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# Individualized Instruction as a Faculty Training Strategy for Technology Integration

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# Individualized Instruction as a Faculty Training Strategy for Technology Integration

by

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A dissertation submitted in partial fulfillment of the requirements
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We hereby certify that this dissertation, submitted by Jennifer Merritt, conforms to acceptable standards and is fully adequate in scope and quality to fulfill the dissertation requirements for the degree of Doctor of Philosophy.

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# Abstract

An Abstract of a Dissertation Submitted to Nova Southeastern University
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It is inevitable that campus-based higher education will adopt some form of a hybrid learning approach. For schools and their faculty members, this means the acknowledgment and acceptance of these changes are required. Campus-based higher education faculty members wish to change how they teach courses due to societal demands to better suit the next generation of students. Initially, schools began offering new technology to faculty that wished to use the technology; however, over the years, due to the demands of competition with other schools and next generation, tech-savvy students entering academia, schools are starting to require the use of technology that was once only an option for faculty members.

This implementation of incorporating technology into the classroom has faced several roadblocks because what was once considered a simple transition has become more complex due to faculty resistance to new technology, which stems from various limitations, barriers, and perceptions, such as low computer self-efficacy, high computer anxiety, and time to learn new technology. The purpose of this study was to understand how in-service faculty experience individualized training as a method of teaching faculty how to use the technology and integrate it into their courses. The lived experiences and perceptions of in-service faculty regarding individualized training were specifically focused on to determine how individualized instruction was perceived to help or hinder integrating technology into their courses. The focus was the experience Harper College and McLennan Community College's in-service faculty, who experienced training through the group training currently offered by the schools, as well as the proposed individualized training. Higher education faculty from general study areas, such as English, math, and science were invited to participate.

The study consisted of a 6-week individualized training program for 12 in-service faculty members (seven completed the study) who previously participated in a group training program about Blackboard. The study was a phenomenological approach in that used interviews to gather information regarding the lived experiences as the basis of analysis. The data for this study were gathered, horizonalized, and analyzed through a 7-step data processing method for phenomenology studies.

After the data were analyzed, the findings show how developing a good individualized training program can help in-service faculty members not only integrate technology into their course designs but address any of the limitations or barriers the faculty faced. These findings coincide with the recommendations that training programs need to be developed into a phased approach in which the existing group training should continue but a secondary training program should be developed that incorporates andragogy-based principles and the technological pedagogical content knowledge (TPACK) framework.

# Acknowledgements

This has been an extremely long haul to complete the dissertation as many of life's obstacles kept cropping up but in the end, a very rewarding journey. The massive amount of support from colleagues, family and friends helped me get through all of this.

My family has been my biggest support system during this process as they have been there every step of the way helping to overcome obstacles that cropped up and gave me the encouragement to complete this journey. My biggest supporter through this journey was my better half, as I could not have done this without her support and being at my side every step of the way.

I want to also extend thanks to faculty that participated in the study and the schools that supported this study. I thoroughly enjoyed working with them and that experience has helped to develop long lasting friendships as well. It was a good learning experience for all and look forward to a continued working relationship with the faculty and schools.

Lastly, thank you to my advisor Dr. Wang for not giving up on me and realizing that life's obstacles were there at every turn. I cannot express enough appreciation for everything Dr. Wang has done for me over the years. Thank you goes out to Dr. Snyder and Dr. Lane for joining the committee and sticking with me as I know this was a long haul for all you!!

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# Chapter 1

## Introduction

As technology continues to advance and become more integrated into the daily lives of individuals, it is also being integrated into classrooms, spanning from preschool through higher education. At present, many higher education institution leaders have expressed feeling the pressure of having to implement some form of technology in classrooms so they can keep pace with the technologically informed students (Courts & Tucker, 2012; Means, 2010). One institution this applies to is Harper College, located in Palatine, Illinois: “In 2004, Harper College served a total of 37,338 credit and noncredit students during the summer, fall, and spring terms, making Harper one of the largest community colleges in the country” (Harper College, 2013, para. 17). A second institution is McLennan Community College out of Waco, Texas, which has been around since 1965 and the school has only been using Blackboard for the past three years (McLennan, 2016).

Currently, most higher education faculty members are familiar with using a computer for PowerPoint presentations, but colleges should offer a larger array of technology that can be utilized in the classroom. Members of Harper College and McLennan Community College’s leadership have responded to the needs of the current student population by offering an online supplement for face-to-face courses, using Blackboard as its online learning management system (LMS), which students can access

from various devices, such as computers, iPads, and smartphones. This technology's use may be largely beneficial to the faculty and students when utilized effectively. Such utilization could include extensive use, such as asynchronous discussions using online forums, and low-level use, such as emailing and grade posting (Courts & Tucker, 2012; Ertmer & Ottenbreit-Leftwich, 2010). To educate faculty on Blackboard and its functionality, both colleges offer group training for faculty members throughout each semester, with one course being an introduction to Blackboard and the second being an advanced course on the use of Blackboard. It is not mandatory for faculty partake in Blackboard training; however, faculty members are highly encouraged to attend. Regardless of such encouragement, the turnout for sessions has traditionally been low. Some of the current trends in research suggest technology training is best offered when coupled with the specific needs and goals of a particular faculty member, thus suggesting an individualized training program for teaching technology among faculty.

Individualized training has the high potential to promote professional development and long-term changes in teachers' attitudes toward and practices with technology in the classroom by providing individualized training and support in the context of a real classroom (Kopcha, 2012). Moreover, in Kopcha's (2012) study, a training mentor uses individualized training to improve technology integration in the classroom. To begin the individualized training, the mentor starts with a needs analysis through initial or pretraining information gathering of the current situation. The results from the needs analysis—especially the barriers or hindrances—were used in the individualized training development. The training results showed improved knowledge and application of the technology within the classroom (Kopcha, 2012).

Individualized training has been specifically established to be effective in improving teaching skills for Kindergarten through 12th (K-12) grade students (Archambault, 2011; Archambault & Crippen, 2009). Archambault and Crippen (2009) claim there is a need to focus on K–12 students and teachers because there is a major push for K–12 schools to offer online courses, thus requiring the use of technology in the classroom. Hence, there is a need to explore how to improve teacher skills and knowledge in technology use in their classes, given this push for online courses in K–12 schools. Archambault (2011) focuses on a national survey of K–12 online teachers to determine their preparedness for using technology inside the classroom. K–12 online teachers indicate they feel the most prepared in the areas of pedagogy, content, and pedagogical content; however, they are not prepared for the aspects of teaching related to technology (e.g., technological pedagogical knowledge [PK], technological content knowledge [CK], and technological pedagogical content knowledge [TPACK]). TPACK examines the relationship and the interactions between content, pedagogy, and technological knowledge and will be explained in greater detail later.

Offering individualized training can help with the issues of faculty not understanding how to relate the technology to their personal teaching and learning philosophies and their pedagogy, which can help achieve maximized results for the integration of pedagogy into technology training (Georgina & Olson, 2008). Considine, Horton and Moorman (2009) suggest that because faculty members today are considered digital immigrants, connecting their knowledge of technology to the common teaching methods (pedagogy) proves challenging. This is exasperated considering the numerous technology tools that are available to faculty compared to the tools available in their early

teaching career (Kao, Chin-Chung & Shih, 2014). This thought is also supported by Lapp, Moss, and Rowsell (2012), who argue that faculty members struggle with ways to incorporate new models of learning with integrating technology in the classroom. Kurt (2013) noted that society also plays a big role in determining what kinds of technology are implemented in the classroom which may benefit society but the faculty feel not equipped to integrate the ever changing technology into their curriculum. This is where focused, individualized training can assist faculty in effectively integrating technology into the classroom, and it can help them relate the content to their personal teaching and learning philosophies.

Through this study, the researcher examined the faculty experiences with individualized training. The focus of this study was how faculty members perceive how the training helped them become confident in using the current technology provided by Harper College and McLennan Community College, how it assisted with effectively integrating the technology in to the classroom, and how the technology aligns with their personal teaching and learning philosophies. Psychological barriers for faculty were recognized while conducting the training, such as low computer self-efficacy and high computer anxiety, as they could hinder the learning process, along with pedagogy reasoning. The negative effect on self-efficacy and the increased effect of anxiety highlight the need to aid teachers in the use of technology through individualized training. Nevertheless, self-efficacy and anxiety are not the focus of the study. By gaining a more in-depth understanding of these barriers and determining the best training plan for the faculty that aligns with their personal teaching and learning philosophy (pedagogy), it was possible to deliver technology training programs that allow faculty members to be

comfortable with integrating technology in the classroom with relating it to their pedagogy. In turn, this confidence will help foster a student-centered, outcomes-based learning environment.

**Technological, Pedagogical, Content Knowledge**

Faculty were offered opportunities to receive professional development, but this could be problematic when not delivered to meet the faculty members' needs. Most professional development is often quite generalized and not driven by the faculty members' needs. The training sessions were quick and focused on just showing the features instead of explaining how they could be applied in the classroom or to the course design. This is why faculty needed a "collection of competencies and knowledge of how to use . . . disciplinary knowledge, pedagogical techniques, and technological tools" in their classrooms (Kereluik, Mishara, & Koehler, 2011, p. 15). Faculty required a different level of literacy and competency with technology, which is why the TPACK model is utilized for this study.

Shulman (1987) identified a framework for describing various domains of knowledge that he felt were needed for effective teaching. Shulman believed that no single domain was sufficient to create instruction that would create an effective learning environment. Shulman felt that by reviewing all the domains and the intersection of these domains creates the best instructional material for a faculty's discipline that not only benefits the instructor but also the students. Mishra and Koehler (2006) took Shulman's framework and expanded upon it to create knowledge domains of technology. Mishra and Koehler added the domain of technology knowledge to address the incorporation of technology in the classroom and curriculum.

TPACK examines the relationship and the interactions between content, pedagogy, and technological knowledge as seen in Figure 1 (Kereluik et al., 2011; Shin, Koehler, Mishra, Schmidt, Bara, & Thompson, 2009). Looking at these relationships encourages faculty to develop new strategies regarding how to integrate technology while aligning with the faculty members' pedagogical strategies. This new knowledge also creates a new role for the faculty: They become the course designer instead of just being a standard technology user (Kereluik et al., 2011).

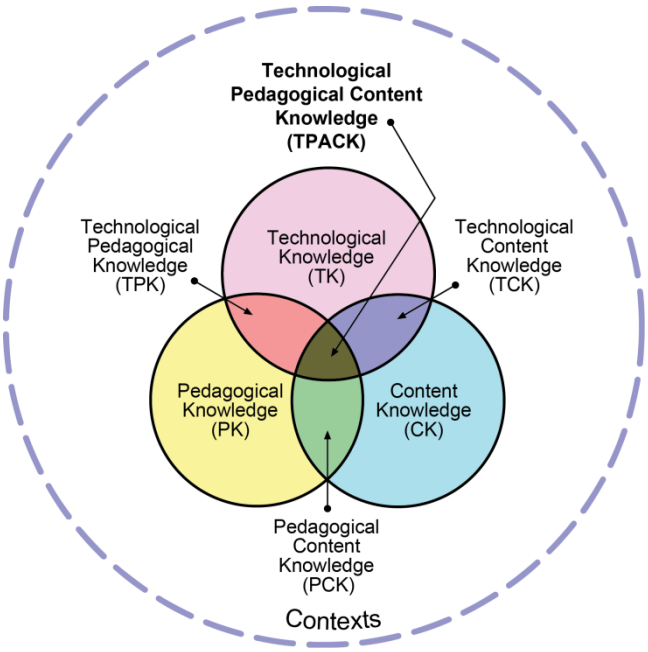


*Figure 1*. TPACK Framework Illustration from http://tpack.org.

Technologies are constantly changing and emerging, which may be a great asset for education when proper integration is researched and understood. Technological content knowledge (TCK) is crucial, as faculty need to know how to utilize the technology to successfully integrate it, but this knowledge needs to be "flexible, creative and adaptive" (Kereluik et al., 2011, p. 16). This flexibility is imperative for faculty to

manage, direct, and employ the technology to meet their pedagogical needs. The training provided should also be aligned with the faculty members' specific pedagogical content knowledge (PCK) so the faculty members can understand how to integrate the technology into their course designs.

Technology by itself is not inherently an educational tool but a tool that needs to be repurposed for education. As Spires, Lee and Turner (2008) note, this is why it is important to connect the 21st-century tools for classroom purposes, and without this connection, it is understandable why faculty are hesitant in integrating the technology into their course designs. Understanding that technology is a product that has a way to reshape the course content that can create an open environment for faculty and students to freely dialog, experiment and collaborate is an important tool to learn. Utilizing a TPACK framework that integrates technology, pedagogy, and CK has been established to help faculty better integrate the different aspects of knowledge to technology use in the classroom (Koehler & Mishra, 2009). TPACK will be used as the framework for the individualized training because it has been established to be a promising approach to facilitate the use of technology in education, specifically in the classroom (Alsofyani, Aris, Eynon, & Majid, 2012).

