technology has enhanced or improved the student experience in some way. All 18 believed that students benefited from technology use, and that is one of the reasons they continue to use technology. Some participants reported that the use of technology made them more efficient, which allowed them time to focus on their teaching and student interactions. Others stated that some technologies allowed them to develop learning experiences, learning activities, and assessments that were student-focused and directly applicable to the students' lives. Although some reported that technology allowed them to develop-performance

based assessments, which allowed students to "show" what they had learned, others reported that they knew students benefited from their technology use because of direct student feedback.

Although most of the participants readily admitted that technology changed the way they taught and perceived learning, two did not. Professor Knapp said that he continued to teach his face-to-face classes the same way he did 20 years ago, but he continued to enhance and develop his online courses. Professor Gregory said that his technology use in online courses did not affect the way he taught his face-to-face classes, and did not influence his educational philosophy. However, both readily admitted that their students benefited from their technology adoption in the courses.

Efficient technology led to improvement. Professor Blake talked about how he easily found music and videos on the internet to use as examples in his music history class. He no longer had to search for music, or convince the library to purchase music. Since he could easily find the music he needed, he used the time he previously spent finding music to develop better, student-focused assessments.

The assignment tool in Blackboard saved time and allowed Professor Eagle to give students feedback more quickly than he had been able to previously. This quick turn around allowed him to provide feedback to students on rough drafts of assignments a day or two earlier than he had been able to before using the assignment tool. Professor Eagle viewed this efficiency as an improvement in his teaching practices and as an improvement in the students' experiences

Professor Jach talked about using technology to free up time in the classroom that could then be used for more student-focused interactions.

> I've podcasted lectures, podcasted videos, podcasted things that they can do on their own time and their own convenience, instead of showing it in class for example, and then

> spend the time in class trying to get that in a one-on-one interaction, discussion of cases, etcetera.

Professor Mavis talked about how her technology use improved her personal workflow. Adopting technologies like her smart phone, online file storage, and well-designed software interfaces saved her time, which she used to improve her teaching. She saw the value of technology that was easy to use and required fewer mouse clicks. "I'm sorry, I feel like I am just clicking all the time. Is that silly? I don't wanna click anymore." The time she saved by not clicking was used for instructional improvement and for developing content.

Student-focused and applicable to students' lives. Through the development of a student-focused environment, instructors enhanced student engagement and student interest in the content. A student-focused class structure allowed students to take more responsibility for their learning and to draw connections between the new material and their lives.

Professor Blake said the simple fact that technology allowed him to use examples that students found interesting made his teaching more relevant and effective. "I am bringing all this stuff in. Today we were listening to Nine Inch Nails, and I was able to turn it up really loud and it sort of parted your hair."

Student engagement with the material and the instructional technology was also important to Professor Eagle.

> I do want them to try to use the material to be engaged, the technology to be engaged. I feel it's allowed me to… incorporate more content into the class than I would of done before, in terms of, finding interesting clips if I'm talkin' about Edward R. Murrow and the,… live reporting he did from the bombing of London back in the '30s and '40s that I don't have to, I can pull up a quick clip and just drop it in very quickly to give 'em a little

taste of it.

Giving students the opportunity to learn anytime and anywhere was important to Professor Knapp. Although he stated that technology had not changed the way he taught, he talked about how technology allowed students to learn from their home, from war zones, and from work. He viewed this type of convenience as being a key component of modern teaching and learning. "You know one of the reasons people take online courses is to have the flexibility, and not be tied to a time and place, and then be able to fit it in whenever it's convenient if they want."

Professor Caan consciously evaluated the way she taught her class, and eventually adopted technology and changed her methods to be more student-focused in her classroom.

> Our class is set up where we have like six stations, and so students work together as an interactive group. So we give 'em the laptops and we pose these… Are you familiar with the 4E Learning Model? Where you have a chance for students to explore and observe, and you have a chance for students to ask questions. Then you go through as the instructor, and then you add to that piece, and then there's the enhancement exercise that they do. We've been working with teaching them in Teacher Ed to adopt this model, so that way our lab is more student driven as opposed to instructor driven.

Professor Leroy helped to redesign the entire curriculum of his program based on technology use and student needs. As the coordinator of the elementary education program, he recognized that if the department expected students to use technology in their profession as elementary school teachers, they had to model that behavior when training these future teachers. This change came when he realized "the more time I spend as the education coordinator, the

more feedback I've gotten from the field that one of the priorities for principals and superintendents as they hire, they want to hire teachers who are competent technologically."

Technology allowed Professor Hilt to give students real world experiences that would be helpful to them once they started their professional careers. She believed she provided experiences for her students that gave them an edge over their peers after they graduated and looked for a job.

> If you are looking to develop skills, I think technology is absolutely essential in order for our students to be competitive in the job market. If you are looking to develop grad students, it would look different. You know what I mean? It depends on the overall objective of the four-year degree, and I think that is where the great debate comes in. You know, do we really need technology if we are teaching theory? Well, no, but if you are trying to teach your students to be effective in a world outside of their four year college degree, this is the kind of thing that puts them head and shoulders above other people. And it helps them take whatever it is you are teaching them and apply it to a relevant context that will help them bring sort of a "WOW!" factor.

Professor Riker summed up the perspective of many of the participants when he said; "I have a better awareness of, and engagement with students."

Performance-based. Many of the instructors reported that technology use allowed them to develop performance-based activities, assignments, and assessments that required students to show what they knew. By allowing students to take their knowledge to the next level and demonstrate they had mastered the content, the instructors increased the likelihood that students would retain the information.

Professor Caan discussed adopting free online tools that allow students to demonstrate their learning.

> And so the Google Moderator works really, really well, ‘cause we provide students with specimens, and then we ask ‘em to go through and identify characteristics that they think why these groups fall into the same box, what’s different between the insects in these two boxes and that, then they present ‘em through Google Monitor.

Professor Caan said she also developed instructional tools that tested student performance before they took a quiz. “We have developed more of these, I would call ‘em more like games for students to go to that were kinda like, them to see if they were ready to come in and take a quiz.”

Professor Diller stated that she used performance-based assessments for her modern language students. Technology allowed her to collect numerous student recordings, assess them, and give verbal feedback in the matter of a few days, which would not have been possible without digital recording technology.

Digital photography, and a free online photo storage and sharing service allowed Professor Farha to develop a performance-based assignment.

> Students that were in London, I gave them assignments where I gave them each a building and they had to photograph the building, and they had to post… say 20 photographs of the building on Flicker, and they had to post information about the building which would be pertinent for an architectural historian, and I’m an architectural and design historian.

Professor Hilt stated that online communication and virtual conferencing technologies helped put students in situations where they could prove they understood concepts and

experience. By requiring them to perform with the technology, professor Hilt was able to assess the students working with technology they were expected to use once they started their careers.

> We talk about virtual technologies a little bit and it is very passing, it is very 'well here is what a virtual group decision making technology looks like.' That is very abstract to the students, but when we pull them into an actual virtual meeting room, all of the sudden the experience is there. So it is talking about concepts, and applying concepts in that experience in a way that I couldn't do without the technology.

Others talked about using online simulations that gave students immediate feedback on their performance. Professor Jach talked about ethics computer simulations that students complete outside of class. The program scored student responses to ethical cases, gave them immediate feedback, and allowed them to redo the simulation to hone their skills and knowledge. Professor Diller also talked about using online simulations that allowed students to practice speaking in a specific language, and the system critiqued their pronunciation and word selection. Both believed this type of immediate feedback and focus on the student performance gave the students a sense of immediacy and concrete feedback that was hard to achieve without technology.

Student response. Although all of the participants reported that their students benefited from their technology adoption, many reported mixed responses when directly questioned about how the students felt about, and reacted to, the technology when it was first introduced.

Professor Blake had the most positive experience when he asked students for feedback on the online component of his face-to-face class. "I asked students for feedback and they were supportive of it [Blackboard] and they like it, and they especially like the convenience of taking their tests online." On the opposite end of the spectrum, Professor Leroy talked about student

reactions when they were all handed an iPad to use in his class. “We always have a few students who resist…. I had two students in the whole classroom, I had two students who completely resisted. How can you resist the iPad?”

Professor Caan believed that students who did not have experience with technology or online learning were often at a disadvantage when faced with the requirements of her completely online course.

> A lot of undergrads I think come in thinking that an online course is maybe gonna be easier than the face-to-face course, and so, you know, they don’t prepare like they should for the first examination, and, you know, that really shows. Or, they’re not keeping track of when deadlines occur, so they fall, see themselves falling behind in the semester, and missing out on opportunities to gain some points in that area.

Others talked about how students past experiences with technology raised their expectations. Several talked about students “expecting” certain technologies in their classes because they had similar technology in other classes or in high school. These participants explained how they felt like they had to adopt technology in order to stay relevant. Professor Jach spoke specifically about her experiences.

> When I started teaching, it was back before PowerPoint even. And so as these things have been developed, if you don’t adopt them, you’re going to appear to be the dinosaur. So that’s what I mean when I, you kinda get swept along by it. The students… it was almost as though it was natural. They, you know, were used to it, they expected it.

Professor Parker spoke of her students’ expectations with her use of graphing calculators and Blackboard.

> I think students were more encouraged than I was, because in many cases, students had used… the graphing calculators in high school. Not all of them, but many of them. Some of the students eventually had already seen Blackboard, some high schools are using it. The online… program for the homework was a bit more of a learning curve, but now it seems like since we've used it so long, I don't know if word travels, or whether students are just that much more technologically savvy, but, they don't really have problems adapting to it at all. They really just catch on to it very quickly.