The individualized training using a TPACK framework will be composed of three phases: learning, enacting, and transferring (Graham, Burgoyne, Cantrell, Smith, St. Clair, & Harris, 2009). The learning phase involves interactive classroom instruction about content topics, process skills, and inquiry for Blackboard (Graham et al., 2009). The enacting phase has six sessions of an in-depth study about selected topics related to Blackboard and enactment of inquiry. The final phase, transferring, is where the

knowledge is then applied to the learning management system (Blackboard) for each participant in the training session.

Utilizing a TPACK framework will allow faculty to effectively and confidently integrate technology, which begins with proper training. By providing a change in knowledge, you can create a change in practice, which will result in greater technology integration (Shin et al., 2009).

**Problem Statement**

Online technology is becoming prevalent in today's higher education system, as it becomes an integral component of most schools and universities. As the popularity of online technology grows, so does the need for faculty members who can use online technologies effectively in their classrooms. Students today who are technology driven need faculty who can teach them online technologies so the students can remain focused and engaged. Faculty who are adept with the use of online technologies can also increase student communication, as students comfortable with online communication find it to be more engaging (Kurt, 2013; Smith, 2007).

Lowerison, Sclater, Schmid, and Abrami (2006) claim that online technology is growing at a tremendous rate; one significant effect of this is on the way instruction is delivered in schools across the United States. Moreover, this tremendous growth in online technology requires classroom faculty to become adept with using technologies—if not expert technology users overnight—to become effective contemporary faculty and to meet their technologically-driven students' needs (Allen & Seaman, 2007). This change is important to address the national dependency on technology as businesses today depend so heavily on technology that higher education needs to prepare students to enter

the workforce with a solid foundation as to how to use it or at least be computer literate (Kinshuk, Hui-Wen, Sampson & Chen, 2013). Most classroom faculty cannot maintain this new demand from students and resist using online technologies in the classrooms for various reasons, from psychological barriers to the time needed to learn the new technology (Li, 2007). Due to the lack of knowledge pertaining to technology, many faculty members perceive the integration of online technology in the teaching and learning the process as a time consuming and unnecessary task (Kopcha, 2010; Kotrlik & Redmann, 2009).

Allen and Seaman (2007) claim that the majority of faculty members found the use of online technology in how they teach their classes an unreasonable request and that the demand to catch up with the ever-changing pace of online technology is not possible. Many studies also show the majority of educators cannot remain current with new technologies that keep coming out and are less comfortable with using those technologies in their courses (Carnevale, 2007; Columbaro & Monaghan, 2009; Weshah, 2013). Such discomfort and resistance to keeping up with new technology makes faculty unable to meet the needs of their students. As a result, faculty struggling to integrate an increasing number of technology tools into their classroom instruction are also struggling to be effective instructors to these students. Curran (2008) suggests that educational institutions that require their faculty to incorporate online technologies and tools to facilitate teaching strategies should be diligent in understanding what factors could support faculty members' abilities to do so and what barriers they experience through effectively using online technology in the classroom.

Despite technology being utilized in classrooms for some time at this point, certain faculty members still choose not to incorporate technology into their classrooms or teaching methods (Davidson, Richardson & Jones, 2014; Means, 2010). Technology training programs can be tailored to fulfill faculty members' needs so they can be comfortable with implementing technology in the classroom that will help foster a student-centered, outcomes-based learning environment. It is important to note that, as technology continuously changes, faculty members have learned how to use various programs and equipment on a continual basis, which adds to the time faculty spend on learning the technology, but only from the technical point of view.

Individualized training programs and professional development programs, which can help alleviate stress, can be utilized by faculty to develop a stronger foundation on which to operate such technology. Researchers have argued that faculty "need exposure to and practice with technology which directly relates to existing pedagogical content knowledge" (Ertmer & Ottenbreit-Leftwich, 2010, p. 266). Individualized or small-group training has been found to aid in the success of technology training among educators (de Vry, 2003; Georgina & Olson, 2008). Training can be enhanced when the training is limited to a specific tool that the faculty member wants to learn but learn in a safe environment where they can make mistakes without messing up their courses. This safe environment can help to increase faculty confidence and potential increase in usage of the tools learned (Hartsell, Herron, Fang, & Rathod, 2010). By eliminating some of the stressors—such as low computer self-efficacy, high computer anxiety, and the amount of time required for learning the new technology—faculty members may demonstrate an increase in technology utilization and technology integration in their courses. Conversely,

without addressing these stressors, faculty members may continue to reject the utilization of the latest technology in the classroom (Shu, Tu, & Wang, 2011).

One of the barriers to effective technology integration is computer self-efficacy. Self-efficacy is derived from the social cognitive theory, which accounts for the different roles learners utilize in their everyday learning and human behavioral adaptation (Bandura, 1987). According to this theoretical framework, learners are self-regulating when it comes to their learning methods (Moos & Azevedo, 2009). This framework may help explain how individuals acquire knowledge and what other items may influence this learning effort, such as personal factors and learning environments. Bandura (1987) stated that self-efficacy is one's self-perception of one's capabilities to meet situational demands based upon current states of motivation, the course of action needed, and cognitive resources. If a faculty member has a current low level of computer self-efficacy or a high level of computer anxiety, then that member will be less motivated to utilize new forms of technology in teaching methods.

The significance of this problem is that these faculty members allow stressors and barriers to stop them from learning and using current technology in the classroom. As noted by Ertmer and Ottenbreit-Leftwich (2010), most individuals expect certain professionals to be up-to-date with technology, such as professionals in the fields of medicine and law enforcement; however, this expectation is rarely applied to educators. In looking at what faculty members currently utilize in the classrooms, faculty members utilize the same tools—such as PowerPoint, Scantron cards, slide shows, and videos—like instructors who came before them. As with other professions, faculty members are expected to use technology in the classroom to satisfy the needs of 21st-century learners

(Courts & Tucker, 2012; Ertmer & Ottenbreit-Lefwich, 2010). To achieve these skills, it is necessary for schools to assist educators in understanding how to use new forms of technology, which in turn can be used to facilitate meaningful learning (Eastmen, Iyer, & Eastman, 2009; Lai, 2008).

Conducted research has focused on working with and training adult learners, which has shown that these types of learners are more comfortable and willing to adapt to new technology as long as the training takes into consideration their current levels of computer use and experience (Ertmer & Ottenbreit-Lefwich, 2010; Mitzner et al., 2008). Moreover, with individualized training, adult learners can be encouraged to learn more clearly explained concepts (Chang, Shieh, Liu, & Yu, 2012). This individualized instruction can benefit faculty in a positive way when undergoing technology training, thus addressing barriers that have hindered the learning process in the past, such as lacking computer self-efficacy and decreasing levels of computer anxiety. Because adults need additional time to attain the basic skills and additional assistance when undergoing technology training, individualized training is a more appropriate concept (Mitzner et al., 2008). Currently, group training is being used by most schools, including Harper College and McLennan Community College. Through the exploration of how faculty members experience individualized training for technology integration, trainers for academic institutions can learn how this strategy can be used most effectively for faculty development.

**Dissertation Goal**

The purpose of this study is to understand how in-service faculty experience individualized training as a method of teaching faculty how to use the technology and

integrate it into their courses. The lived experiences and perceptions of in-service faculty regarding the individualized training are specifically focused to determine how individualized instruction is perceived to help or hinder integrating technology into the faculty members' courses. In relation, the researcher explores the unique elements of individualized training. In addition, the researcher also has the opportunity to demonstrate how in-service faculty members' lived experiences of individual training add to the body of knowledge. The focus is the experience of Harper College and McLennan Community College's in-service faculty, who had experienced training through current group training and individualized training. Higher education faculty from general study areas, like English, math, and science, were invited to participate.

This qualitative study includes the collection of data using phenomenological interviews. Phenomenology is a qualitative approach that seeks to investigate individuals' perceptions, feelings, and opinions based on their lived experiences in relation to a particular phenomenon. The approach deals with comprehensive descriptions and supports a reflective structural analysis portraying the essences of the experience (Moustakas, 1994). In the case of this study, the phenomena studied were the lived experiences and perceptions of faculty regarding the individualized training.

The researcher chooses the phenomenological approach to understanding the experiences of individualized training among faculty members and determines how the individualized training assists in technology integration. This is the best method for understanding the experiences of individuals and for gathering comprehensive understanding of an experience or phenomenon (Rubin & Rubin, 2004). This method is popular among social researchers for gaining a lived experience's essential meaning. A

phenomenological research design allows the researcher to completely capture and characterize a phenomenon based on how participants perceive, describe, feel, remember, and make sense of this phenomenon (Patton, 2001). According to Patton (2001), "to gather such data, the researcher must undertake in-depth interviews with people that have directly experienced the phenomenon of interest; that is, they have 'lived experience' as opposed to secondhand experience" (p. 104).

## Research Questions

The research questions follow:

**RQ1**. How do in-service faculty members describe their experiences with individualized instruction? What themes emerge from these experiences? What is the overall essence of the experience?

**RQ2.** How do in-service faculty members perceive the effectiveness of individualized training in helping them integrate technology into their classrooms?

**RQ3.** From the in-service faculty members' perceptions, what are the barriers of individualized training in helping faculty to integrate technology into their classrooms?

## Relevance and Significance

The significance of this problem is that higher education institutions need to address faculty barriers to create an effective training program that increases technology use in the classroom. As noted by Ertmer and Ottenbreit-Leftwich (2010), most individuals expect professionals to be up-to-date with technology; however, when it comes to educators, this expectation is rarely applied. Ertmer and Ottenbreit-Leftwich (2010) state that faculty members use the same tools used in the past. Faculty members are expected to remain up to date with the technological trends to meet the students'

needs (Courts & Tucker, 2012; Ertmer & Ottenbreit-Lefwich, 2010; Kurt, 2013; Means, 2010). Students today use technology in their everyday lives, and they expect to use the same pieces of technology to the same degree in classroom and academic settings (Kurt, 2013; Means, 2010). In not utilizing technology in the classroom, students could become uninterested in the course material and learning methods of that institution and transfer to other institutions that offer the technology they are accustomed to utilizing. For faculty members to gain the skills necessary to integrate technology in the classroom, institutions should first assist educators in understanding how to use the technology and how it can relate to their pedagogy. This will help foster a meaningful learning environment and satisfy present-day learners' needs (Eastmen et al., 2009; Kopcha, 2012; Lai, 2008).

Most of the research conducted in faculty development and technology integration in the classroom focuses on the learner's perspective or teachers in the K–12 programs (Courts & Tucker, 2012; Ertmer & Ottenbreit-Lefwich, 2010; Means, 2010). Previous literature focusing on the learners focuses on how technology assists learners in achieving a better learning experience instead of focusing on how it can be related to the faculty members' pedagogy (Abbitt, 2011; Edmunds, Thorpe, & Conole, 2012). Few studies focus on faculty in higher education, which is why this study addressed the topic of providing effective training programs for higher education faculty to increase technology integration by in-service faculty. During this study, the researcher looked at utilizing individualized training sessions to help increase educators' knowledge of Blackboard, how to use the technology in the classroom, and how educators' can relate to the usage of Blackboard to their pedagogy. Through this investigation, the researcher hoped that a

greater understanding of how individualized instruction can be used as a faculty development strategy would help technology integration.

Though the focus was on Harper College and McLennan Community College, where members of the colleges' leadership have responded to students' needs by offering Blackboard as an online supplement for face-to-face courses, the findings of this study could be used to generate an understanding for other educational technologies or systems used in the classroom. Blackboard is a learning management system (LMS) which students can access from various devices, such as computers, iPads, and smartphones. This technology's use may be largely beneficial to the faculty and students when utilized effectively.

**Barriers and Issues**

In exploring the issue of creating an effective training program, certain barriers and issues needed to be addressed. Some of the barriers included gathering a group of faculty members willing to gain a better understanding of Blackboard and how to implement Blackboard into their classroom. As noted in the review of the literature, if an individual has a low level of computer self-efficacy or a high level of computer anxiety, it is possible that individual may not wish to participate in the study. This could potentially cause the pool of participants from which to choose from a sample to be smaller than ideal. This could also create a pool of participants with various levels of existing technology utilization backgrounds, different levels of computer self-efficacy, and different levels of computer anxiety. This was evident in the participants in this study, as the original number of participants was 12, which was quickly reduced to 10 as two

participants quickly withdrew from the study, citing issues of time and comfort levels with the technology.

Various studies in the past have addressed the issues of teaching faculty using new technology, but this study went beyond the typical group training and provided customized, individualized training for the faculty members. This caused some additional issues, as there was a considerable amount of time required from both the trainer and the study participants involved.

The following list describes the various issues present for this study:

- A very low turnout for participants from Harper College resulted in expanding the study to a second site, McLennan Community College.
- The panel of faculty members gathered who were willing to participate in the study for the entire length of the study totaled 12. Of the 12 participants who volunteered, two quickly withdrew due to time constraints and self-efficacy issues.
- Time coordination with the participating faculty members for the initial interview and the weekly individualized training sessions became increasingly difficult with the addition of the second site, as McLennan's faculty training was conducted via videoconferencing, as well as balancing the schedules with Harper College's faculty.
- Coordination with the faculty development department at Harper College ensured a classroom with technology access was available for individualized training sessions.