Professor Shannon talked about how students often pushed her to use more technology for their convenience, but at times she resisted for pedagogical reasons, "… I am always trying to react to what students want, but I also have to make my own decisions as to how I can use technology the best to achieve my objectives."

Although all 20 participants indicated that their technology adoption benefited students, and in some cases was because of students, they had different ideas about just how their students benefited from technology. Some were focused on how technology gave them time to improve their teaching practices, others identified technologies that were performance based and made the learning experience more student-focused, and a few identified actual experiences with students that indicated that students benefited from technology adoption in their learning.

Individual responses to the theme **I Have A Better Awareness Of And Engagement With Students** are in Table 4.2.

Table 4.2. I Have A Better Awareness Of And Engagement With Students

Participants	Efficient technology led to improvement	Student-focused and applicable to students' lives	Performance based	Student response
Professor Artie	Yes	No	Yes	No
Professor Blake	Yes	Yes	No	Yes
Professor Caan	No	Yes	Yes	Yes
Professor Diller	No	No	Yes	No
Professor Eagle	Yes	Yes	No	No
Professor Farha	No	No	Yes	No
Professor Gregory	Yes	No	No	No
Professor Hilt	Yes	Yes	Yes	No
Professor Ian	Yes	No	No	No
Professor Jach	Yes	No	Yes	No
Professor Knapp	No	Yes	No	No
Professor Leroy	No	Yes	No	Yes
Professor Mavis	Yes	No	No	No
Professor Nadal	Yes	Yes	No	No
Professor Oak	Yes	No	Yes	No
Professor Parker	Yes	Yes	No	Yes
Professor Quaid	No	No	No	Yes
Professor Riker	No	Yes	No	No
Professor Shannon	No	No	No	Yes
Professor Taft	Yes	No	Yes	No

Ways technology adoption has changed teaching for participants.

I Like Free Stuff

All 20 participants talked about the different types of technology they used in their teaching. Some of the participants talked about how their adoption of the technology and student reaction to the technology were both heavily influenced by the type of technology used. Because of this point of view and the wide variety of technologies available for faculty to use, it was important to report on the type of technology used by the 20 participants.

There was a lot of variation between the participants in terms of the technology they used. For example, all 20 participants indicated that they used, or had used Blackboard (the institutions supported learning management system), although only one participant spoke of using software and resources provided by a publishing company and only one participant spoke of using a student response system (clickers).

Blackboard. All 20 participants reported starting slow when they first started using Blackboard. Professor Farha said, "I first decided in the most minimal way that I was just using Blackboard to send out emails, maybe to post messages, and as a grade book that was no longer on paper." Ten participants went on to utilize Blackboard fully and teach fully distance courses, and 10 used it only in their face-to-face classes. Professor Caan taught fully online classes utilizing Blackboard as her primary learning management system and said, "Blackboard is very important to my teaching, it gives students a place to interact, and having their own learning environment when they interact." On the other end of the spectrum, Professor Artie talked about using Blackboard for basic communication with his students, but he built and hosted his own personal course website. He felt that this allowed him the freedom to "design and update it" however he wanted.

Four of the participants, Professor Eagle, Professor Hilt, Professor Jach, and Professor Quaid, all talked about taking advantage of the online assessment tools in Blackboard. They all talked about the efficiency of having a system that graded quizzes and tests for you, and they all mentioned the convenience for students, who were able to take assessments anytime and anywhere.

Free on the web. According to Professor Mavis, free web resources and software programs have dramatically changed what she was able to do in her classroom. Nine other participants agreed and stated that they often went on the web to look for free resources, or for free software programs and services to help them accomplish their teaching goals. Professor Mavis's comment of, "I like free stuff," reflects the comments of all these 10 participants.

Professor Taft discussed using Google Docs in her writing class. She explained how this free technology ended up being a significant part of her teaching process. "My students loved how easily they could share their work, give peer feedback, and receive my feedback…. All that from something that is free!"

Six of the participants mentioned using free social sites. Facebook, Twitter, four Square, and Glogster were all mentioned. Professor Eagle talked about using Four Square for student management during the 2010 Special Olympics.

> Foursquare. Two summers ago with the Special Olympics class that we taught. And because they had, it was a combination advertising, print, and broadcasting class all working together on covering stories, then they had reporting crews out at all the different venues that were happening while the Special Olympics were in town. The teacher actually became the mayor of the class, and he had all the kids check in from all the different sites they were attending, so real quickly they could figure out who's where.

> So if some major celebrity was gonna be appearing at the bowling venue, they could get online and see where everybody was, and they could quickly get a hold of people and say you're close, just zoom over here and cover that.

Presentation software. Of the 20 participants, nine talked about using presentation software in their classes. Eight mentioned PowerPoint and one mentioned Keynote. Although some talked about taking advantage of these software programs to enhance face-to-face presentations, a few had progressed in their use of the software and were doing voice overs on their presentation to create an online lecture.

The participants who use presentation software in their face-to-face courses all talked about using the technology to provide students with a copy of the presentation before the class. This provided the students with a copy of the notes so they did not try to write everything down and "miss the really important part of the class," according to Professor Shannon. Professor Quaid talked about providing her lecture notes via PowerPoint the night before the class to give students time to preview the materials. Professor Blake said he used Keynote because it allowed him to produce and present a "production" for his students. He also stated that he preferred Keynote over PowerPoint because, "the stuff you can do in Keynote is just beautiful."

The participants who use presentation software to take advantage of the voice over capabilities and create online lectures all said that this has helped them teach their online courses. Professor Ian talked about his decision to use voice over in his PowerPoint presentations and the way that voice over PowerPoint let his personality shine.

> Voice over PowerPoint. And I, you know, I don't necessarily say that my method is the best, but I will say it's the best for me. I think different teachers, are you know kind of a frustrated showman. I like to show off, and I like to perform.

> And… you know, I give a lot a thought into, in addition to focusing on the content, I give a lot a thought into how's the best way to tell the story, or to show this. So my lectures have a lot of demonstrations. I try to bring some humor into it. I also really, really try to involve the students. My classes have often been described as a conversation rather than a lecture. And… you know it's, that's the element I wanted to bring. I think other professors, other people might be uncomfortable teaching that way, but it works for me.

Specialty hardware and software. Nine of the 20 participants mentioned using specialty hardware and software. All of their examples were technologies that were necessary to teach their specific course, or in their specific discipline. None of the technologies mentioned were supported by the university or their department. A few of the participants discussed specific technology that they used to teach, but most discussed specific technology that they required their students to use. Some of these technologies were free, but some required significant investment by the students.

Professor Diller required students to use Audacity, a free software programs that students downloaded from the internet, while Professor Blake required students to purchase Logic Studio Pro for use in his audio recording class. Professor Eagle required sound editing software, but was not specific about what technology the students used. He was more interested in the final outcome.

> So for instance in the audio classes, we provide Adobe Audition in all of our studies, but I don't require that students use it past the first assignment…. I don't much care what you use as long as I get a product—a product in this format that I can use on the radio station. So, if students have their own versions of Audition

> they want to use at home, or if they've got Garage Band, or Sound Booth, or Pro Tools, or whatever programs they've got.

Professor Parker required students to use a graphing calculator in her algebra class. Eventually, graphing calculators became a requirement for all algebra classes in the department.

The faculty who talked about their personal use of specific technologies seemed to focus on hardware. Professor Riker and Professor Artie both discussed their use of Tablet PCs to more effectively present class material by drawing on pictures or presentations in real time. Professor Caan talked about using her Mac computer to easily create video and audio messages for her students.

Lecture capture and collaboration technologies. Eight of the participants talked about using lecture capture software to record live lectures from their classes, or to conduct real time, virtual lectures with students who were at a distance. All specifically specifically mentioned the systems supported by the university, Adobe Connect and Camtasia Relay. Professor Leroy talked about using Adobe Connect to allow students, who typically commuted two to three hours to class, to stay home during bad weather and still participate in class. Professor Leory said, "those students appreciated being connected."

Professor Hilt talked about using Adobe Connect to allow students to complete group assignments and gain skills for their future careers.

> I have actually had face-to-face students that have requested it. I would say they prefer the face-to-face meetings, but these Adobe Connect sessions give them a sense of security… and they can use it as a last-ditch effort if they can't get

> together. Many have used the Web cam, and actually go well beyond just the chat function, which is what they typically will do and what we talk a lot about in this class is, this is a business and professional education course, this gives them a real edge in business preparedness. Because they are able to take what they are learning, and sort of have this expert power that we talk about in class.

Professor Riker talked about his use of Catasia Relay and specifically mentioned how easy it was for him to use, "I mean I, I just capture, I use Camtasia and capture the lectures, compress 'em, put 'em on blackboard. Um… and that's, that's about it."

Mobile technology. Four of the 20 participants mentioned mobile devices. Professor Gregory worked with his college technical group to convert all his course videos so they could be watched on a regular screen or on a mobile device. He believed that if students were going to use their mobile devices to consume his content, then it was his responsibility to make sure the content worked for them. Professor Taft talked about leveraging the mobile phones students brought to her classroom by using a system called Poll Anywhere, that allowed her to "survey or test the students on the fly and adapt to their responses."

Professor Mavis and Professor Riker, both talked about how they had adopted mobile devices into their own workflow, but were still thinking about how students may use them. Professor Mavis specifically questioned how she can take advantage of and "leverage the fact that every student has a smartphone in their pocket at all times."

Individual responses to the theme **I Like Free Stuff** are in Table 4.3.