- Coordination with the faculty development department at McLennan Community College ensured the participants had access to a computer for the videoconference training sessions.
- Coordination with the faculty members for interviews after the training had been completed.
- Coordination with the faculty members for data validation to ensure their interviews were correctly transcribed.

The study had certain barriers and issues to resolve, but because the participant group had a diverse background and varying types of barriers, the study provides information about how academic institutions can adjust their training methods to enable integrating technology and its utilization by faculty members.

**Assumptions, Limitations, and Delimitations**

The researcher assumed the phenomenological methodology is the most appropriate for the research purpose because it enables the researcher to explore lived experiences within a natural setting. Conclusions were generated from the participants' responses regarding the issue of interest. Phenomenology enables the researcher to assess how participants perceive, think, and feel for an issue of interest (Creswell, 2009; Vogt, 2007). According to van Manen (1997), phenomenology reveals the meanings that participants ascribe to a specific issue of interest. Van Manen (1997) states the "lived experience is the starting point and end point of phenomenological research" (p. 36). Moreover, these experiences and their meanings can only be understood and captured if the participants will engage in in-depth conservations (Polit & Beck, 2004; Van Manen, 1997).

However, there are inherent limitations to a phenomenological methodology design. Given the methodology design and the use of phenomenological interviews as the major source of data collection, the potential for interview bias exists and the reliability of the results may be questioned. However, the researcher reflected upon her stance toward the research problem and maintained an awareness of any bias throughout the interview process. Regarding the reliability of the results, the researcher employed methods—such as member checking—as a way to improve the trustworthiness of the results.

This study was delimited to the employees of Harper College and McLennan Community College, who experienced training through the individualized training and taught the various subject areas: business application, healthcare administration, biology, animal science, business math and college readiness. A sample of 20 participants was proposed but the study was only able to solicit 12 participates for individualized training and various interviews. Using interviews as an approach to data gathering was more appropriate for the current study because the purpose and research questions required the input of participants regarding their lived experiences concerning the training they encountered. Though the study was limited to the use of semi-structured interviews, this was sufficient to reveal more information and explanations from the participants compared to what could be gathered through surveys (Moretti et al., 2011).

**Definition of Key Terms**

By explaining or clarifying the meaning of the following terms, readers will have a better understanding of these words as they relate to this study.

Barriers refer to elements that obstruct the effective use or learning of an innovation. These are issues related to the adopter of the innovation and the innovation itself. Issues are often related to how the innovation is communicated (Funk, Tornquist, & Champagne, 1995).

Computer anxiety is a psychological construct that is a "fear of computers when using the computer, or when considering the possibility of computer use" (Hasan & Ahmed, 2010, p. 84).

Computer self-efficacy is a judgment of one's capability to use a computer in the future when faced with a new or unfamiliar situation (Compeau & Higgins, 1995).

Content knowledge is described as "knowledge about the actual subject matter that is to be learned or taught" (Mishra & Koehler, 2007, p. 5).

Digital divide is the gap between students' knowledge of technology and the faculty members' knowledge of technology in the classroom and in the everyday world (Project Tomorrow, 2011).

Educational technologies are technological options that can alter faculty members' delivery methods and lead to enhanced learning outcomes, fewer costs, and improved communication between faculty and students (Heirdsfield, Walker, Tambyah, & Beutel, 2011).

In-service training is training provided to faculty that are currently employed in higher education classrooms.

Information and communication technology (ICT) is technology that provides access to information through telecommunication methods, such as the Internet, wireless networks, and cell phones (Lai, 2008).

The International Society for Technology in Education is an association that advocates for the utilization of innovative and effective technology use to promote excellence in learning. Advocacy includes providing professional development and developing the standards for technology use for students, faculty, and administrators that are internationally used in education (International Society for Technology in Education, 2008).

Online technology refers to devices, machines, and techniques used to facilitate productive processes from a computer network (Anderson, 2003).

Pedagogical knowledge (PK) refers to knowledge about various teaching methods that align with educational purposes, goals, and values, which allows for the incorporation of such materials and methods in the classroom (Mishra & Koehler, 2007).

PCK is the knowledge about content that can promote learning the classroom through curriculum, assessment, and reporting (Mishra & Koehler, 2007).

Phenomenological research is research that includes a systematic method to examine and describe the “lived experience” (Creswell, 2007) of participants to understand the meaning and nature of a phenomenon (Cilesiz, 2011).

Professional development comprises activities that improve a faculty member’s instructional knowledge. Activities could consist of group training, research, conferences, or learning something new about technology.

TCK is a faculty member’s understanding of how technology and content can relate and assist each other (Mishra & Koehler, 2007).

TPACK is the understanding of how content, pedagogy, and technology knowledge interact with one another. All components need to be assessed simultaneously (Mishra & Koehler, 2007).

Technological (TPK) is an understanding of the relationship between technology and learning with a focus on how technology can impact on the learning process. TPK also addresses the constraints of technology in learning, along with constraints to pedagogical strategies (Mishra & Koehler, 2007).

Technological knowledge (TK) is the understanding of technology and having sufficient knowledge to achieve implementation goals and technological changes (Mishra & Koehler, 2007).

# Chapter 2

## Review of the Literature

U.S. Education Secretary Arne Duncan noted that the nation's school systems, whether higher education or school/district levels, have yet to utilize technologies' full potentials in the classrooms. Leadership at these institutions needs to adopt better training techniques so educators can integrate the technology into the classroom that will enrich the learning experience (United States Department of Education, 2010). Many educators have acknowledged the importance of having technology in the classroom and its impact on the learning process but need a better commitment from leadership to not only allow access to the technology but to also training the faculty in how to effectively use it. Research has shown that an increase in usage of technology in education also provides an economic benefit to the country as well (Cervera & Johnson, 2015; Stine, 2011).

The goal of the research was to understand how in-service faculty experience individualized training as a method of teaching faculty how to use the technology and integrate it into their courses. This section presents a review of literature related to this topic. The review covers studies on the benefits and examples of technology integration, limitations to integration, and barriers to technology integration, faculty perceptions, TPACK, adult learners, and training program considerations.

Despite the abundance of studies on ICT's effects, most of the research that has been conducted in this field has focused on the learner's perspective. Previous literature is too focused on how technology will help students achieve a better learning experience through technology use. Limited studies have focused on higher education faculty, which is why this study researched how individualized training increased technology utilization in the classroom for in-service higher education faculty. Current models of training today are completed by training the faculty on the features of functions of the learning management system instead of how those features can be incorporated into the faculty's curriculum (Keengwe & Georgina, 2012). The individualized training needed to go beyond the basic concepts of the computing technology, as it needed to be relevant to the curriculum being taught and aligned with the faculty member's personal teaching and learning philosophies. This is why individualized training could be such a benefit to teaching faculty how to integrate technology, as long as the training is individualized and curriculum-based (Baylor & Ritchie, 2002; Beckers, 2000; Roberts, 2003).

Observations in the classroom—ranging from K–12 academic settings and higher education—have noted the modest educational technology utilization (Means, 2010). Despite decades of promotion at all levels, classroom practices in most schools have changed very little from those of the mid-20th century (Means, 2010). Recent large-scale survey results revealed an increase in faculty technology use between 2005 and 2007; however, since this time, there has been no increase in technology-based learning activities (Bakia, Means, Gallagher, Chen, & Jones, 2009). Gray, Thomas and Lewis (2010) conducted a nationwide survey about educational technology implementation and discovered that on 29% of surveyed teachers reported using any type of technology

during class time even though they reported that 93% of the schools were Internet accessible. Ehrlich, Sporte and Sebring (2013) conducted a study of Chicago schools and found that nearly 30% of students rarely used technology for instructional purposes. Faculty and student use of technology seems to occur more often outside the classroom than within the classroom which is creating a student population that has a higher level of computer literacy than the faculty (Lahti, Hätönen & Välimäki, 2014). According to the United States Department of Education Office of Technology (2015), more than 90% of children under the age of 17 are using computers which also demonstrates the importance of integrating technology in the classroom.

Many forms of technology can be used in educational settings or for learning purposes. A typical modern college student is likely to know more about Wikipedia than World Book and would likely know more about how to locate bibliographic material online than in a library (Courts & Tucker, 2012). Faculty can utilize this knowledge to help promote learning for present-day technology-savvy students (Ertmer & Ottenbreit-Leftwich, 2010). Technological methods like online videos, social networking, blogs, virtual office hours, and learning management systems can be utilized in the classroom (Courts & Tucker, 2012). For veteran faculty members, these methods may seem foreign, but to the youth entering college today, these newer technologies are common and familiar ground (Green & Hannon, 2007). The technology to support learning, consumer demands, implementation into the classroom, and the knowledge to support currently exists. The challenges are to find ways to integrate this technology into the classroom with the faculty members' full support which means the faculty need to have the knowledge to properly implement the educational technology to meet the needs of the

students and align with the course objectives (Ballou & Springer, 2015). Though studies have established the importance of faculty members to integrating technologies in the classroom due to modern students' needs, limited studies have focused on how faculty members should go about it and what skills they should have to effectively do so.

**Benefits of Technology Integration**

Technology has come a long way and has changed how we do things not only in society but in the classroom today. These advancements are noted to not only help the student advance in their career but also a benefit for the country economically as well (Gerver, 2014). Matthews and Walton (2013) note that in today's digital world, technology is a major contributing factor to not only creating a level of computer literacy but to also assist in the process of learning how to think critically. Because of these changes in society, faculty need to make the necessary changes in the classroom to incorporate technology to help students gain the necessary skills that society is looking for. This does require that faculty make changes to how they present the material in the classroom. Aaronsohn (2003) explains that traditional teaching methods include teaching that focus on the content, with the faculty member considered an expert. Curriculum content is expected to be "covered" so students can reveal their acquisition of a particular body of knowledge. Student activity consists of paying attention to and listening to the faculty. The primary focus consists of the product, not processes, for that traditional type of instruction. These traditional teaching methods and the way students learn, according to Aaronsohn (2003), pleases faculty. Most people were not taught to think for themselves but to just memorize the information presented.

In seeing how technology can change the classroom and the learning environment, ICT was introduced and began the integration process. ICTs give students the experience of obtaining immediate feedback on their work. ICTs also give them adequate privacy and a more time reinforcement for their work, which all lead to a supportive learning environment (Sang, Valcke, Braak, & Tondeur, 2010). These features are generated by technology use in the classroom, which helps students become engaged, even though the content being learned could be tedious and challenging. Using ICTs also allows immediate notifications for the learners, which can assist in an increase in performance, as the learner will immediately be notified of any negative performance; this can reduce learners' frustration and the time devoted to learning and relearning the correct information, as well as the procedures being taught in class (Graesser, 2011). Graesser also notes that ICTs allow students to receive corrections on their work without the students feeling judged. Students will not feel insecure or embarrassed, even though they engage in trial and error behaviors, which will lead them to make mistakes. Students can be exposed to different ICTs in classrooms, such as games, applications, and multimedia presentations, which usually help the students better understand specific concepts. ICTs in the classroom, therefore, can lead to a higher sense of satisfaction so students are more willing and engaged in learning and exploring the taught academic concepts. Studies established that ICT programs, overall, can enable students to have more flexibility in how they learn. As a result, ICT programs empower the students.

Technology use in the classroom has been found to have a positive effect on student learning and faculty performance (DiVall et al., 2013; Drijvers, Doorman, Boon, Reed, & Gravemeijer, 2010; Lubin & Ge, 2012). In DiVall et al.'s (2013) study, the

researchers gather perceptions of students, faculty members, and school administrators regarding the frequency and appropriateness of classroom technology use in their classes. A total of 466,124 faculty members and 12 school administrators participated in the study. The results indicate that the most frequently used ICTs are course management systems, audience response systems, and systems that capture lecture content. Furthermore, faculty members and students expressed that the faculty members used course management systems and audience response systems in the appropriate instance and manner. However, the more technology-literate respondents reported a significantly greater preference for increased use of classroom technology, despite the data indicating that 86% of faculty members reported that they changed their teaching methodologies to meet student needs. Ninety-one percent of the students agreed that the use of technology satisfied their needs (DiVall et al., 2013). Properly training faculty to deliver the content using the appropriate technological tools can have a big influence on the overall teaching and learning experience (DiVall et al., 2013; Lubin & Ge, 2012).

In an additional study conducted by Drijvers et al. (2010), which dealt with technology use in the classroom, the researchers explore the availability of technology in the mathematics classroom and the manner in which the faculty members facilitate student learning with the use of technology. Drijvers et al. (2010) used the theory of instrumental orchestration to guide their research in investigating and determining the types of orchestrations faculty members develop when using technology and the extent to which it affects faculty members' views on mathematics education and technology's role. Videotapes of 38 lessons were taught by three faculty members and were used for the study. These faculty members also provided information regarding their views through

completing questionnaires and interviews. Through a qualitative analysis, the researchers identified the orchestration types and faculty profiles. Results revealed that the orchestration preferences of the three faculty members were significantly related to their views of technology use.