Table 4.3. I Like Free Stuff

Participants	Blackboard	Free on the web	Presentation software	Specialty hardware or software	Lecture capture	Mobile technology
Professor Artie	Yes	Yes	No	Yes	No	No
Professor Blake	Yes	No	Yes	Yes	No	No
Professor Caan	Yes	Yes	No	No	Yes	No
Professor Diller	Yes	Yes	Yes	Yes	No	No
Professor Eagle	Yes	Yes	Yes	Yes	No	No
Professor Farha	Yes	No	Yes	No	Yes	No
Professor Gregory	Yes	No	No	No	No	Yes
Professor Hilt	Yes	Yes	Yes	No	Yes	No
Professor Ian	Yes	Yes	Yes	No	No	No
Professor Jach	Yes	Yes	No	No	Yes	No
Professor Knapp	Yes	No	Yes	Yes	No	No
Professor Leroy	Yes	No	No	No	Yes	No
Professor Mavis	Yes	Yes	Yes	No	No	Yes
Professor Nadal	Yes	No	No	No	No	No
Professor Oak	Yes	No	No	Yes	No	No
Professor Parker	Yes	Yes	Yes	Yes	No	No
Professor Quaid	Yes	No	No	Yes	No	No
Professor Riker	Yes	No	No	Yes	Yes	Yes
Professor Shannon	Yes	Yes	Yes	No	Yes	No
Professor Taft	Yes	Yes	No	No	Yes	Yes

Technologies used by participants.

I Guess I'm Kind Of Slow To Be Dragged Into It

All 20 participants commented on how they got started using technology in their teaching practices. Some were approached by their departments, some were exposed to technology as students and saw the benefits, some were just interested in technology, and some cited a combination of several reasons. Several realized the usefulness of a particular technology and fully adopted that technology once they were satisfied that the technology worked, and a few cited their interest in technology as being one of the reasons they started using technology, but no one initiated technology use because of their love of technology. None of the participants saw themselves as early adopters of technology.

Departmental influence. The most common reason why participants started using technology in their teaching practices was departmental influence, with 10 of the participants citing this as at least one of the reasons they started using technology. Professor Blake said, "we were getting pressure from the school of music administration about cutting down on our costs," and he mentioned a specific administrator by name. The focus of this cost cutting plan was on implementing online tests in order to save the department money in the areas of copies and testing services.

Professor Caan said that part of her job description when she was hired was to teach two online classes per year. Professor Gregory received a grant from his college for developing his first online course. Professor Hilt was approached by her department to rewrite the curriculum of a large enrollment communication course so it could be offered online. Professor Farha was approached by his department to teach online courses when the department decided to start an online masters program.

Professor Eagle said the focus of his college was technology and media, and it made sense to "try to adopt and adapt new technology to our classrooms when it also might be technology that our students could then go out in the field and use in their journalistic or mass media workplace setting." Professor Leroy also talked about how his department recognized that their students would need certain technology skills in the work after college, so it made sense for the department to encourage and support technology use in the classroom.

Professor Parker said that her department decided to implement graphing calculators in all algebra classes and at first she did not see the benefit. However, she eventually came around and said, "I guess I'm kinda slow to be dragged into it [technology], but I do see the value of it once we get it."

Improve teaching and learning. Improving teaching and learning was another popular reason for starting to use technology for 10 of the 20 participants.

All 10 of these participants said improving the student experience was one of the catalysts for their technology adoption. Professor Taft talked about first seeing the effect of technology in a colleague's online class, and how she wanted to do the same thing for her students.

Four of the 10 saw the benefit of the technology they were already using and decided to expand its usage. Professor Caan said it best when she said,

> And then when I started to see that these were things that were really working well with the online course, then I thought okay, now how could I take some of this into my on campus face-to-face courses also.

Professor Eagle talked about his hope that his technology adoption would go beyond just making his life easier and improve student learning, "There are several reasons why. One is that I felt that they would be valuable either to myself or to the students. Hopefully, more the students."

Professor Riker also saw a chance to improve his teaching and for his students to benefit from the improvements.

> I guess I saw an opportunity to do some things that were different, and to improve, basically to improve on the the status quo of, you know, people who are… who are trained as, let's say in this case engineers, but are not really highly trained as teachers, just get dumped into this teaching environment, and then they just do whatever they've seen done because that's what they know.

Interest in technology. Nine of the 20 participants indicated that they had a general interest in technology and that was one of the reasons they started using technology in their teaching. Professor Ian and Professor Taft best summed up the feelings of all nine. Professor Taft said, "It [technology] was there, it was interesting, why wouldn't you use it?" Professor Ian said said, "Well, I'm pretty much fascinated by it.… you know, it's just really, really fun, and it's also amazing how quickly these things are changing."

Professor Leroy believed that his natural interest in technology stemed from his cultural background. He said,

> It's also part of the cultural background that I come from. So… there's something very… very… deep in my cultural DNA that is connected to technology. Many

> of my—the friends I grew up with actually went into high tech at one point or another, or associated with it.

Efficiency. Of the 20 participants, seven mentioned efficiency as a reason they started using technology in their teaching. The comments of all seven are reflected in Professor Eagle' and Artie's statements. Professor Eagle said, "But I'm selfish and also wanna find out… what can lighten my load. I wanted to automate some for the functions that have been really time consuming." Professor Artie said, "It [technology] really allowed me to transmit information to them [students] in a lot easier way than what ever had been done before.

It's green. Two participants commented on environmental pressures to start looking at technology as a part of their teaching. Professor Eagle said, "I wanted to use processes that are more green for the university and reduce paper."

Professor Blake talked about how moving to online assessments helped the environment.

> I had to get copies made, handing out scan-trons in class, and it ended up with me taking all this stuff and throwing a bunch of it away after it has been used for 30 minutes. During the course of a semester I was using 500 sheets of paper, 10000 pages of printing, and 5000 scan-trons… all of which were unusable after, it was all just thrown away!

Used it as a student. Two of the participants mentioned that they had used technology in their teaching processes as a student. Professor Mavis said, "I probably experienced it as a student first. So I know what it feels like from a student perspective. And also what it feels—and I also know what it feels like when professors don't use

technology and make things sort of a lot more complicated than what I felt like it needed to be."

Professor Diller said, "I was taking methodology courses in the teacher's college, and my professor had a heavy emphasis on technology in her courses. And, so I would say that the very beginning of my teaching career, which was 10 years ago, I used technology because of her guidance."

Individual responses to the theme **I Guess I'm Kind Of Slow To Be Dragged Into It** are in Table 4.4.

Table 4.4. I Guess I'm Kind Of Slow To Be Dragged Into It

Participants	Departmental influence	Improve teaching and learning	Interest in technology	Efficiency	It's green	Used as a student
Professor Artie	No	Yes	Yes	Yes	No	No
Professor Blake	Yes	No	No	Yes	Yes	No
Professor Caan	Yes	Yes	No	No	No	No
Professor Diller	No	No	Yes	No	No	Yes
Professor Eagle	Yes	Yes	No	Yes	Yes	No
Professor Farha	No	No	Yes	No	No	No
Professor Gregory	Yes	No	No	No	No	No
Professor Hilt	Yes	No	No	Yes	No	No
Professor Ian	No	Yes	Yes	No	No	No
Professor Jach	Yes	Yes	No	No	No	No
Professor Knapp	Yes	No	No	No	No	Yes
Professor Leroy	Yes	Yes	Yes	No	No	No
Professor Mavis	No	No	No	Yes	No	Yes
Professor Nadal	No	Yes	No	Yes	No	No
Professor Oak	No	No	Yes	No	No	No
Professor Parker	Yes	No	No	No	No	No
Professor Quaid	Yes	No	No	Yes	No	No
Professor Riker	No	Yes	Yes	No	No	No
Professor Shannon	No	Yes	Yes	No	No	No
Professor Taft	No	Yes	Yes	No	No	No

Reasons participants starting using technology.

There Is This Guy On Campus Named Heath Tuttle

Support and guidance are important for anyone taking on a new challenge. All 20 participants talked about the importance of support resources, guidance from experts, and the need to have a "sounding board" for ideas and problem solving.

Campus technical staff. Of the 20 participants who talked about support, 16 of them mentioned the Blackboard group from the campus Information Services department, and 14 of those specifically identified Heath Tuttle as a support resource. As stated in Chapter 2, a purposeful sampling method with a reputational technique was used to select participants. I knew the participants and had worked with them in a support capacity, and my knowledge of them was taken into consideration when I selected them as participants. The participants also knew me, and had previously worked with me. Many of the participants laughed when I asked about support structure, and said my name. Professor Blake said, "Well, there is this guy on campus named Heath Tuttle." Professor Oak laughed and said, "You!"

The participants also went on to identify other campus support systems. Three participants, from three different departments, specifically identified the information technology groups in their specific departments as a resource. Five of the participants identified the Office of Distance and Online Education as a resource.

Colleagues. Half of the participants identified colleagues as a resource for help and guidance. Of these 10 participants, only three of them mentioned going to a colleague for technical help. The remaining seven identified colleagues as a resource for pedagogical help, or as a person to "bounce ideas off of" and to "get ideas from."

Professor Oak talked about the importance of advice from someone in her field, "Now there, there's an attraction. Somebody who knows my content, or has looked at my course organization, is suggesting something they think might make my course better, I am more tempted to look at it…"

Professor Eagle echoed Professor Oak's perspective, and the perspective of the seven who identified colleagues as a resource when he said, "I tend to use other people within the college, 'cause they may have already used it [the technology]"

Google. "I just Google it," was Professor Taft's response to the question of who she looks to for help and guidance. She was not alone, six of the 20 participants talked about looking for solutions to their problems online. Professor Diller mentioned a list serv that is focused on educators in her specific discipline, but she also talked about doing web searches for answers to her questions. Professor Hilt reflected the perception of all six of the participants when she said, "I troubleshoot on my own, I go out looking for things, searching, Googling."