**Examples of Technology Integration**

According to Hinson, Laprairie, and Cundiff (2005), even though 99% of full-time public school faculty members could access computers and the Internet in their schools, only 39% integrated technology into their lessons. Thirty-three percent of public school faculty members considered themselves capable of using computers and Internet teaching; however, 66% felt somewhat or not at all prepared to use this technology in the classroom. According to the researchers, to implement positive technological changes, faculty members need skills first to use technology and then to apply the techniques in their teaching. Realistically, the researchers claimed a successful technology integration plan should span 3–5 years. In addition, several stages make up a model of strategies proven successful when integrating technology into the classroom. The first thing to do is to develop a professional development team and include not only faculty members, administrators, school staff, community members, and parents, but students and parents, who should develop a plan and guide all aspects of the initiate. The second stage involves preparation. The professional development team will determine training and implementation, as well as the project's aspects, including individuals who will participate, which strategies and delivery participants will utilize, and evaluation components. The next stage involves instruction, which works best on-site, with faculty members allotted designated times for planning, practicing, and sharing, as well as time

to test techniques and acquired training. The next stage involves refinement. This is where faculty members must be given all needed necessary resources (e.g., hardware, software, and peripherals, such as digital cameras), along with qualified support. The next stage involves evaluation. To determine the merits of the project and impact on learning and teaching, formative and summative evaluations need to be implemented. Accessing outcomes can help determine whether to continue the program (Hinson, Laprairie, and Cundiff, 2005).

Deubel (2006) contends that faculty members can transform the students' love of video games into a useful and valuable learning tool. According to Deubel, lessons currently being learned in school are becoming more fun due to their resemblance to video games. It was only a matter of time, Deubel stresses, for the technology behind a computer and online gaming technology to penetrate the educational system. Marc Prensky, in Digital Game-Based Learning (McGraw-Hill, 2000, as cited by Deubel 2006), states that schoolchildren today—from the elementary level through college—travel with a varied array of technology, such as MP3 players, smartphones, and laptops, which have access to the Internet. Digital game-based learning links educational content with a computer or online games and is effective in the learning process if managed properly, as it can present positive potential opportunities for a wealth of educational application. Digital game-based learning motivates students to learn by making the learning fun. Deubel purports that the use of new technological tactics in teaching is a method that can be effective in teaching almost any subject matter or skillset when utilized and implemented correctly. Additionally, the constructivist theory, which

promotes active engagement and experiential learning, supports this learning style (video game use in the classroom).

Though research supports these and additional benefits of gaming, which could include therapeutic benefits and increased motivation, a number of faculty members are still resistant to students using video games in the classroom. Their reasons include the following:

1. A game is inconsistent with learning objectives.
2. A game distracts students from learning.
3. A game's components (flickering, sounds, etc.) trigger negative and/or cognitive and physiological responses.
4. A game presents unacceptable violence.
5. A game does not fit into the current standards-driven accountability movement in the educational realm (Deubel, 2006).

A number of case studies have countered these faculty members' concerns. Video games have been found to contribute to the development of a child's spatial abilities. They also assist children with special needs improve their basic skills in language, math, and reading. Video games are reportedly even linked with social benefits, even though they are frequently played in isolation, as they constitute a common communicative interest (Deubel, 2006).

Henry Jenkins, the former principal investigator for the MIT-Microsoft Games-to-Teach Project, examined the educational potential of computer and video games. He contends that when video games are utilized in learning experiences, students experience lower failure threats. As they fully engage in the learning experience through immersion,

children learn to link goals and roles (Deubel, 2006). With successful studies of technology utilization at all education levels and how studies show the students' benefits, training higher education faculty to utilize and integrate technology is an important asset to the learning process for college students. This is equally important when incoming students are accustomed to learning through technology.

Delgado, Wardlow, McKnight and O'Malley (2015) conducted a study that did a review of the integration, resources and effectiveness of technology in K-12 classrooms. Some of the conclusions derived from the study showed that over the past few years, student-to-device ratios have reduced from 11:1 to 1.7:1. The ratio also showed how the school's resources dictated the amount of resources allocated to technology since many did not achieve a 1:1 ratio but a few schools were able to achieve this goal. The overall investment in terms of funding technology for the classroom have shown a decline but there has been an increase of 97% of teachers having more than one computer in their classroom. That number reflects the growing changes in the K-12 system with adding in more technology for the students to work from and increasing the overall percentage of the classrooms that have access to the Internet to 93% (based upon the literature used for this study). In showing the increase in technology integration in the K-12 education system, it increases the need to ensure that higher education institutions keep pace and offer technology to incoming college level students.

**Limitations and Barriers to Integrating Technology in the Classroom**

There are many benefits to technology utilization in the classroom, but some limitations exist in making this integration a reality. The work of Seamon and Levitt (2001) – as cited in Cole and Stryon - states that faculty, while being aware of the need

for technology use in classroom instruction, are at the same time, “somewhat limited in their skills and desperately search for ways to implement technology to assist them in their lesson planning with the students’ best interests in mind” (Cole & Styron, 2005, p. 27).

As mentioned in Cole & Styron (2005), the work of Poole and Moran (1998) has identified several factors known to contribute to the ineffectiveness of staff development in technology. Those factors are the following:

1. lack of support from school administration,
2. lack of awareness of what is needed in the schools,
3. one-shot workshops that are inadequate and that have no follow-up,
4. training expense, and
5. a lack of continued support (Cole & Styron, 2005).

The study conducted by Cole and Styron (2005) is quantitative in nature and involves gathering data through the use of a causal–comparative design involving the responses of 90 faculty members who participated in online training modules through FacultyLine, a free professional development program sponsored by PBS. The analysis was conducted through the use of a survey that focused on the determination of a difference in attitudes concerning online professional development. A factor in the analysis was the level of computer experience possessed by individual faculty members prior to their participation in an online professional development session.

The factors noted by Cole and Styron (2005) are important factors to address even in the current age. Weshah (2013) addressed the importance of getting leadership on board with full support of implementing technology in the classroom. This support will

help faculty to have a better awareness of the technology available and how to use that technology because if faculty do not understand how to integrate the technology, they will not use it. In addition of the support from leadership, faculty need to have the support of technical support for any and all issues as a lack of service creates additional technology and learning problems for both the faculty and students.

In addition to technology integration limitations, barriers also prevent faculty from utilizing technology in the classroom or learning processes. Stevens (2014) designed a study to assess the impact of training on the time needed for faculty members to effectively use technology in the classroom. Many faculty members utilize technology in the classroom to enhance student achievement; however, only a few have observed an increase in student achievement levels. The researcher designed a quantitative study to determine the length of time faculty spend using technology in classrooms and the length of time faculty need to maximize the effectiveness of technology integration and training on the time needed to integrate technology into teaching practices. The researcher acknowledges that even though previous studies show training can lessen the time needed for faculty to use technology in their classrooms, those studies fail to show the length of time faculty spend integrating technology and the length of time faculty uses reducing technology integration because they have undergone training. The researcher focused on the barrier of time. The researcher found that time spent on integrating technology does not generate the maximum effect. The number of minutes devoted to integrating technology into the classroom is not similar to the number of minutes believed are needed to get the maximum effectiveness from teachers' technology use. The faculty members spent 55 minutes preparing to integrate technology, even though 131 minutes are needed

to get the maximum effect. This means the faculty members were not devoting sufficient time to integrating technology. Zhang (2015) found that more time was needed to learn the new technology as gaining technology proficiency is something that requires lots of time, practice and patience on the faculty's part.

Computer self-efficacy and computer anxiety are two additional barriers that need to be addressed when trying to get more faculty to integrate technology in the classroom. It is also necessary to address faculty members' perceptions of what this additional technology adds to their workload. These concerns were addressed beforehand, as it is important that faculty members recognize the positive aspects of using information and communication technologies in the classroom, which results in successful technology–classroom integration (Bitner & Bitner, 2002; Hartsell et al., 2010; Means, 2010).

Self-efficacy is derived from the social cognitive theory created by Bandura (1987; as cited in Moos & Azevedo, 2009). Social cognitive theory addresses the areas of "self-regulatory, self-reflective, cognitive and vicarious processes in human behavioral adaptation" (Moos & Azevedo, 2009, p. 577). Research has demonstrated that learners with higher self-efficacy will take on the challenges of learning something new, and learners with low self-efficacy will resist taking on new challenges. In relation to computers, computer self-efficacy is one's beliefs in one's capacity to work effectively with technology, and if one's computer self-efficacy levels are low, it can cause one to not work with or implement technology (Moos & Azevedo, 2009; Wang, Ertmer, & Newby, 2004).

Bandura (1987) addresses the issue of computer self-efficacy by defining it as an individual's judgment of that individual's capabilities to work with a certain skill set.

Bandura also identifies four sources of information used to determine one's level of self-efficacy: successful performance attainment, observing the performance of others), verbal persuasion, and physiological states (Wang et al., 2004). Bandura ascertains that with successful accomplishment of a particular task, one can increase a learner's perception of efficacy, as well as their own efficacy, for performing similar tasks. The goal is to get an individual to perform the tasks repeatedly to increase that individual's personal skills and comfort with that task.

Computer self-efficacy has been researched in the past. Compeau, Higgins, and Huff (1999) conducted a longitudinal study that took place over the course of a year. The researchers explored the influence of computer self-efficacy beliefs and computer anxiety. As the participants continued to work with computers, their levels of anxiety decreased over time, which shows a significant positive influence of self-efficacy toward computer use.

Wang et al. (2004) looked into the use of vicarious learning and goal setting by preservice faculty members. The purpose of this study was to determine computer self-efficacy levels prior to the training and to explore how vicarious learning could improve those levels after training. The preservice faculty members were pretested and went through a 2-hour training session. After the training was complete, the preservice faculty members were again tested to see if their computer self-efficacy levels decreased. The results of this study show that the levels decreased with vicarious training and goal setting.

More recent research addressing computer self-efficacy was conducted by He and Freeman (2010a), who looked into the general computer self-efficacy issues in relation to

its origin theory of social cognitive theory. The results of this study indicate that computer knowledge, current computing experience, and computer anxiety affect computer self-efficacy development in learners. The conclusion of the study includes evidence that computer self-efficacy is comparable to the most general concepts of self-efficacy, which determines that computer self-efficacy and social norms have a strong effect on computer attitudes. As aforementioned, no matter the type of technology, if one's computer self-efficacy is low, there will be little technology implementation or integration into the classroom. One key factor that can have an effect on computer self-efficacy is computer anxiety. These two characteristics can go hand in hand (Beckers, 2000; He & Freeman, 2010a; Wilfong, 2006).

Holden and Rada (2011) conducted a study in which they explore the concept of technology acceptance. In the study, the researchers address the technology acceptance model. Specifically, the researchers focus on how it can be applied to technology integration and how faculty members perceive the integration in terms of usability and self-efficacy. Utilizing the technology acceptance model elements resulted in an increase in faculty acceptance, and, therefore, technology integration into the classroom, which could potentially increase computer self-efficacy. Many barriers need to be addressed regarding any change, but computer self-efficacy and computer anxiety are real issues that need to be addressed by anyone wanting to implement new technology into the classroom. Though there are studies on the specific barriers faculty members face, limited studies have focused on what faculty members should do to resolve these problems.

Computer anxiety is a psychological construct that has received much attention over the years (Beckers, 2000). The exact nature of the construct is still in dispute, but the

generally accepted definition of the construct is an emotional “fear of computers when using the computer, or when considering the possibility of computer use” (Hasan & Ahmed, 2010, p. 84). “Other terms used to describe computer anxiety include aversion to, apprehension of, intimidation by, hostility toward, and aggression” toward computers (Beckers, 2000; Hasan & Ahmed, 2010, p. 84).

Even the basic concept of peer pressure can help faculty members with computer self-efficacy issues and computer anxiety issues and help them utilize the technology: “Colleagues’ influence on one another in a social environment such as school or a project cannot be ignored” (Oncu, Delialioglu, & Brown, 2008, p. 32). Colleagues’ influence is not only a prompt for faculty awareness but it can provide much-needed encouragement for those who do not feel they are as competent as they need to be with the technology. It is common for individuals to display some degree of resistance toward anything new, and faculty “often do not want to invest in technology that they do not know how to use, even if it may be useful in their classroom” (Oncu, Delialioglu, & Brown, 2008, p. 33). Even the faculty members who do decide to implement a new technology have to spend time learning how to use it, and if the system is complex, this will discourage them from making an attempt even further (Courts & Tucker, 2012; Oncu et al., 2008).

Computer anxiety refers to an individual having a fear of using computers or of learning to use technology. This fear can stop an individual from moving forward, which, in the case of this study, would affect technology implementation in the classroom. Hasan and Ahmed (2010) also noted in this definition a demonstrated negative ability to learn computers and to learn new computer skills. If an individual’s fears are too deep, they will avoid what they fear, and in this case, it would cause a lack of new technology

utilization in the classroom. Some of the root reasons this fear can take over include fear of the unknown; feeling frustrated; and possible embarrassment, failure, and disappointment.