Individual responses to the theme **There Is This Guy On Campus Named Heath Tuttle** are in Table 4.5.

Table 4.5. There Is This Guy On Campus Named Heath Tuttle

Participants	Campus technical staff	Colleagues	Google
Professor Artie	Yes	Yes	No
Professor Blake	Yes	Yes	No
Professor Caan	Yes	No	No
Professor Diller	Yes	No	Yes
Professor Eagle	Yes	Yes	No
Professor Farha	No	No	Yes
Professor Gregory	Yes	No	No
Professor Hilt	Yes	No	Yes
Professor Ian	No	Yes	Yes
Professor Jach	Yes	No	No
Professor Knapp	Yes	Yes	No
Professor Leroy	Yes	Yes	No
Professor Mavis	Yes	No	No
Professor Nadal	Yes	No	No
Professor Oak	Yes	Yes	No
Professor Parker	Yes	No	No
Professor Quaid	No	Yes	Yes
Professor Riker	Yes	No	No
Professor Shannon	Yes	Yes	No
Professor Taft	No	Yes	Yes

Support resources used by participants.

That Whole Distinction Is Idiotic

The distinction between work and home life is not clear for all 20 participants in this study. All spoke of working from home using personal computers and software, and they all recognized the affect that technology adoption at work has had on how they operate in their personal life.

No more two worlds. When asked about how their professional use of technology has affected how they use technology in their personal life, seven of the 20 participants talked about how they do not see a distinction between the two. All seven admitted that they used to keep the two worlds very separate, but they find that is hard to do now that technology allows them to blend so easily.

Professor Leroy talked about how his work and home life have become one, and how technology has been the driver behind that shift.

> That whole distinction is idiotic. It's problematic… for tax and business purposes, there is very a clear distinction, 'this belongs to work and this belongs at home.' We crossed the boundary about 20 years ago. The minute we have email and internet we have crossed that boundary… and all those distinctions are in many ways meaningless. I get email from work at home, and I work for hours extra on all of my devices. I can access, using my iPad, my work computer from home. My email gets to me while I am watching my son practice karate.

Professor Caan talked about colleagues who actively resist having their work encroach on their personal time. She also believed that she is able to be more responsive to her students because her work and home life are no longer separate.

> Well, I guess my personal life and my work life kinda just—are the same. I mean I adopted technology when you could have a smart phone and you could get all your email and your calendar and all those kind a things. And I have colleagues that only have a traditional cell phone, and that's because they don't want the emails coming in, they only wanna check 'em at their desktop, they don't wanna be linked. I am a control freak, so I have to be linked all the time with everything. And so I find it really nice, because I can be more responsive to my students, too, you know, 'cause I get an email, right, look, I'm at the grocery store, you know. I can respond back to them right away.

Professor Eagle also said that he no longer sees a distinction between home and work life, "I think it's interesting to see how our personal lives and our professional lives do begin to become just one big life now" He also talked about how his technology use at home affects his personal relationships.

> I don't know that there are two worlds anymore. I mean I, I think if you ask my wife, she would say that I'm home, and I've been reading more and more, as you probably have too. And we're, we're not just watching TV, we've also got our laptops open… and that's been… I think it's been a bit of a challenge for my wife if you would ask her, that she feels that's an additional distraction for me when we're spending time together.

Professor Mavis talked about making sure her students know her limits, even though she agrees that her two worlds are no longer separate.

> I think it's a little bit scary. But there really is no difference between my two worlds. I might be the only person saying this, maybe not. It's an interesting

> question, because yeah, you are available, all the time, but I also tell students, again, this comes from online teaching. 'You know, I'm not going to answer an email, or I don't really text,' I don't really let them text me. I say, 'I don't answer your questions at your pace—post them on Facebook at 3:00 a.m., I can't do that. But, I do check once a day.'

Technology at home. Using personal technology, computers, software, phones, and printers was a common occurrence among all 20 participants. All participants talked about working from home and often working from home using software and hardware they purchased personally. Professor Shannon and Professor Quaid both talked about keeping their calendars on their mobile devices and using home computers to access student work and university systems. The comments of all participants are reflected in Professor Shannon's statement, "I don't keep a paper calendar any more, it is all technology, it is only on my phone, so I can have access to it wherever I am, so I use technology a lot. I want to have access to what I need wherever I am, even if that means from my home computer."

Professor Caan talked about how her use of technology at home influenced her family, and had a direct impact on the development of her children.

> I have the smart phone and have all, and the iPad and all these things going on. Now my husband, my husband's a fire captain with the city. Now he's adopted, now he thinks he needs a smart phone because he sees all the value of having that in our children. So we have a daughter that's 7, and we have a son that's gonna be 3, and I mean they know more about that smart phone than what I do, they know more about the iPad. But what we're usin' the iPad for at home is like for

> Emma, spelling words. There's all these cool apps that you can get that will say the spelling word, and then they type it. And I think that's really good, 'cause you know, they're hearing it, and then they're improving their typing skills too.

Many of the participants who talked about personal technology use at home discussed it in terms of communication and family connections. Sixteen of the participants used some form of technology to communicate with and connect with family members near and far.

Three of the participants talked about building personal web sites for their families. Professor Artie, Professor Hilt, and Professor Taft all had built personal web pages. Professor Artie purchased the domain for his two year old son's name, and was waiting for his second child to be born so he could purchase that domain once they named the baby. Professor Artie also said that online calendars are a major tool for communication with his wife.

> I mean my wife and I, we send appointments back and forth to each other. It's the only way. You know I mean, she says to me, 'Why didn't you do this?' I said, 'Well, you didn't send me an appointment.'

Technology to entertain. Two of the 20 participants talked about using technology at home for entertainment purposes. Professor Blake and Professor Eagle both talked about using technology at home to access and stream music, movies, and TV.

Professor Knapp talked about how his family resisted using technology for entertainment purposes, instead focusing on academics.

> Our technology is entirely information academically based. You know we don't have a home theater, we don't—none of our computers can probably even—I

don't even buy computers that run the really fancy stuff. I buy the basic model which, here at the university, that's all you need. As far as academia goes, you don't really need anything much more than that. So, when I say we have 13 computers, they're all bottom of the line computers, up and down. In the last 20 years of buying that stuff, we're, you know, we're a very academic household in many ways. You know one of my sons is also an economics professor, or an economics instructor at this point, working toward that. And so we're very academic, and that's what we use technology for.

Individual responses to the theme **That Whole Distinction Is Idiotic** are in Table 4.6.

Table 4.6. That Whole Distinction Is Idiotic.

Participants	No more two worlds	Technology at home	Technology to entertain
Professor Artie	No	Yes	No
Professor Blake	No	Yes	Yes
Professor Caan	Yes	Yes	No
Professor Diller	No	Yes	No
Professor Eagle	Yes	Yes	Yes
Professor Farha	No	Yes	No
Professor Gregory	No	Yes	No
Professor Hilt	No	Yes	No
Professor Ian	No	Yes	No
Professor Jach	No	Yes	No
Professor Knapp	No	Yes	No
Professor Leroy	Yes	Yes	No
Professor Mavis	Yes	Yes	No
Professor Nadal	No	Yes	No
Professor Oak	Yes	Yes	No
Professor Parker	Yes	Yes	No
Professor Quaid	No	Yes	No
Professor Riker	No	Yes	No
Professor Shannon	No	Yes	No
Professor Taft	Yes	Yes	No

Distinction between work and home life by participants.

They Think I Know More Than I Do

One theme that came up frequently was how the participants perceived their own technology skills and their reputation for using technology. Some saw themselves as novices, while others saw themselves as having some skills. Regardless of the level of skill, 13 of the 20 participants talked about how they perceive their skills and reputation, and how their perception differs from their colleagues.

Professor Diller's perception of her instructional technology skills were that of "someone who figures it out." She saw a distinction between her and her colleagues' perceptions of her skills.

> I definitely didn't think of myself as an expert. And, and I still obviously don't. I'm always calling you for help (Laugh) and calling other people. But, I think the difference between us [her and her colleagues] was I, for some reason, am a person that just figures it out.

Professor Parker also recognized a disconnect between her perception of her technology prowess and the perception of her department.

> Well that's what I think is very amusing to meI'm considered one of the people who best uses technology [in her department] and I was dragged kicking and screaming into it. But… once I see what it does, I kind of… endorse it. But in some ways it's amazing to me that I have learned what I have learned, because I never really considered myself a technological person.

Professor Taft believed that some in her department may have thought her technology skills were more advanced than she saw them because she was "always talking about technology in department meetings—I won't shut about it."

All 13 talked about their colleagues thinking that their technology skills were at higher level than what they thought. Their comments are reflected in Professor Oak's statement.

> People have this perception that I know what I'm talking about, or know what to do. That's the scary part, when they think I know what to do. I can BS myself, BS my way through any conversation, 'cause I hear this stuff. And the stuff I know, I know well. But no, I think people… to be fair, I think people… respect what I know. And so they come to me. But my perception is they think I know more than I do.

Individual responses to the theme **They Think I Know More Than I Do** are in Table 4.7.