It has been stated within the existing literature that there is a relationship between computer anxiety and computer self-efficacy (Hasan & Ahmed, 2010). These concepts go hand in hand because, in some cases, even the thought of embarrassment can stop someone from attempting something new. Computer self-efficacy and computer anxiety can have a significant impact on whether technology is utilized in the classroom. Past studies regarding computer anxiety have noted that this construct should lessen with time, but even today, it is still an issue for many individuals (Hasan & Ahmed, 2010). One would think that with so many advances in technology and with it being around for quite some time, this would no longer be an issue, but it remains a problem for many individuals. These issues are not specific to one gender, race, age group, or location, as these problems have arisen at many institutions.

Wilfong (2006) conducted a study involving a comparison between users' computer use, computer experience, and computer self-efficacy. The results of this study indicated that computer self-efficacy had the most significant impact on computer anxiety. Computer-anxious individuals exhibited a phobia-like symptom, which leads to using computers less, completing tasks less frequently, and completing work slower. Wilfong suggests not forcing technology onto individuals with computer anxiety, as this could worsen present anxiety symptoms. A desensitization process would help this matter; such a process is a technique used in psychological learning theory. This

approach helps anxious individuals by providing them a gradual way to learn; in this case specifically, a gradual way to learn to use the technology.

Another study conducted by Arigbabu (2009) reviews the relationship between computer anxiety, computer attitudes, computer self-efficacy, and computer experience. One of the focuses was the effects on self-efficacy between men and women. After reviewing all the data from the study, the results reveal that men achieve self-efficacy faster than females. He and Freeman (2010b) looked into how specific gender roles make a difference in one's self-efficacy and anxiety levels. Though the focus was on computer self-efficacy, it was noted in the research that computer anxiety does have an effect on the participants' levels of self-efficacy. He and Freeman noted that the study resulted in determining that female participants felt less confident and anxious about working with computers than male participants. Even though the participant group of this study was a student population, it is worth noting, because its focus was on gender and could yield the same results when focusing on the adult learner population (faculty).

**Faculty Perceptions**

Faculty perceptions of technology use and integration can be another method to successful integration and utilization. These perceptions are common among all educators from K–12 and higher education settings, as noted in various studies. According to Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, and Sendurur (2012), early studies showed that faculty members' enacted beliefs, especially when it comes to integrating classroom technology in their teaching practices, often do not align with their espoused beliefs. This can be explained partly by the many external barriers that make it difficult for faculty to use technology in their classrooms without violating their beliefs. However, the

researchers claim that these barriers—such as access and school support—have long been responded to by many schools and, therefore, the problem needs to be revisited. The researchers designed a multiple case-study to revisit the question and to specifically address how pedagogical beliefs and classroom technology practices of faculty become aligned.

Ertmer et al. (2012) chose twelve K–12 classroom faculty members, and they were selected using purposeful sampling based on their award-winning technology practices. The researchers conducted follow-up interviews to assess the interaction between faculty members' classroom practices and the pedagogical beliefs they hold. The researchers found that student-centered beliefs can support student-centered practices. In addition, the faculty members' student-centered beliefs can support student-centered curricula, even if technological, administrative, and assessment barriers exist. The beliefs held by the faculty members and the attitudes they have were found to have the biggest effect on how technologies become relevant to students' learning in the classroom. The majority of the faculty members also claimed that internal factors—such as passion for technology and the possession of a problem-solving mentality, as well as having support from administrators and personal learning networks—can affect their practices. The faculty members themselves admitted that their existing attitudes and beliefs toward technology use are the strongest barriers to using technology in their classrooms effectively. Ertmer et al. recommend that professional development efforts of strategies can shape and alter faculty attitudes, and beliefs should be given a lot of attention. Even though this study focused on K–12 faculty, the same perceptions and issues can be found in higher education as well. Having a good understanding of the how faculty members

perceive technology in general, no matter the level of teaching within the educational systems, can assist in developing a training program that will change those perceptions and could lead to greater technology utilization.

Sadaf, Newby, and Ertmer (2012) designed a qualitative study that assessed preservice faculty members' behavioral, normative, and controlled beliefs concerning the faculty members' intentions to incorporate Web 2.0 technologies into their future teaching practices. They applied the theory of planned behavior to evaluate why preservice faculty members want to incorporate Web 2.0 technologies in their classrooms. According to the theory, faculty members' behavioral beliefs are shaped by their attitude about the outcomes and effects of using Web 2.0, while their normative beliefs are shaped by the social support they receive and the social pressure to use Web 2.0 in their instruction practices. Last, the theory also shows that the faculty members' control beliefs can serve as the foundation of perceived behavioral control over the application of Web 2.0 in the classroom. Using this theory, the researchers collected data using 190 surveys, 12 interviews, and 12 semester reflections from the faculty participants. They found that the preservice faculty members' intention to apply Web 2.0 technologies in the classroom depends on their beliefs regarding the relevance and worth of these technologies in enhancing student learning and engagement. Their willingness to use these technologies in the classroom also depends on the technologies' ease of use and the technologies' ability to meet the modern students' learning needs.

The faculty members' intention to use the Web 2.0 technologies is also affected by their perceived self-efficacy and their beliefs that these technologies are critical for giving students access to learning and interaction anytime and anywhere. If the faculty

members do not believe these technologies can afford the students these benefits, they will not be willing to use the Web 2.0 technologies. The researchers recommended that faculty educators should focus on these beliefs within the faculty development programs so the faculty can effectively use these technologies in their teaching practices (Sadaf et al., 2012).

Kopcha (2012) designed a case study that assessed 18 elementary-level faculty members' perceptions about what they perceive as the barriers to using technology in their classrooms and instructional practices with technology after working two years in a situated professional development. The barriers have to do with access, vision, professional development, time, and beliefs. Interviewing them showed that situated professional development activities can assist in forming an environment that can aid in faculty members' decisions to integrate technology into their classrooms. The results of this study could be applied to higher education faculty members as well, as the perceptions are similar.

Moreover, according to Donnelly, McGarr, and O'Reilly (2011), when trying to integrate information technologies in schools, barriers should be addressed. The majority of these barriers have to do with the individual faculty members and, therefore, it is critical to understand this change process in schools. There are also some misconceptions about the differences between teaching with technology and teaching purely on-ground. This can cause some issues between faculty and administration because administrators may not fully understand the differences between the environments and the stresses imposed. Without a comprehensive understanding of the environment, academic institutions may end up with fewer faculty members utilizing the technology, as they will

view the demands of maintaining the online shell as overly time consuming, which could be viewed as taking time away from the actual course content (Porter, 2004; Wingo, Ivankova, Moss, 2017).

There is also a growing concern regarding the issues of designing the courses for the online environment (LMS) from faculty. These concerns stem from the perception of the increase in workload on faculty, and, in some cases, the time taken to prepare the LMS takes time away from teaching the course. In a study conducted by Cavanaugh (2005), at Wright State University, the amount of time needed to prepare for an online course when compared to an on-ground course resulted in a difference of 25 hours of more preparation time for the online course. The study utilized one instructor to review the time spent between teaching the same course in an online environment and teaching the course on-ground, with the instructor having taught the course previously and having experience teaching in the online environment. This study shows that even when a facilitator has experience in the online environment and experience teaching the course, the amount of time needed to develop the course online is greater. This is the result of setting up the online environment, creating the quizzes, and ensuring that the content is ready for the beginning of the course. Though this study focused on online courses versus on-ground courses, the perceptions carry over to faculty members utilizing an LMS for their on-ground courses, as they perceive setting up the LMS as being similar to creating an online course.

As recommended by Cavanaugh (2005), the planning stage for developing what content should be within the LMS should occur at least six months prior to the LMS being used. Facilitators need time to plan their courses with mentors or others who are

going through the same process. Many faculty members feel unprepared for online instruction or technology integration, as they are under pressure to create the course material and learn the technology needed to instruct adequately (Joy, 2004).

The perception of the amount of time used to integrate and utilize technology does not improve once the technology is set up, and this is due to the constant maintenance needed to ensure the shell is current each term. The course's LMS will need to be maintained, updated, and/or changed based on new content, new textbooks, or changes in the LMS platform (Bates & Poole, 2003; Porter 2004). Many areas need to examine to not only helping faculty members utilize the technology but helping them continue to utilize it for years to come.

Wingo, Ivankova and Moss (2017) compiled the results of 67 empirical studies about faculty perceptions of teaching online that were conducted between 1995 and 2015. The studies gave a unique view into the perceptions of faculty regarding the various perceived barriers that comes with teaching online. As noted in this study, issues of computer self-efficacy, computer anxiety, training issues, teacher effectiveness with the technology and the overall workload of working in an online environment were all noted in the compiled research. The literature that was reviewed focused on the usage of the technology acceptance model which resulted in determining that the model was being used differently in each piece of literature. This was interesting in that even through it was being applied differently, the end result was that the technology acceptance model is a good framework to follow to increase technology integration while addressing the faculty's various perceptions.

**Andragogy**

The limitation, barriers, and faculty perceptions can have a big impact on whether they will utilize the technology. All these areas should be addressed when designing a training program, along with having an understanding of who the learners are in that training program—adult learners (andragogy).

Malcolm S. Knowles, known for being a central figure in the American educational system who focuses on adult learning, espoused the original andragogical model for adult learning (Smith, 2002). Knowles defined andragogy as "the art and science of helping adults learn" (Knowles, 1980, p. 43). The term was originally coined by Alexander Kapp in 1833 but developed into a theory of adult education by Malcolm Knowles in the 1960s (Knowles, Holton, & Swanson, 2005). The theory is an attempt to develop a set of learning strategies for adult learners and how to address adult learning needs. This theory's model focuses on moving toward independent learning and self-directed learning tasks where the teacher is encouraging and nurtures the learning process (Knowles et al., 2005). This approach, or theory, helps provide a rationale as to how to work with adult learners.


*Figure 2*. Six Principles of Andragogy (Knowles et al., 2005)

The andragogical model consists of six different principles: need to know, motivation to learn, orientation to learning, readiness to learn, self-concept, and experience (See Figure 2). Effective training should be designing by incorporating these principles:

- Adults need to know the reasoning behind why they need to learn something before learning it.
- Adults need to be motivated to learn, which helps them respond better to internal versus external motivators.
- Adult learning is problem-centered or life-centered rather than content oriented. This view helps faculty see education as a process for developing increased competency levels in the skillset/content being learned.

- Adults will be more inclined to learn when the topics have immediate relevance to their work and/or their personal lives.
- Adults need to be involved in the planning and the evaluation of their learning.
- Adults' experiences (including mistakes) provide the basis for learning activities (Knowles et al., 2005).

These six principles can be applied by first explaining why the things being taught (commands, process, menus, etc.) are important to the adult learner. This will assist the adult learner in understanding not only why they need to know these topics but what topics are going to be covered and how they apply to their current environment (courses). The instructions for the adult learners should allow the learners to discover things on their own, and the items to be learned should be task-oriented instead of through utilization a memorization learning method. The final step is to ensure the past experience is addressed and that the learning materials account for different levels and experience with technology (Knowles et al., 2005). These principles can help create a collaborative and engaging environment where adult learners are learning what they need to know to utilize technology in their courses, making the topics relevant to current environments (Birzer, 2004; Knowles et al., 2005).

As discussed prior in the literature, limitations, barriers, and perceptions are concerns when creating a training program for technology, but they can be overcome when the training is directly related to the adult learners' (faculty) subject matter and course content (Ertmer, 2005; Kopcha, 2012). All content cannot be presented the same way to all learners, as the learning should be customized to the learners' specific needs.

**Technological Pedagogical Content Knowledge**

*TPACK* (or TPCK) is a technological theoretical framework that addresses the relationships among faculty in regard to their TK, PK, and CK. The TPACK approach looks at each knowledge area and reviews them collectively instead of in isolation. It focuses on the intersections of these components to for PCK, TCK, TPK, and TPACK.

CK is defined as the teacher's knowledge about a subject matter. As Shulman (1986) notes, this knowledge not only includes knowledge of concepts and theories but established practices toward developing knowledge. PK addresses the teacher's knowledge of the practices and processes needed to teach the subject matter. This applies to how students learn, classroom management, and curriculum design. TK looks at how one would utilize technology and work with it. This includes a sufficiently broad understanding of technology to be productive with it whether on a personal level or a professional level (integrated into the classroom). This technology knowledge also allows the user to recognize the value in the technology use that leads to continuous adaptation.

Shulman (1986) derived the basis for the theoretical framework, as he argues that faculty members need a new knowledge base, such as PCK. PCK is defined as the specific PK for a specific content area and how an individual uses knowledge to transform the learning process through various means of instructional materials. This knowledge area also helps in the basics of teaching, curriculum design, and to promote deeper learning.

TCK looks for an understanding of how technology and content can not only influence each other but constrain them. To utilize technology properly, a teacher needs to have a deep understanding of the content area so the teacher can determine what

technology will best assist in learning that content (Shulman, 1986). TPK looks into how the combination of technology can change the teaching and learning the process. This is why it is important to utilize the proper tools for the subject area.

TPACK is the culmination of the deep understanding of how technology and teaching can work with each other to provide a rich learning experience. This is when teachers have a good understanding of the technologies available, how their pedagogy can use that technology, and how they can assist each other in the overall learning experience (Koehler & Mishra, 2009). In looking at what Shulman created in 1986 and where the framework is today, in terms of research usage, a search was conducted using Google Scholar to determine how much TPACK is being referenced in current literature. Three different searches were conducted to determine the usage per different timeframes. The first review dates were set to explore from 1986 to 2017. In using the keyword 'TPACK', the results from Google Scholar were 15,900 articles. In narrowing the search parameter dates to 2000 to 2017, the article counts only dropped by 500 to 15,400. This shows that there was not a lot of literature prior to 2000 referencing TPACK. In narrowing the parameters dates down even further to 2014 to 2017, the results were 7,740 articles referencing TPACK. This shows that TPACK is a framework that is being studies and utilized in greater numbers within the last three years.

In training faculty members to integrate technology into the classroom, the correlation of the technology and the curricula need to be established. Not only do we need to make sure the training is curriculum-based but we need to recognize that we are working with adult learners, so the correlation of technology, pedagogy, and content knowledge (TPACK) is important for successful integration and technology use.

According to Khan (2011), an understanding of TPACK means that faculty will have an understanding of how their pedagogical concepts can be represented by utilizing technology, how to use technology to create enriched pedagogy, how to discern which concepts are easy or difficult for student to learn, and how technology can eliminate the problems students face in various learning environments. TPACK is designed for faculty to receive the most benefit when there are overlapping components from PCK, TCK, and TPK, as this will assist in increased technology integration in the classroom if the faculty possesses all three. Faculty members need to be trained so they can understand how technology can enrich subject domains and how pedagogy and technology work together. This training assists faculty in developing their own TPACK model and increasing technology integration in the classroom.

A study conducted in Turkey, by Keser, Yilmaz and Yilmaz (2015), utilized TPACK to evaluate the competency of preservice teachers with their self-efficacy perception of technology integration. This study was comprised of 713 freshmen and senior class students enrolled in an education program. The results of incorporating TPACK into the study showed an increase in technology integration and an increase in self-efficacy. The study recommended to incorporate additional courses into the curriculum that focus on course design to help improve the technological knowledge of the preservice teachers so they are better prepared for teaching with technology upon graduation. These courses should have a combination of the TPACK framework along with the technology being taught as it will improve a teachers' self-efficacy perceptions towards that technology (Chai, Ling Koh, Tsai, & Lee Wee Tan, 2011).

**Integration and Training Example**

Zelin and Baird (2007) report that the faculty members at a midsized Midwest state university made a decision to create an environment rich with technology. With such a vast change in technology use, innovative solutions were required to make this technology initiative effective. This meant that the university needed to expand its technological resources available for the faculty and students to ensure proper training and support were present. To make this successful, it was determined that private funds would be raised so the renovation of classrooms, technology support, and network equipment could be implemented. This program also required that students leased a laptop from the school, which ensured that all technology was compatible.

The university started the program in a pilot mode with voluntary classes, and the program began in the fall 2000 semester and increased the program to the sophomore-level courses the following year (Zelin & Baird, 2007). A training program was developed for faculty to learn the new technology, which was important to address the implementation barriers to, such as computer self-efficacy and computer anxiety. As noted by Zelin and Baird, some of the most common stumbling blocks for technology integration are that faculty members are not sufficiently prepared or confident in their knowledge to utilize it.

Zelin and Baird (2007) also report that a training committee was formed one year, prior to the start of the pilot program in the study and that the training program for faculty was similar to the Technology Learning Cycle. The Technology Learning Cycle is a model based on the assumption that faculty who utilize and integrate technology are also willing to constantly learn more about the current technology they are using and about

any new technologies that can be incorporated in an education setting. Zelin and Baird also stated that the Technology Learning Cycle has five specific phases:

(1) awareness,

(2) exploration and filtration,

(3) learning,

(4) personal and professional application, and

(5) sharing and reflection (Zelin & Baird, 2007).

The awareness phase is related to learners finding new sources, such as online publications, conferences, and the Internet in general (Zelin & Baird, 2007). The second phase or, "the exploration and filtration phase involves the learners being instructed on the use of the technological innovation and being made aware of the pedagogical applications" (Zelin & Baird, 2007, p. 42).

The third phase, or the learning phase, involves faculty receiving instructions on the use of the technological innovations and becoming aware of the applications of technology and its use in the classroom. The personal and professional application phase involves the incorporating technology into the classroom curriculum, and finally, the last phase, "sharing and reflection," is the phase in which the learner "shares her or his experience with the technological innovation with others and reflects on the impact of the innovation" (Technology Learning Cycle, 2007 in Zelin and Baird, 2007, p. 42).

Because of the wide range of faculty needs for information and skill levels, it was determined that training courses should be offered in a wide variety. Prior to the pilot program in this study, a 2-hour session took place for distributing the notebook computers to faculty with the purpose of familiarizing faculty members with the IBM

notebook computer and Windows Operating System features. A second training session took place with representatives from IBM providing faculty information about various ThinkPad programs at other colleges. Additionally, the faculty members were reportedly provided with an introduction to Microsoft Office software, including

(1) two training sessions about PowerPoint,

(2) two training sessions about FrontPage, and

(3) two training sessions about Excel.

Online classroom products included

(1) an Irwin/McGraw-Hill Seminar and

(2) an ITP/Southwest Publishing Seminar (Zelin & Baird, 2007).

The decision was made that eight training sessions would take place during the pilot program's first semester. Following the first pilot year's intensive training program, there was a change in both the focus and the intensity of training. It is reported that the faculty members were

> . . . teaching laptop courses and were familiar with the equipment and the software to be used in their courses. The focus of training efforts then shifted to discussion-based forums of how to effectively use the technology to improve learning in the classroom. Faculty continued to share ideas in these discussion forums for innovative pedagogy utilizing the laptops. (Zelin & Baird, 2007, p. 46)

It is further reported that faculty "roundtable sessions were conducted in which professors shared their successful strategies and concerns that had arisen after experience teaching with the laptops" (Zelin & Baird, 2007, p. 46). Discussion topics were

1. successful ways to incorporate active learning using the laptops;

2. specific course activities used in the classroom, such as online surveys;
3. incorporating and researching current news items and company information;
4. hands-on application use;
5. use of simulations in class;
6. how to keep students on task with all the distractions possible through wireless Internet access; and
7. how to prevent cheating in a laptop environment (Zelin & Baird, 2007, p.46).

Successful training programs can be used as long as they are planned accordingly and address not only the faculty members' needs but the students' needs.

In Australia, the *Teaching Teachers for the Future Project* utilized the TPACK framework to guide the design of the project (Finger & Finger, 2013). The project involved 39 Australian Higher Education providers and was mentioned by Mishra and Koehler, at the 3rd TTF National Support Network that the project 'dwarfed' anything occurring internationally. The TTF project looked at the development and administration of TTF TPACK Online Survey (Jamieson-Proctor, Albion, Finger, Cavanagh, Fitzgerald, Bond & Grimbeek, 2013). The survey showed that there were measurable improvements in confidence or preservice teachers which will result in a higher confidence level during their teaching careers. In reviewing the teachers' stories of going through the project and how they utilize technology currently provided some interesting insight into how using the TPACK framework helped the preservice teachers to become more comfortable with

technology and to align it with their personal pedagogical approach to teacher (Finger & Finger, 2013).

**Training**

According to the Congressional Office of Technology Assessment (OTA, 1995), only 3% of faculty education graduates confirmed they had confidence in their abilities to integrate technology into their students' curriculum. For faculty who trained in this area, albeit, the International Society for Technology in Education (1999) survey on technology use in faculty education notes training courses did not significantly impact prospective faculty members' technology integration in their technological skills or teaching plans (Timmerman, 2004). Per the Workplace Readiness Report in 2006, students are behind in terms of being prepared for the information based workforce such as teaching with technology (Casner-Lotto & Barrington, 2006).

Gagné (1987) states that faculty training in the productive use of computer technology begins with two models; however, as the computer-literacy movement gained momentum and faculty members began to have access computers for their classrooms, it became clear that the faculty members were going to have new roles and needed new skills. Gagné states the idea of using computers was a challenge to many faculty members. This was further complicated by the assumptions of how to apply this technology to their existing learning model. Barr (1998) suggests that the creation of in-services for training faculty in technology is one method schools can use to increase the integration of computers in classroom instruction.

Training programs vary greatly in their approach and size; they may involve a group training session or an individual session, depending on the topics being taught and

management's decision on how the training will be provided (Caffarella, 2002). Regardless of the methods utilized to carry it out, training is an important step needed to address faculty limitations, barriers, and perceptions to increase technology utilization. Faculty are hired based upon their degree concentration and for technical program, they are hired because of their industry experience. These factors apply to the content to be taught in the classroom but does not guarantee that the faculty member has knowledge of how to use technology in the classroom (Hunter, 2016). As noted by Beas and Salanova (2006), training programs are an effective way to increase a learner's computer self-efficacy and overall attitude toward computer use. Kopcha (2012) noted that when the training is directly related to the actual classroom practices, it can create positive perceptions of the technology, which will also increase integration.

In determining the training process, management typically decides how the training will be delivered (i.e., a group training session or individualized sessions). Many training programs focus mainly on the technology implementation process when the training should go into greater detail about how it can relate to the curriculum, as well as the trainees' characteristics (Harris et al., 2009; Koehler & Mishra, 2009). Examples of these characteristics are qualities such as differences among the individuals' perceptions, their differences in computer skills, their age differences, and their different learning styles. A solid understanding of each individual is necessary to understand the differences and commonalities so that proper training can be delivered (Ertmer & Ottenbreit-Leftwich, 2013; Robbins & Judge, 2009; Walker, Armenakis, & Bernerth, 2007). In addition, as noted by past and current researchers, a correlation between technology,

computer self-efficacy, and computer anxiety has been established, which warrants a look at how organizations address these barriers.

Group training is the most popular training method by organizations, as this approach allows an organization to address a large group of individuals at one time. It is cost effective for the organizations and time effective for the individuals attending (Robbins & Judge, 2009). The groups of learners are expected to meet at one location and are expected to learn the material in a timeframe of one to two days, depending on the amount of content that needs to be taught (Caffarella, 2002). Though this is a more cost-effective way to train a group of individuals simultaneously, it can cause problems with learners who require a more specialized program (Esterhuizen et al, 2013)

This is more evident among older adult learners, as it has been established that older adults are not as advanced as their younger counterparts in their knowledge of computers and Internet use. In addition to the lack of computer knowledge, older adult learners have also been determined to exhibit greater anxiety during the training process, as they are less confident in their abilities to learn and to process the new knowledge (Chang et al., 2012). Learners do not want to feel embarrassed, demeaned, or devalued, which can occur by jumping into an unfamiliar topic (Hassell-Corbiell, 2001). Adult leaners' anxiety about their lack of computer knowledge can play a role in the overall learning process of group training sessions, as the sessions are designed to teach the group as if everyone is learning at the same pace or starting from the same knowledge level.

The alternative to group training is to provide individualized training programs. The effects of individualized and customized training programs have not been

extensively studied; however, based on the existing literature, the concepts have been addressed. Individualized programs offer a one-on-one approach and take the time up front to determine the learner's knowledge level. Providing adults with individualized encouragement and clear explanations can benefit the learner in a positive way, thus increasing computer self-efficacy and decreasing computer anxiety (Chang et al., 2012). Also noted by Beas and Salanova (2006), to establish an effective training program, it is necessary to consider a learner's computer attitude and existing knowledge. If these items are considered, an effective training program can be created with a positive impact on the learner.

Researchers who looked into the training of older adults noted participants in this group indicated they would be more comfortable and willing to adapt to new technology with some formal training, as long as that training takes into consideration their current levels of computer use and knowledge (Mitzner et al., 2008). This is an area where individualized training could be a greater asset to older learners because they require additional time to attain basic skills during the training process. In contrast, group training sessions do not allocate time for this.

Georgina and Olson (2008) have studied technological literacy training among adults. The authors surveyed respondents, specifically faculty members in US higher education institutions, regarding their perception of undergoing training for technological literacy. Results have shown that efficiency may be maximized for pedagogy integration during technology training with the use of an individualized training strategy or small group faculty forums with a trainer. As noted in the literature, individualized training gives the faculty member an opportunity to work with an experienced peer which can

create an environment that the faculty member can use to solve teaching challenges and align the technology with their pedagogical approach (Esterhuizen et. Al, 2013; Georgina & Hosford, 2009; Jackwoski & Akroyd, 2010). These studies on the effectiveness of individualized training did not focus on faculty members' experiences or determine how the individualized training is likely to aid in technology integration in their classrooms.

**Summary**

The literature review showed the growing prevalence of online technology use in the classroom, even though faculty still find difficulties in using these tools in their teaching practices. Moreover, though there are many benefits associated with using technology in classroom settings, some faculty members still are reluctant and unwilling to use technology for teaching and learning in their classrooms. The literature highlighted that faculty members' beliefs and understanding of technology's value in the classroom significantly affects whether they will use these technologies in the classroom. Moreover, though they use these technologies, faculty members still face barriers and issues in making these technologies work effectively in facilitating student learning. Faculty members allow such barriers to stop them from using current technology in the classroom. The next section covers the methodology as used to investigate the experiences of individualized training among faculty members and determines how the individualized training is likely to aid in technology integration.