Table 4.7. They Think I Know More Than I Do

Participants	Self perception differs from colleagues perception
Professor Artie	Yes
Professor Blake	Yes
Professor Caan	No
Professor Diller	Yes
Professor Eagle	Yes
Professor Farha	No
Professor Gregory	Yes
Professor Hilt	Yes
Professor Ian	No
Professor Jach	No
Professor Knapp	Yes
Professor Leroy	No
Professor Mavis	Yes
Professor Nadal	No
Professor Oak	Yes
Professor Parker	Yes
Professor Quaid	No
Professor Riker	Yes
Professor Shannon	Yes
Professor Taft	Yes

Participant's self-perception of tech skills differs from colleagues.

It Was A Real Nightmare

Eight of the 20 participants talked about technology failures, technologies that sounded like they would work in their class, and that they were excited about, but failed when actually put into practice. Professor Hilt talked about a technology provided by the publishing company that was "not ready for prime time." She went on to say, "… the first year we used it, it was a real nightmare."

Two of the participants mentioned technologies that were supported by the campus for purposes of teaching and learning when discussing technology failures. One participant talked about Blackboard and one participant talked about iClicker (student response system). Professor Mavis talked about a time the wiki tools in Blackboard would not work consistently. Professor Jach said, "I had them use clickers, which I absolutely detest." She went on to explain that she did not see the benefit of clickers, as most instructors only use them to take attendance.

All eight participants who talked about technology failures mentioned an instance where a free technology, or a technology that was not supported by the university failed.

Professor Hilt talked about how these technology failures helped her to understand her students better, and gave her insight that made her more effective at teaching with technology.

> I found quickly that they [students] were although interested and intrigued by it [technology], easily frustrated when it didn't go well. So, to me that sort of, in my experience sort of contradicted the digital native myth about students that are really good with technology and really love technology. I think they do love it,

they love to see what it can do and I think they understand its value, but they are certainly not good with it unless it works well for most of them.

Individual responses to the theme **It Was A Real Nightmare** are in Table 4.8.

Table 4.8. It Was A Real Nightmare

Participants	Technology failures
Professor Artie	Yes
Professor Blake	Yes
Professor Caan	No
Professor Diller	No
Professor Eagle	No
Professor Farha	No
Professor Gregory	No
Professor Hilt	Yes
Professor Ian	No
Professor Jach	Yes
Professor Knapp	No
Professor Leroy	No
Professor Mavis	Yes
Professor Nadal	No
Professor Oak	No
Professor Parker	No
Professor Quaid	No
Professor Riker	Yes
Professor Shannon	Yes
Professor Taft	Yes

Technology failures experienced by participants.

I Don't Even Use A Pen Anymore

All but one of the interviews occurred in the participants' offices. At the beginning of one of the interviews, the participant suggested the interview be held in a quiet faculty lounge, and we moved there. At the beginning of the first two interviews, both participants struggled to find a pen to sign the Informed Consent Form (Appendix D) and I provided a pen for them to use.

After this happened the second time, I started noting on the interview sheets when the participants did not have a pen available. Analysis of the observational data and filed notes show that 17 of the 20 participants did not have a pen readily available when it came time to sign the form. Six of the 17 borrowed a pen from me. Five of the 17 looked in desk drawers to locate a pen to use. Four of the 17 got a pen out of their purse or computer bag. One picked a pen up off the floor, and one took a pen out of the trash.

Only one professor commented on this and that was Professor Taft who said, "Oh my god, I don't even use a pen anymore!"

Conclusion and Summary

After whittling 49 codes down to seven themes, and then exploring an eight theme from my field notes, the implications of the findings started to emerge..

In Chapter 5, I discuss implications of all eight themes; I have a better awareness of and engagement with students, I like free stuff, I guess I'm kind of slow to be dragged into it, There is this guy on campus named Heath Tuttle, That whole distinction is idiotic, They think I know more than I do, It was a real nightmare, and I don't even use a pen anymore

Chapter 5

Implications

The purpose of this study was to gain an in-depth understanding of the lived experiences of university faculty who adopted instructional technology for teaching and learning purposes and to determine if adoption affected the way a person teaches, works, and lives.

I examined the lived experiences of faculty who used instructional technology and taught at a large Midwestern university. Past research focused on the pedagogical benefits of instructional technology and on variables that hindered or encouraged a person to adopt technology, but they had not taken into account the experiences of the faculty, or the social variables that may affect adoption.

Technology adoption has been examined through the lens of several different theories, with Roger's Theory of Innovation being the most popular. However, Kidd (2009) argued that not enough research has been done in the area of lived experiences of faculty who are using instructional technology in their teaching methods and processes.

> …Roger's theory and subsequent models presented in this review do not adequately address the faculty's experience or the component of experience during the adoption process, the social or cognitive variables that shape one's ability to adopt ICTs (Information Communication Technologies), the individual factors that may hinder or accelerate one's decision or ability to adopt technological innovation. Therefore, a paucity exists in the literature to look into the lived experiences of faculty who adopt ICTs for teaching and learning (Kidd, 2009, p. 157).

I used a qualitative approach in the study because a key assumption of qualitative design is that the researcher is interested in "Meaning—how people make sense of their lives, experiences, and their structures of the world" Creswell (1994, p. 145).

Through semi-structured interviews with 20 faculty members, all of whom had different experiences with technology in teaching and learning, I sought the meaning behind their experiences when adopting and using technology in their teaching practices.

A phenomenological approach allowed me to search for a deep understanding of the process of adopting instructional technologies by university faculty, and how instructional technology adoption changed the way faculty teach and live.

Analyzing the data from the interviews and my field notes elicited eight themes that were central to the participants' experiences.

- I have a better awareness of and engagement with students
- I like free stuff
- I guess I'm kind of slow to be dragged into it
- There is this guy on campus named Heath Tuttle
- That whole distinction is idiotic
- They think I know more than I do
- It was a real nightmare
- I don't even use a pen anymore

I will discuss implications for each theme for faculty, students, university administrators, and university development and support staff.

I Have A Better Awareness Of And Engagement With Students

All the faculty who participated in the study believed that their use of technology benefited their students in some way. Although different faculty talked about the various ways that students specifically benefited, this underlying belief that that students benefited was the reason that these faculty continue to use technology and strive to improve their teaching. They really are doing this for their students.

For nine of the faculty, technology adoption had made them more efficient in their daily teaching. They used this time that technology had "given" them to initiate new learning activities, direct more student-focused class activities, and reflected on their teaching practices and work to improve them.

Nine faculty members said that their technology use had given them the opportunity to develop learning experiences that were more student-focused and more applicable to the students' lives. Professor Leroy helped redesign the curriculum of his program when he recognized that in order for elementary education students to use technology in their profession after they graduate, they had to be exposed to and use that technology in their training.

Eight of the faculty members reported that technology allowed them to develop more performance-based learning experiences, assignments, and assessments. For example, Professor Jach talked about implementing computer simulations that her ethics students completed outside of class. The program scored student responses to ethical cases, gave them immediate feedback, and allowed them to redo the simulation to hone their skills and knowledge.

Seven of the faculty members specifically talked about how students felt about using technology in their classes and the reports were mixed. Some felt students were very positive, while others reported students were resistant. Professor Leroy's experience was typical in that

some students embraced the technology and a few did not. He talked about student reactions when they were all handed an iPad to use in his class. "… I had two students who completely resisted. How can you resist the iPad?"

Implications for faculty. Faculty who want to improve the educational experiences of their students and who want the student experience to be more student-focused, applicable to students' lives, and performance based should be open to using technology. As we all become more technology centered, the future of education lies in the appropriate intersection of pedagogy and technology. It is the educators' responsibility to expose students to the technology that drives their chosen career paths, as well as the academic content. Technology should only be used when it helps promote learning; often technology just gets in the way.

Implications for students. As faculty use more technology and make the student learning experience more student-focused, students will be required to take a more active role in their education. No more ignoring the book, coming to class to sit through a lecture, and cramming for a test. If a teacher uses technology, students will most likely be expected to do more work outside of the classroom. If students do not step up and do their part, they will not be successful.

Implications for administrators. As faculty focus on improving teaching and learning, they will need more support. Assistance with finding and implementing methods and technologies that help them improve student learning will become a necessity. As faculty focus more energy on improving teaching and learning, they will also need to be recognized for their efforts. Resources should be allocated for faculty to successfully integrate technology into their pedagogy and improve teaching and learning.

Implications for development and support staff. As faculty look for new ways to improve teaching and learning, they will rely more on the expertise of development and support staff and will be pushing many staff out of their comfort zones. Development and support staff will be continually challenged to learn new systems and tools and will need to develop a life long learning mindset.

I Like Free Stuff

All 20 faculty members who participated in this study indicated that they used, or had previously used, Blackboard. Blackboard was the university's supported learning management system. Some went on to utilize Blackboard fully and teach fully distance courses, while a few others still only use it for the basics, and some were not using it at the time of the interview.

Half of the faulty indicated that they use resources, services, and software that found for free on the internet. According to Professor Mavis, free web resources and software programs have dramatically changed what she can do in her classroom. Six participants mentioned free social sites like Facebook, Twitter, Four Square and Glogster.

Nine faculty talked about using presentation software (Powerpoint and Keynote) in their classes and were using advanced features of the software, like voice over. Nine of the faculty also indicated that they had acquired specialty hardware and software that were necessary to teach courses in their various disciplines. The university supported none of the technologies.

Eight faculty used lecture capture software and collaboration software to connect with students at a distance. Four of the eight faculty were impressed with the ease of use of these systems, and all thought they were a benefit to student learning.

Only four faculty members talked about mobile technology. Most talked about it in terms of wanting to make sure that students could consume information on their mobile devices, but a few did focus on how their workflow changed because of mobile devices.