# Chapter 3

# Methodology

## Introduction

The purpose of the study was to understand how in-service faculty experience individualized training as a method of teaching faculty how to use the technology and integrate it into their courses. Within this chapter, a description of the qualitative, phenomenological research design is provided, followed by the rationale for using this approach to address the research questions. The chapter also contains researcher's subjectivity statement, followed by a description of the population and sample, instrumentation, data collection and analysis procedures, and validity and reliability. The chapter concludes with ethical considerations and a chapter summary.

## Research Design

The phenomenological approach was used for this study, incorporating the use of semi-structured interviews to collect data. Phenomenology is a qualitative approach that seeks to investigate individuals' perceptions, feelings, and opinions based on their lived experiences in relation to a particular phenomenon. The approach deals with comprehensive descriptions and allows a reflective structural analysis, portraying the experiences' essences (Moustakas, 1994). In the case of this study, the phenomena to be studied were the lived experiences and perceptions of faculty regarding the individualized

training. The researcher chose the phenomenological approach to understand the individualized training experiences among faculty members and to determine how the individualized training was likely to aid in technology integration. This was the best method for understanding the individuals' experiences and for gathering a comprehensive understanding of an experience or phenomenon (Rubin & Rubin, 2004). This method is popular among social researchers to gain the essential meaning of a lived experience. A phenomenological research design allows the researcher to completely capture and characterize a phenomenon based on how participants perceive, describe, feel, remember, and make sense of this phenomenon (Patton, 2001). According to Patton, "to gather such data, the researcher must undertake in-depth interviews with people that have directly experienced the phenomenon of interest; that is, they have 'lived experience' as opposed to secondhand experience" (p. 104).

**Research Design Appropriateness**

The researcher chose the phenomenological methodology because it was determined to be appropriate methodology based upon how the data was to be collected and later analyzed. The methodology was used because conclusions were generated from the participants' responses regarding the issue of interest. Phenomenology is best used for exploring the perceptions, opinions, and feelings of participants, depending on their lived experiences with a specific phenomenon of interest (Creswell, 2009; Vogt, 2007). According to Van Manen (1997), the phenomenological approach allows an effective understanding of participants' perceptions of the phenomenon and the meanings they ascribe to a specific issue of interest. Van Manen stated the "lived experience is the starting point and end point of phenomenological research" (p. 36). Moreover, these

experiences and their meanings can only be understood and captured if the participants will engage in deep conservation (Polit & Beck, 2004; Van Manen, 1997).

## Epoché and Subjectivity Statement

To "refrain from judgment" and be open to looking at things from a fresh perspective, the researcher engaged in *epoché* and included the following subjectivity statement. The epoché can be read in Appendix A.

### *Subjectivity Statement*

As a higher education educator with close to 15 years of experience teaching in a higher education environment, teaching technology to others (i.e., faculty and students), using technology in the classroom, and being a corporate trainer, as well as a curriculum designer, my perceptions of educational technology are very broad. My background begins on the technological side with my career as a computer consultant and corporate trainer. My experiences from both the computer industry and corporate training allowed me to begin my career as an educator in higher education. From the corporate world, I designed various networks that ranged from 10–20 devices to working for the Navy and revamping the entire base, which consisted of more than 2,000 devices. Even with my computer background, I made efforts to teach users how to use technology to its fullest. Upon getting into higher education, I took on the role of training other faculty how to use technology in the classroom, designing curriculums around technology, and supporting the technology. I came into higher education with a different approach to my personal pedagogy, as I looked at how technology could be integrated into the learning process, no matter the task. My experiences and views with technology and teaching have changed throughout the years and adapt continually to the latest enhancements available. It is from

this background that I investigated the phenomenon of the faculty members' TPACK while integrating Blackboard into their curriculum. I made every effort to bracket my beliefs throughout the study to achieve unbiased results from the participants.

**Population and Sample**

The target population included in-service faculty members of Harper College and McLennan Community College, who experienced training through their respective institution's current group training program. Higher education faculty members from general study areas, such as English, math, and science, were invited to participate. Institutional Review Board (IRB) approval was obtained prior to any solicitation for faculty members' participation (see Appendix B).

A sample of 12 participants attended the individualized training with seven of those participants contributing data to the study through the interview process. Sampling was performed using both purposive and snowball sampling. According to Glesne (1998), purposive sampling is best for information-rich studies. Participants recruited through purposive sampling are more likely to be willing to participate, give more information, and improve the data's richness. According to Merriam (1998), purposive sampling has different types, such as convenience sampling, snowball sampling, and chain sampling. Snowball sampling was used, which is a recruitment technique where the participants are recruited based on the continuous and ongoing recommendations of participants currently in the study (Creswell, 2009; Seebohm, 2005).

For qualitative studies, the sample size is determined based on the data's saturation point (Mason, 2010). Though there is no specific sample size for qualitative research studies, Sandelowski (1995) noted that sample sizes in qualitative studies should

not be so small that they become impossible to achieve data saturation or so large that they are challenging for conducting an in-depth analysis. According to Boyd (2001), sample sizes used for phenomenological studies should contain at least six participants and range to 10 participants to reach saturation. Morse (1994) also claims that the sample size of six should be the minimum. Creswell (2009) claims that sample sizes for qualitative studies should be at least six and 25 at most. For qualitative studies that involve interviews, the sample size of 10–20 participants is sufficient for gathering detailed accounts of personal experiences (Silverman, 2011). This study started with 12 participants for the individualized training program, but taking into account that not all 12 participants will finish the training program, the study used the data from seven participants. Though qualitative studies suggest 10–20 participants, it is believed that a minimum of six participants will provide sufficient data to compile meaningful results. The researcher sent the potential participants an email containing the recruitment letter (see Appendix C). The researcher asked these recipients to forward the information to anyone they may know who would also like to participate in the study.

**Participant Selection**

The study originally consisted of 12 participants for the individualized training program but was reduced to seven participants after determining that four individuals did not meet the requirements and one individual withdrew after the first interview. The selection of the participants met the following criteria:

1. Had completed the Blackboard training sessions provided by the college.
2. Had a background (content area) of English, math, or Science.

3. Were willing to share their experiences of the training program and how it would change their Blackboard utilization for the future.
4. Were not faculty from any other subject area, as those faculty were excluded.
5. Were not faculty extensively utilizing Blackboard in the classroom, as those faculty were excluded.
6. Were not faculty who were unable to participate during the timeframe of the study; those faculty were excluded.

The faculty members at Harper Community College and McLennan Community College were selected to participate with the selection process being initiated by an email distributed through the Harper and McLennan email system (see Appendix C). The respondents' information was verified that it met the criteria. A follow-up email was sent that contained the Letter to Participants and the Adult General Consent Form (Appendix D). After the release forms were received, initial data collection began with interviews that focused on what aspects of the group training had assisted or hindered participants' ability and willingness to integrate technology in the classroom (Appendix E). This information was used to develop the training program for each participant.

**Instrumentation**

According to Polit and Beck (2004), conducting interviews can help the researcher determine a phenomenon's meaning of based on the participants' experience and own words used to describe an experience. The researcher used semi- structured interviews, which included asking introductory questions before asking the participants to tell their stories and discuss their experiences. The interviews were conducted with the use of interview guides that would aid the researcher in gathering answers to address the

purpose of this study by discussing participants' lived experiences of the individualized training (see Appendices F, G, and H). Interviews were audio recorded to aid in the transcription and analysis processes. The interviews were conducted out in private, neutral, and nonthreatening settings. To maintain confidentiality and privacy, interviews were completed 30 minutes apart and with no one else but the researcher.

Interviews are important for qualitative studies, especially phenomenological methods. Using the interview method, the participants were given the chance to express their views as freely and as naturally as possible. According to Vogt (2007), being natural is important, and as such, participants should view the interview as a normal conversation. Kvale (1996) also claims that research interviews should be similar to daily conversations. If participants are comfortable during the interview, they will give more answers that can help the researcher gain a greater understanding regarding the phenomenon of interest.

**Data Collection Procedures**

There were five phases to the data collection process (Figure 3). These phases were the initial or pretraining interview, the first interview, training development (TPACK), the individualized training, the second interview, and the third interview.

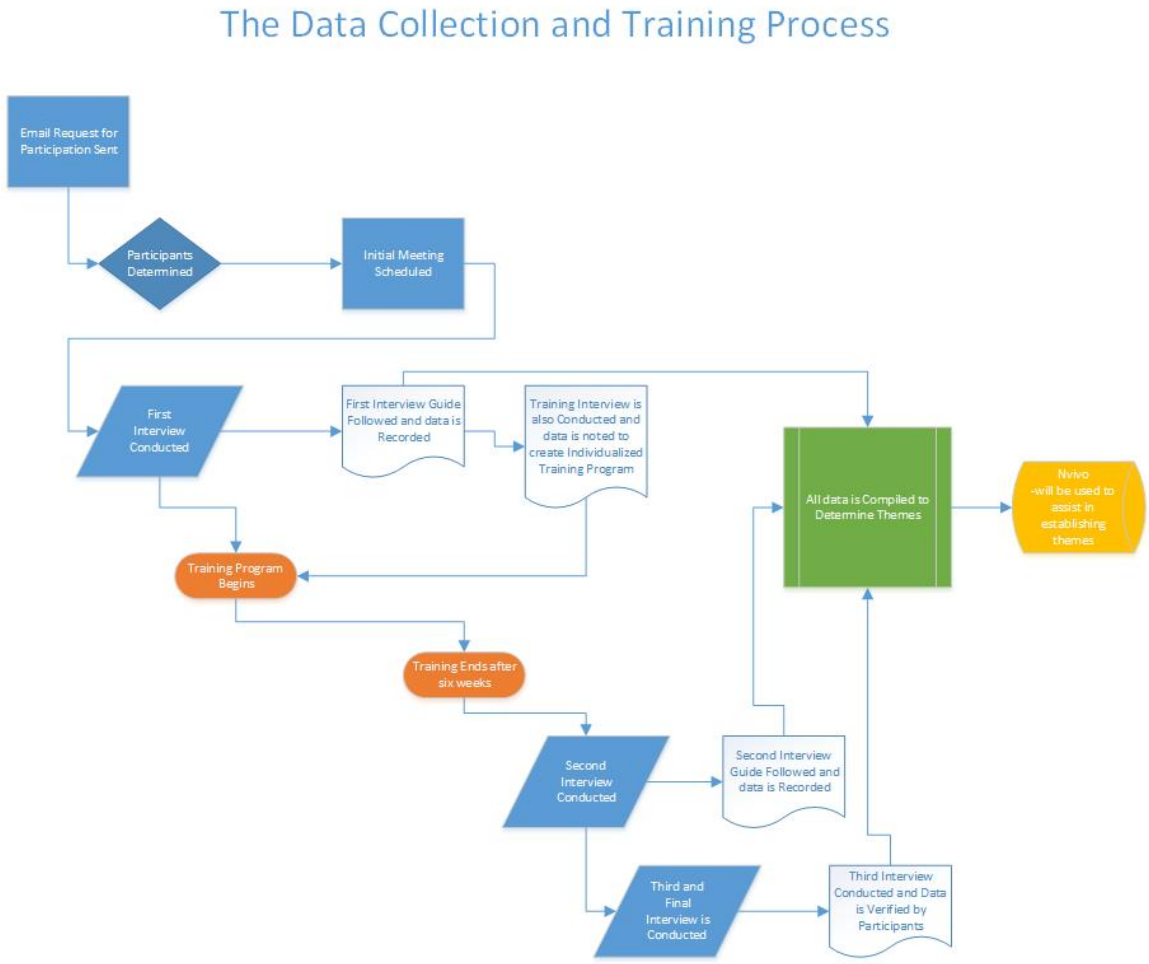


*Figure 3*: Data Collection Process

The initial interview data review was conducted to explore the current training methods. Harper College and McLennan Community College currently utilize a one-size-fits-all perspective; therefore, the current training programs were assessed to determine the items covered and how they were conveyed to the faculty members regarding technology training in general, application to pedagogy, and student-centered learning. Prior to interviewing the participants, research was conducted to gain a better understanding of the current group training methods at the institutions and what topics

were covered. This information was useful to help develop and determine the areas that require the most focus during the individualized training (Appendix E).

Based on the review of the evaluation documents from the initial interview, an individualized training program was developed with clear goals. The individualized training for the college's learning management system, which utilizes Blackboard, follows the TPACK framework (See Figure 1). The individualized training period spanned 10 weeks to ensure that all the participants in the study were included. Each training session was aligned with the TPACK framework, which integrated technology, pedagogy, and CK. TPACK was used as the framework for the individualized training because these important aspects needed to be considered, as such training has been established as a promising approach to facilitating the use of technology in education, specifically in the classroom (Alsofyani et al., 2012). This helped to ensure that faculty members could better integrate the different knowledge aspects of using technology in the classroom with their course designs (Koehler & Mishra, 2009). In addition, the researcher coordinated all timetables and schedules with the participants so all participants were available for training sessions. All goals and guidelines were discussed with the participants prior to their actual participation so they had a clear understanding of what type of training was to be provided, as well as where and when.