Implications for faculty. Faculty should start off slow when first implementing technology, and increase their usage as they gain confidence and know that the technology helps students achieve learning objectives. Faculty should be open to using new technologies if they will improve student learning. Mobile learning technology is the future, faculty should embrace it. If faculty use technology that is not supported by their institution, they may be on their own when it comes to support and trouble shooting. Faculty should build networks of people who have similar experiences and be an active member of that network.

Implications for students. Some faculty may be using experimental or unfamiliar technology. There may be bugs and failures. Students should get used to the idea that faculty will be on the same social networking sites as they are. Students may soon be required to purchase a piece of technology that is required for a course, much like they are required to purchase a book.

Implications for administrators. As faculty use new technologies, the institution should be prepared to devote resources to supporting those technologies. If faculty are to truly grow and improve teaching and learning, the administration should be a partner that helps accomplish goals, not a roadblock. Administrators should address the growing need of additional bandwidth and space for media storage.

Implications for development and support staff. Faculty and students will be raising questions that development and support staff do not know the answer to. Development and support staff should approach these situations as an opportunity to learn and be a partner in

problem solving. This profession will continue to grow as more people are teaching and learning using technology and online environments.

I Guess I'm Kind Of Slow To Be Dragged Into It

Departmental influence was one of the reasons 10 of the 20 faculty started using technology in their teaching practices. Some were paid, some were convinced, and a few were told they were going to do it. A few departments started online programs, and for one faculty member, teaching online was a part of her contract when she was hired.

Half of the faculty indicated that their desire to improve their teaching and their students' learning was a catalyst for adopting technology into their teaching methods. Some saw evidence of technology working for a colleague and decided their students would benefit from similar technology and others identified a technology that they had not seen applied in a classroom before and tried it for the first time.

A personal interest in technology was another reason often cited for technology adoption. Nine of the 20 faculty indicated that their natural curiosity and desire to use technology was a major factor in their technology adoption.

Some of the faculty believed they would gain efficiency by adopting technologies and a few wanted to use technology for environmental reasons. Seven of the 20 faculty talked about saving time and improving their workflow through technology use, and two participants talked about using less paper by moving their assessments online.

Interestingly, two faculty members mentioned that they had been a student and used technology in their learning processes. When they started teaching, using technology seemed like a natural thing to do. Both of these faculty members were among the group who had been teaching with technology for less than five years.

Regardless of how they started using technology, all 20 faculty members saw the value of using technology in teaching and learning once they were able to see positive results.

Implications for faculty. As colleges and departments move more programs online, and as growing enrollments strain institutions physical capacity, faculty should embrace technology use and online teaching. Technology changes fast and faculty will have to adopt a philosophy of constant learning and improvement if they plan to stay relevant. Technology use will improve faculty workflow.

Implications for students. Students will have more opportunities to take online courses and use technology in their traditional classrooms. Student interaction with the content, other students, and the faculty will increase as technology enhanced pedagogy demands that students become active participants in their learning.

Implications for administrators. As departments develop more online programs, administrators will need to recruit faculty who are willing to use technology and teach online. These new and younger faculty will expect technology to be available for them to use. Administrators should be ready to support these users and figure out a way to encourage and reward seasoned faculty who use technology effectively in the learning process.

Implications for development and support staff. As faculty become more technologically advanced, their questions and support needs will also become more advanced. Many faculty who are using technology are doing so because they truly want to help students learn. Understanding this motivation will go a long way to developing a trusting relationship with faculty.

There is this guy on campus named Heath Tuttle

All 20 faculty members talked about technology support, 16 of them mentioned the Blackboard support group on campus, and 14 of those specifically identified Heath Tuttle as a support resources. Three participants, from three different departments, specifically identified the information technology groups in their specific departments as a resource. Five of the participants identified the Office of Distance and Online Education as a resource.

Half of the participants identified colleagues as a resource for help and guidance when using technology to teach. The majority of them identified these colleagues as a resource for pedagogical help, or as a sounding board. Professor Oak talked about the importance of advice from someone in her field, "Somebody who knows my content, or has looked at my course organization, is suggesting something they think might make my course better, I am more tempted to look at it…"

Six of the 20 faculty talked about using the web to search for answers to their questions. Professor Taft said, "I just Google it." Of the six people who use Google as a source for information and support, two mentioned looking to campus resources for support.

Implications for faculty. Faculty should take advantage of online resources to find answers to questions. Developing a network of colleagues in your field, or in a technical field, is helpful if you want to stay up to date on new technology advances. This network will also serve as support a network and a soundboard for new ideas.

Implications for students. Most faculty are looking to improve their teaching processes which means their experiences in their classes may change from one week to the next. Flexibility is a must.

Implications for administrators. Faculty need support in the area of pedagogy and technology, and administrators should be prepared to provide those resources. Faculty need an infrastructure that allows them to develop support networks and learn from each other. Administrators should implement learning communities, faculty sharing events, development grants, and release time programs to encourage faculty to use technology to improve their teaching.

Implications for development and support staff. Because faculty are becoming more technical and are actively looking for answers to their questions on the internet, many may approach development and support staff with a solution for their problem, or a specific technology already in mind. Much like a medical doctor who treats a patient who has already "self diagnosed" using Web MD, development and support staff should be prepared to help faculty members who think they already know the answers.

That Whole Distinction Is Idiotic

When asked about how their professional use of technology has affected how they use technology in their personal life, seven of the 20 participants talked about how they do not see a distinction between the two. All seven admitted that they used to keep the two worlds very separate, but they find that is hard to do now that technology allows them to blend so easily.

Every faculty member talked about using personal technology, computers, software, phones, and printers to work from home. Many of the faculty said that their technology use at home has influenced how their family views technology. Professor Caan talked about her children using the iPad to learn spelling words and to play games. Using technology to facilitate family communication through email, blogs, and social media sites was common for 16 of the

faculty members. All said they would not adopt technology as quickly at home if they were not using technology to teach.

Implications for faculty. If it has not already, faculty worlds are about to change. As hand-held technology and student expectations blur the line between personal time and work time, faculty should prepare themselves for the student questions and communications that will come at them at all hours. Students are connected all the time and it is strange to them that faculty are not. Faculty will have to develop and communicate their technology/communication policy to students.

Implications for students. Students should be aware that some faculty will communicate with them on the weekend or in the middle of the night, and some will not. As faculty become more tech savvy, their expectations of students may increase. Faculty may expect students to turn around their homework more quickly than before, and faculty will expect students to become an active participant in their learning. It is hard to hide in the back of the class when everyone is connected.

Implications for administrators. This theme may have the biggest implications for administrators of all the themes discussed. This theme will require a paradigm shift on the part of administrators. As faculty become more tech savvy, the need for new rules and structures for cell phones, stipends, and equipment requests will increase. Faculty members have a legitimate need for a laptop and a mobile device. Do departmental policies allow that? Faculty members may hold less traditional office hours, tele-commute more, and work more from remote locations (home, the coffee shop, their cabin), do departmental policies allow that? Faculty may spend more time at work doing “personal” stuff because they are doing work during their “personal” time. Do departmental policies allow that?

Implications for development and support staff. As faculty are becoming more connected and are using more technology, the relationship between them and development and support staff is changing. Faculty no longer look to development and support staff for a quick answer, they look to them as a partner, someone they can come to with a new technology to discuss, and weigh the pros and cons. Faculty schedules are inherently more flexible than that of development and support staff and with technology blurring the line between work and personal time, more faculty may expect support during "off hours" (after 5pm and before 8am). Development and support staff will have to deal with these requests.

They Think I Know More Than I Do

One theme that came up frequently was how the participants perceived their own technology skills and their reputation for using technology. Some saw themselves as novices, while others saw themselves as having some skills. Regardless of the level of skill, 13 of the 20 participants talked about how they perceive their skills and reputation, and how their perception differs from that of their colleagues.

All 13 talked about their colleagues thinking that their technology skills are at higher level than the individuals think. Their comments are reflected in Professor Oak's statement. "… my perception is they think I know more than I do."

Implications for faculty. If faculty are using technology, and using it well, regardless of how the faculty perceives their skill level, their colleagues will view them as the expert and go to them for help and support. Well meaning, tech savvy faculty can easily become overwhelmed with requests for help and advice.

Implications for students. Some faculty members may be overwhelmed because of their workload and the fact that they are helping their department. Students may also

see the same technologies implemented in courses in the same department, even if the technology does not work well.

Implications for administrators. Administrators should recognize faculty who are stepping up and becoming teaching technology leaders in their colleges and departments. With recognition and compensation, administrators can easily leverage the faculty member's knowledge and position in academia to help spread the word about learning technologies. A respected faculty member, who is also seen as a technology "go to" person, is a rare find in academia. They have the credibility to be an evangelist for learning technologies.

Implications for development and support staff. Faculty may not have the knowledge or the self-confidence that development and support staff might expect. These faculty may not need much technology help or training, but they may need pedagogical support or help learning how to transition the knowledge they already have to a new system or tool.

It Was A Real Nightmare

Eight of the 20 participants talked about technology failures. Technologies that sounded like they would work in their class and that they were excited about, but failed when actually put into practice. Professor Hilt talked about a technology provided by the publishing company that was not "ready for prime time." She went on to say, "… the first year we used it, it was a real nightmare."

All eight participants who talked about technology failures mentioned an instance where a free technology, or a technology that was not supported by the university failed.

Implications for faculty. Faculty should be aware that some technologies are going to fail. A specific technology may work well for a faculty in one class, but not in another. The

majority of the major technical failures mentioned by the participants happened with technology that was not supported by the university. New and free technologies may work great and be exciting; but, if they do fail, the faculty member does not have many resources available to them. University resources will probably not be able to assist.

Implications for students. It is possible that the technology students are asked to use to create content for a class may fail. It is always good practice for students (everyone for that matter) to backup all their work. If a student does experience a technology failure, it is important that they communicate it to their faculty member immediately and not wait until the next time they see them. Elapsed time only adds to the problem. Communication with faculty members will be a key component to student success.

Implications for administrators. Administrators should understand that the technology adoption process may have setbacks as well as failures. One setback does not mean a technology should be discontinued. Technology adoption is an ongoing process that needs financial and resource support.

Implications for development and support staff. Development and support staff should expect failures when working with faculty who are adopting technologies into their teaching and learning processes. By developing a trusting relationship between development and support staff and faculty, failures will be easier to work through and recover from.

I Don't Even Use A Pen Anymore

At the beginning of the first two interviews, both participants struggled to find a pen to sign the Informed Consent Form (Appendex D) and I provided my pen for them to use. After I became aware of this "theme," I started noting on my interview sheets when the participant did not have a pen readily available. Analysis of the observational data

and filed notes show that 17 of the 20 participants did not have a pen readily available when it came time to sign the form. Professor Taft exclaimed, “Oh my god, I don’t even use a pen anymore!”

Implications. Faculty are becoming more sophisticated in their technology use and using less traditional methods for communication and learning. If faculty are to the point that they do not use pens, should we expect students to use pens and paper? Or, should we encourage them to use laptops and tablet devices in the classroom? This is an indication that technology budgets are going to get bigger, as more people become sophisticated users of technology. This is also an indication that faculty are becoming more and more technical which means what they expect from development and support personnel and programs will shift to higher level needs.

Central Implications

Faculty should adopt technology in their teaching and learning methods, or risk becoming irrelevant. Faculty should develop a support network that they can rely on for support and guidance, and be prepared for the line between personal and work worlds to blur.

Students should be prepared to become more active players in their learning processes and can no longer be passive learners.

Administrators should be prepared for big paradigm shifts in the areas of faculty advancement, faculty resource needs, perceptions of faculty productivity, and development and support staffs’ role in teaching and learning. Administrators should be prepared to financially support the technology and support needs of faculty, staff, and students. Administrators should recognize faculty who are effectively using technology in their teaching processes, and help them mentor other faculty.

Development and support staff should build relationships with faculty and students. The traditional model of faculty support is quickly going by the way side. Faculty need a partner not someone who can fix things for them. Development and support staff should be prepared to work in a career that requires critical thinking and constant learning and development.

Central implications for all roles can be found in table 5.1.

Table 5.1. Implications

Role	Implication
Faculty will	adopt technology to stay relevant.
	be expected to expose students to technology that drives their career paths.
	embrace mobile technology.
	teach more technology enhanced and completely online courses.
	use technology to improve workflow.
	develop a support network of colleagues in their field.
	see the line between their home and work live blur.
	have colleagues coming to them and asking for help.
	experience failure with a technology.
	see students bringing more technology to class, expecting to use it.
Students will	play a more active role in their learning; interacting more with content, students, and faculty as pedagogy demands active participation.
	experience more learning activities outside of class.
	be required to purchase special technology for a class.
	experience new technologies and need flexibility.
	see faculty becoming more connected and tech savvy.
	experience failure with a technology.
Administrators will	need to devote resources and money for faculty support and technologies purchases.
	recruit faculty enthusiastic to teach with technology.
	need to encourage and reward faculty who use technology effectively, and encourage them to mentor other faculty.
	develop programs to encourage faculty development.
	need to develop new policies and structures that allow for wired and connected faculty.
	recognize that failure is a part of the process and continue to support technology adoption.
Support staff will	need to continually learn new systems and tools.
	become a trusted partner with faculty, and see their role change from "support" to "consultation."
	be depended on for support 24 hours a day.
	work with faculty who have a high level of technical skill and who need pedagogical help, or help transitioning their skills and knowledge to new technologies.
	see their relationship with faculty tested when a technology fails.

Chapter 6

Results and Essence

Although results of this study are not generalizable to larger populations, the uniqueness of the experiences described provide rich detail for those who want to understand the lived experiences of faculty who adopt technology in their teaching processes. The participants' experiences, as told in their own words and interpreted with the categories and eight themes described in Chapter 5 were used to answer the following research questions.

Research Results

Central Research Question: What is the experience of faculty who adopt technology in their teaching? Faculty who started using technology in their teaching often did so because of pressure from their administration or because they had a desire to be better teachers. They typically started off slow, and looked on campus and in their personal and professional networks for help and guidance. Once they became adept at using a particular technology, they were more apt to expand that usage or look for other technologies that may be effective in improving learning. Technology adoption at work led to technology adoption at home.

Does technology adoption affect the way a person teaches and works? If so, how? Yes. Technology adoption allows for development of more student-centered and results-oriented learning materials and activities. Teachers who use technology often work from anywhere, and are connected to students all the time.

Does technology adoption in the classroom affect the way a person lives outside of the classroom? If so, how? Yes. Faculty who used technology often adopted similar technologies in their personal lives. They used technology for calendaring, communication, and organization at work and at home. The knowledge they gained through adopting technology at

work often influenced the technology used by their family, as their spouses and children were likely to adopt technology for communication, learning, and entertainment purposes.

Why do faculty adopt instructional technology into their teaching? All of the participants adopted technology because they knew it improves student learning and provided efficiencies and streamlined their personal work process.

What instructional technologies are faculty adopting into their teaching? Faculty used institutionally supported technologies. However, faculty also explored and found free technologies and services on the web.

Where do faculty look for guidance when adopting instructional technology into their teaching? All faculty looked to institutional support systems and networks for guidance when it comes to institutionally-supported technologies. Half of the faculty participants also developed networks of colleagues and friends from their academic areas and other technical areas not affiliated with their institution.

The Essence of the Phenomenon

The essence of this phenomenon lies in paradigm shifts required of all players in the process of modern teaching and learning. As *faculty* became more tech savvy and incorporated technology into their teaching, the way they lived and work changed—Technology blured the line between work and home. *Administrators* should find fiscal and procedural processes that will accommodate and support this new way of working. *Students* became more engaged in their learning. *Development and support staff* will have to work to develop trusting relationships with faculty members, and not just be a "help desk."

The future of teaching learning lies and in the intersection of pedagogy and technology.

Chapter 7

Conclusions

Significance

By analyzing the lived experiences of faculty who adopted instructional technology into their teaching practices, I have:

- Provided insight into the feelings, struggles, and successes of faculty who decide to adopt instructional technologies into their teaching.
- Provided insight into the impact instructional technology adoption in the classroom has on technology use in personal life.
- Provided understanding of how instructional technology adoption affects the way a faculty member develops teaching strategies and how they teach using instructional technology.
- Identified a development and support philosophy for faculty who adopt new technology into their teaching strategies.

The results of this qualitative phenomenological study are significant on a personal level, provide significant insight into the professional aspect of teaching and learning, and contribute to the body of literature of instructional technology and pedagogy.

Personal significance. I now have a better understanding of the process a faculty member goes through when adopting a new instructional technology. I have been working with instructional technology for 10 years and view new technologies as exciting opportunities. I had forgotten what it like for a person who is not immersed in technology to try to find, analyze, adopt, and assess a new technology. This study has shined a light on that experience for me reminding me of that perspective.

Professional significance. A clear understanding of how technology adoption affects the way a person teaches and works offers information useful to instructional technology researchers and teaching faulty. The findings of the study will help to prepare faculty and professional staff for the experience of adopting instructional technology in their teaching practices. The findings of the study can be considered a road map for where they need to go, and what to expect along the way.

Contributions to the Literature

Much of the research on instructional technology had focused on the pedagogical benefits of instructional technology, and the factors that influenced the adoption of instructional technology by faculty. Although research in these two areas produced valuable information about instructional technology and its adoption, little research focused on the experiences of faculty who adopted instructional technology in their teaching processes.

I used in-depth interviews that allowed instructors to tell their stories of technology adoption. The use of guided interviews gave ample opportunity for the faculty voices to be heard. The results help fill the gap in the literature concerning faulty adoption of instructional technology by telling the story of the faculty experiences.

For the most part, this results of the study supported the findings described in Chapter 2.

Pedagogical benefits of instructional technology. With regard to Xu and Meyer's (2007) findings that faculty who used instructional technology (email, Web, electronic calendaring) saw an increase in their overall productivity; I found this to be the experience of the participants. They discussed using the extra time acquired technology to improve their teaching materials, teaching strategies, and feedback to students.

Instructional Technology Adoption Factors. The study supports Phillips (2005), Georgina and Hosford (2009), Georgina and Olson (2008), Somekh (2008), and Spotts (1999) findings that faculty technology literacy and skills, faculty support and training, and faculty motivation all influence faculty adoption of instructional technology. Faculty who had a base level of skills were likely to look for new instructional technologies that would enhance their teaching. These faculty also stated that they took advantage of faculty support systems on and off campus, and that their levels of motivation affected their technology adoption.

However, Salter's (2005) finding that faculty who perceived themselves as being technologically advanced were more likely to adopt technology than those who didn't, was not supported. Thirteen of the 20 experienced technology users did not think their skills were "up to par." All 13 talked at length about how they did not think their technology knowledge and skill level was as high as their colleagues perceived. One quote, and theme, from the study was, "they think I know more than I do."

Limitations of the Data Set

The limitation of the data set exists in the means of sampling. The purposeful sampling method with a reputational technique does not allow researchers to generalize data to all higher education faculty members. The results provide information for a more in-depth understanding of this particular phenomenon and the results are pertinent to faculty members who use instructional technology at a large Midwestern university.

Future Research

From the research I have conducted, I recommend the following studies:

- A longitudinal study of faculty that follows them through the stages of technology adoption, following them from tech novices to tech savvy teachers.

- A study focusing on student experiences as they navigate a technology rich course. Are the benefits worth the cost?
- A large-scale quantitative study on the impact of technology adoption on personal technology use.
- An in-depth study exploring the relationship between faculty and development and support staff focusing on how to develop a trusting partnership.
- A large scale quantitative study of university policies that may affect technology acquisition and adoption.

My Challenge

In my current professional role, I support university faculty who use technology to teach and I work with administration to set policy and fund teaching technologies. I believe that my personal challenge is to help faculty develop and understand the relationships and networks they need to develop with support staff, colleagues, and administration in order to be successful educators.

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Appendix A

Interview Guide

UNDERSTANDING THE LIVED EXPERIENCES OF FACULTY WHO USE INSTRUCTIONAL TECHNOLOGY

Thank you for meeting with me. If you choose to participate in this interview please sign the consent form. You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigators or the University of Nebraska. Your decision will not result in any loss of benefits to which you are otherwise entitled.

(Turn on audio recorder)

Thanks for agreeing to be interviewed for this research project. I'm hopeful that the information you and the other faculty share with me will help provide information that provides insight into the lived experiences of faculty who adopt technology into their teaching methods.

In order to understand your experience as you adopt technology into your teaching processes and methods, I need to know about the technology you use in your teaching strategies, and how that technology has affected the way you teach your courses. I have a set of questions to guide our conversation. I want to understand your experiences, and thoughts about your teaching experiences, factors that may have affected your technology choice, and adoption processes and rate.

Do you have any questions about what I've said or about the purpose of the interview?

Interview Questions:

- Why did you decide to adopt instructional technologies into your teaching processes and methods?
    - Follow ups: Were your students encouraging of your technology adoption? Did you find your co-workers and department supportive of your adoption of technology?

- Please describe what instructional technologies you use to teach those classes.
    - Follow ups: How did you choose the classes you would use technology in? Why did you choose those particular technologies? What are some success stories from your technology adoption? What are some stories of failure from your adoption?

- Who do you look to for guidance when adopting technology in your teaching?
    - Follow ups: Did you find these resources helpful? Have/would you recommend these resources to a coworker?

- Have these technologies changed the way you teach your course(s)? If so, How?
    - Follow ups: Please provide one example of a technology that improved your students' experience. Please provide one example of a technology that did not improve your students' experience.

- Have you adopted any of these technologies into your personal life (productivity tools, calendars)? If so, what tools, and how are you using them?
    - Follow ups: Would you have found this technology for personal use if you hadn't started using it in your teaching?

- What have you learned about your teaching from the adoption of technology?
    - Follow ups: Is your approach to classroom management different? Has technology adoption influenced your teaching philosophy?

Thanks again for talking with me.

(**Turn off audio recorder)**

Appendix B
Confidentiality Agreement - Transcriptionist

University of Nebraska Lincoln

COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Educational Administration

Confidentiality Agreement - Transcriptionist

I, Deb Altman, hereby agree that I will maintain confidentiality
(name of transcriptionist)
of all tape-recorded interviews that I have been contracted to transcribe for the following research project: **UNDERSTANDING THE LIVED EXPERIENCES OF FACULTY WHO USE INSTRUCTIONAL TECHNOLOGY.** This means that I will not discuss or share any tape-recorded or transcribed data with any individuals other than the researcher, Heath Tuttle, or his supervisor, Dr. Marilyn Grady.

When the transcriptions are complete, I will return all recordings to the researcher and will transfer all electronic files to the researcher. Upon confirmation of receipt of these files by the researcher, I will destroy all original electronic files.

Deb Altman — 3/4/12
(Signature of transcriptionist) (Date)

141 Teachers College Hall / P.O. Box 880360 / Lincoln, NE 68588-0360 / (402) 472-3726 / FAX (402) 472-4300

Appendix C
Institutional Review Board Approval

NUgrant Message - IRB Project Approved

4 messages

bfreeman2@unl.edu <bfreeman2@unl.edu> **Mon, Nov 21, 2011 at 1:29 PM**
To: htuttle2@unl.edu
Bcc: Heath V Tuttle <htuttle2@unlnotes.unl.edu>

NUgrant research administration system

Your project has been approved by the IRB.

Project Title: Understanding the lived experiences of faculty who use Instructional Technology

Approvers Comments:
Mr. Tuttle and Dr. Grady,

Your project has been approved. You are authorized to begin data collection.

1. The approved informed consent forms have been uploaded to NUgrant (files with -Approved.pdf in the file name). Please use these forms to distribute to participants. If you need to make changes to the informed consent forms, please submit the revised forms to the IRB for review and approval prior to using them.

Your official approval letter will be emailed to you and uploaded to NUgrant shortly.

Good luck with your research!

Becky Freeman
472-8127
bfreeman2@unl.edu

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This message has been sent to you through NUgrant. To view project/form you can click the link below.

Link: https://nugrant.unl.edu/irb/projectDetails.php?ID=11896

NUgrant | University of Nebraska-Lincoln Office of Research nugrant.unl.edu

nugrant-osp@unl.edu | nugrant-irb@unl.edu | nugrant-iacuc@unl.edu | nugrant-circ@unl.edu | nugrant-ibc@unl.edu | NUgrant

Appendix D

Participant Recruitment Email

Dear (name)
I am conducting a research project about the lived experiences of faculty who adopt instructional technology in their teaching processes and methods. I am focusing on faculty in the College of Journalism and Mass Communication, and I am writing this email to ask for your help in this research project. If you agree to participate we will arrange a convenient location for an interview that will take approximately 60 minutes of your time. If you are living in or near Lincoln the interview can take place in your office, at the Nebraska Union, the East Union, or another location at your convenience.

I am interested in examining your experiences with adopting instructional technology in your teaching processes and methods. Specifically, I am interested in how technology adoption affects the way you teach and work, what instructional technologies you are using, why you have adopted instructional technology into your teaching processes and methods, and who you look to for guidance when adopting instructional technology.

The interview will be recorded, and the recordings will be erased after they are transcribed. No identifying information will be used in any materials created from these interviews. The information obtained in this study will be published in my dissertation, as well as in journal articles.

You are free to decide not to participate in this study or to withdraw at any time without adversely affecting our relationship or your relationship with the University of Nebraska-Lincoln. Your decision will not result in any loss of benefits to which you are otherwise entitled.

There may be no direct benefit to you if you participate in this research, however you will be contributing to the improvement of educational techniques that may impact technology adoption.

Please indicate whether you are interested in participating in this research by contacting me by email or phone at the contact information listed below. I look forward to hearing from you and to the opportunity to learn from you.

Sincerely,

Heath Tuttle
Graduate Student Office: (402) 472-4267 Cell: (402) 770-9069
Department of Educational Administration Email: heath.tuttle@gmail.com

Dr. Marilyn Grady, Professor Office: (402) 472-0974
Department of Educational Administration Email: mgrady1@unl.edu

Appendix E

Informed Consent Form

University of Nebraska Lincoln

COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Educational Administration

INFORMED CONSENT FORM
UNDERSTANDING THE LIVED EXPERIENCES OF FACULTY WHO USE INSTRUCTIONAL TECHNOLOGY

This research project will focus on the lived experiences of faculty who adopt instructional technology in their teaching processes. This study will attempt to answer how instructional technology adoption has affected teaching, what technologies are used, why technology is adopted, and where one looks for information and resources about the technology.

You have been selected because reflection on your use of technology may raise your consciousness and may lead to more effective use of technology in your teaching. The indirect benefit is that the information provided may contribute to improving the adoption of technology in teaching methods at the college level.

There are no known risks associated with this research. The interview will require 60 minutes of your time and will include completion of this informed consent form. All responses will be taped and transcribed, and kept in strict confidence. Your name will not be included in the project or other documents. The data will be stored in a locked drawer in the investigator's office and will only be seen by the investigators and the transcriptionist, who does not know the participants, during the study and for three years after the study is complete. The information obtained in this study may be published in education journals, presented at conferences and will be used in my dissertation, but the data will be reported as aggregated data. If you have questions about this research before or during the study, you may contact the investigator at any time at the numbers and emails listed below, or Dr. Grady at the number and email listed below. If you have questions concerning your rights as a research participant that have not been answered by the investigator or to report any concerns about the study, you may contact the University of Nebraska-Lincoln Institutional Review Board at 402-472-6965.

You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigator or the University of Nebraska. Your decision will not result in any loss of benefits to which you are otherwise entitled.

You are voluntarily making a decision whether or not to participate in the research study. Your signature certifies that you have decided to participate having read and understood the information presented. You will be given a copy of this consent form to keep.

_____Check if you agree to be audiotaped during the interview.

_____ _____
Signature of Research Participant Date

Heath Tuttle, Graduate Student
Department of Educational Administration
Office: (402) 472-4267 Cell: (402) 770-9069
Email: heath.tuttle@gmail.com

Dr. Marilyn Grady, Professor
Department of Educational Administration
Office: (402) 472-0974
Email: mgrady1@unl.edu

141 Teachers College Hall / P.O. Box 880360 / Lincoln, NE 68588-0360 / (402) 472-3726 / FAX (402) 472-4300