One example of a training session addressed how to incorporate all assignments into the grade book instead of having part of the assignments graded manually and some graded in Blackboard. This was accomplished by explaining to the participants how to use the online grade book to reflect all the assignments and how to use the tests/exam tool in Blackboard to automatically grade the exams. Below is a screenshot from a biology

course, which was the basis for discussing the grade book design and how to use the categories for grades (Figure 4).

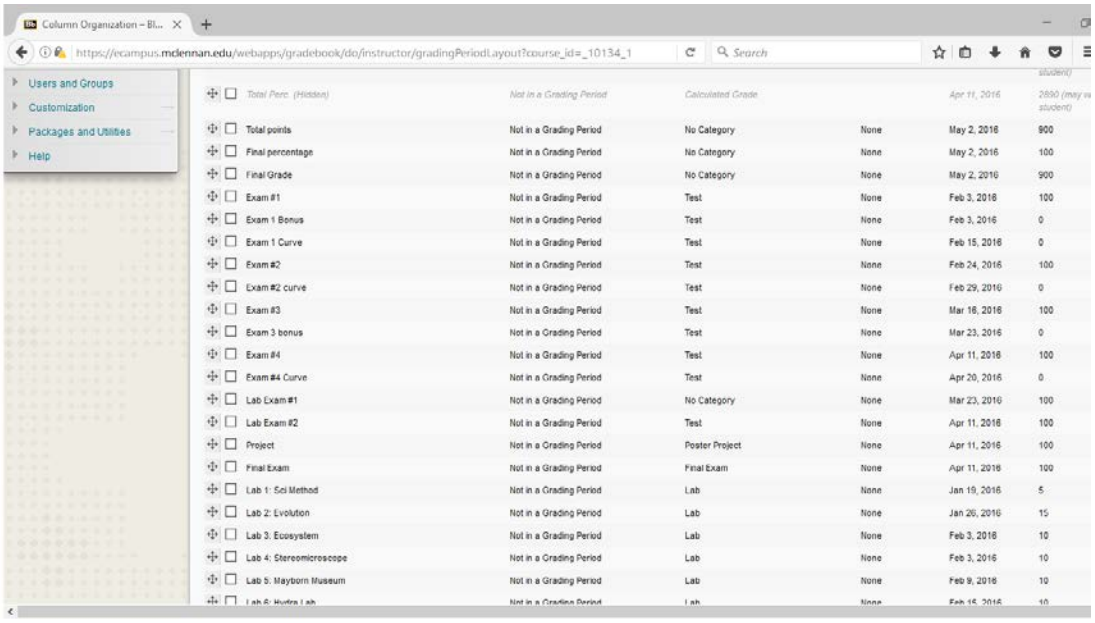


*Figure 4*: Gradebook Example

Prior to the training, the participant was not using the grade book to automatically score exams or to keep track of the labs. During the training, we discussed the benefits of using this tool (which benefits the faculty member and the students) and revised the grade book to reflect these changes. The faculty member and students could see the changes immediately, as we applied this to a live course, and the changes were met with positive feedback from both parties.

The above example of the grade book shows that the faculty members did not list any due dates for the assignments, and this was another feature that was discussed so the students could see the assignments mapped out on the calendar tool. This tool can be useful for faculty members and students, as seen in Figure 5. This tool was not implemented during the training session but pointed out to most of the participants

because it is a common tool that most were interested in learning and using. As shown in Figure 5, faculty members can pick which courses and items they want to display on their calendar view. If the due dates are applied in the grade book, they will show up on the bigger version of the calendar.


*Figure 5*: Calendar Selection

Another training session incorporated how to organize the course to meet the needs of the course topics and make it easy for the students to follow. The discussions incorporated the learning modules about the topics into groups (see Figure 6). We discussed the various topics that would be covered in the class. In doing so, we developed a design that split the semester into four milestones. This was a course taken by most students just entering the college environment, so it was determined that setting milestones would be a good way to convince the students to manage their time. As shown in Figure 6, there are four milestones folders and an additional folder to discuss the discussion board requirements for the course.


*Figure 6*: Course Module Example

Another example is discussion board use. Many faculty members did not see the need to use the discussion boards for a face-to-face course, so we discussed the pros and cons of doing so. One individual was interested in using them, but did not know how they could be utilized, so we set up a discussion based on each chapter the students had to read. The concept behind the design was to keep the students involved in the topics and discussions, even after classroom time was over. Upon implementing the discussion board design, the students and faculty member were pleased with the results, and it allowed the students to discuss what they learned in class and to continue that discussion outside class. It was also noted that some students did not have any previous communications or friendships with others prior to the class but found a classroom "friend" through the discussions, which helped further open and expand the live discussions in class. Figure 7 shows a screenshot of the discussion board design.

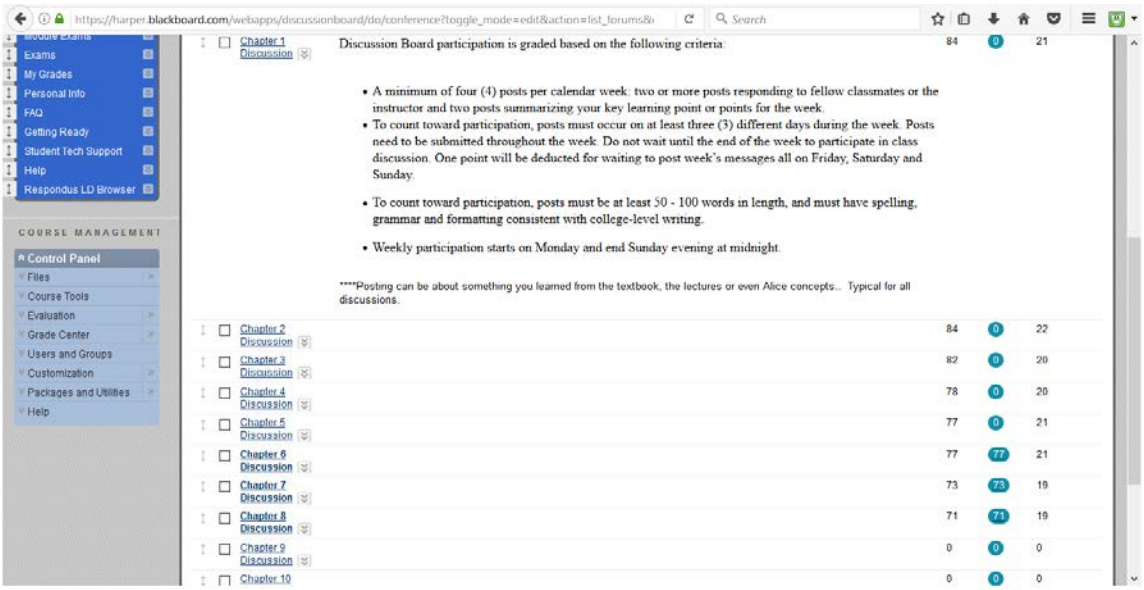


*Figure 7*: Discussion Board Design

Upon completion of the individualized training, the participants were asked to participate in two more interviews with the researcher. During the interview, participants were asked about their lived experiences in relation to the individualized training they recently attended. Each interview lasted for no more than 45 minutes. Upon conclusion of the data collection and interview process, the participants were sent a 'Thank You' email for participating in the study (Appendix I).

**Data Analysis**

Data analysis refers to the "the process of bringing order, structure, and interpretation to the mass of collected data" (Marshall & Rossman, 1999, p. 150). Compared to other research approaches, the data analysis conducted for qualitative research studies is affected by the timing of the analysis and the integration of other research activities. Analysis and data collection activities for qualitative research studies can sometimes overlap. According to LeCompte and Preissle (1993), feedback from the respondents gives the researcher a deeper understanding of the issue or phenomenon of

interest while still learning the meanings and interpretations participants give about their experience of the phenomenon being discussed.

Two phases were used to analyze the data gathered from the interview: data preparation and data analysis for phenomenology. For data preparation, each individual interview was recorded on a digital audio recorder. The researcher fully transcribed each audio recording word for word. These transcripts were subject to member checking, as previously discussed (Carlson, 2010). Member checking took place by sharing a copy of the transcribed data with participants. The purpose was to allow participants an opportunity to identify potential inconsistencies within the written transcripts and the information they provided in the interview. When participants had the opportunity to view transcriptions and correct statements if necessary, it added validity and reliability to the data obtained and, therefore, added to the research's accuracy (Carlson, 2010). Participants may also add information at this point of the data preparation phase because reading the transcript can prompt additional thoughts which enhances the data's richness.

Regardless of the method being used to collect data, it is advisable to use a database to keep track of findings (Silverman, 2011). When dealing with a collection of data, human oversight often occurs, but proper management of a database makes the data trustworthy and credible and makes a researcher's work much easier. Organized data and transcripts that have been reviewed by the participants were loaded into the NVivo (2016, version 10) software to organize data into categories that could be coded and subjected to thematic analysis.

For the second phase of the analysis, the researcher used Moustakas' (1994) seven-step process for phenomenology as a guide. The first step requires that every

expression found to be related to the stated experience is listed and grouped by listing and preliminary grouping. In step two, the researcher tested individual expressions on the following qualifying questions: (a) Does it provide an expression that is necessary and sufficient for understanding the meaning of what the participant suggested, and (b) is it possible to label the experience? Once all information is processed, the finalized and completed expressions are referred to as invariant constituents. If the expression fails to pass the two criteria, it was eliminated from further analysis (Moustakas, 1994). The invariant constituents were clustered with the objective of relaying the experience's core theme. The next step was to finalize the thematic categories, invariant constituents, and themes based on a review of the interview transcripts to ensure that each constituent can be found in the data. Next, a textural description was performed, wherein the transcribed interviews will be reviewed to develop the verbatim examples that will validate the invariant constituents and themes. Matching the individual structural descriptions with the themes created from the analysis was performed (Moustakas, 1994). Finally, the textural–structural description were created to illustrate the experience's essence and to involve the invariant constituents and themes. From these, a composite description and overall synthesis were created (Moustakas, 1994). See Appendix sections O and P for composite and synthesis descriptions.

**Format for Presenting Results**

Various forms of data were collected during the study and stored on a secure USB drive. The data consisted of the following:

1. The participant selection process
2. Audio recordings of the interviews

3. Audio recording transcripts
4. Data analysis using NVivo (2016, version 10)
5. Samples of themes and codes, as the data are horizontalized

All data will be stored for three years after the conclusion of this study and then properly disposed. During the three years of storage, the data will be available upon request. Upon conclusion of the research, the data will be presented in a narrative format within the report and in the Appendices.

The final report will be shared with the dissertation committee, and the results will be added to the TPACK blog to add to the existing body of research. The report will also be shared with Harper College and McLennan Community College and will be presented to the training departments upon request. A thank you email was also sent to all participants upon completion of the data collection process (Appendix H).

Technology in one form or another has been around for quite some time, but convincing faculty members to utilize it is still a problem. The benefit of the data derived from this study will help training departments in higher education determine whether they need to change their existing training strategies.

**Validity and Reliability**

According to Moustakas (1994), phenomenological studies must display the rigor and appropriateness of the procedures and must provide insights regarding a particular phenomenon to be considered valid. Validity plays a critical role in qualitative studies because it determines the accuracy of the findings obtained from the data analysis (Moustakas, 1994). To improve the validity of this study, the researcher engaged in epoché and disclosed her subjectivity statement. In addition to the epoché, member

checks will be utilized, which allow data validation and ensure the participants' voices are heard (Creswell, 2007). This can be applied to both quantitative validation and qualitative validation (Neuman, 2006; Yin, 2003). Moreover, no information will be purposefully deleted or modified. This will be ensured through member checking (Lincoln & Guba, 1985), wherein the researcher will ask participants to review the transcripts to gain feedback regarding the data's accuracy.

**Ethical Considerations**

Before collecting the data, approval from the IRB was approved by Nova Southeastern University, Harper College, and McLennan Community College. Once the approval was received, the research proceeded. All participants were given an informed consent form to return if they wanted to participate in the study. The informed consent form included the discussion of what the researcher intended to do and what was expected of the participants. The informed consent form also explained that participants could withdraw from the study without consequence and that there was no risk for participating in the study. The participants were also asked for a written permission to audiotape their interview sessions before the interviews were carried out. Their demographic information was gathered before the semi-structured interviews.

According to Shaw (2008), protecting human subjects by adhering to research ethics and regulations is important. Therefore, the researcher followed this protocol. It was important to obtain the IRB's approval because it protected the rights and welfare of the research participants. The IRB sees to it that the faculty members who participated in the study were not subjected to any harm, that the research questions met the criteria for

protection, and that the research proceeded without violating the human research participants' ethical principles and rights.

The researcher ensured all faculty participants' confidentiality, safety, and human rights. The researcher ensured that all recruited participants were included in the study because they wanted to voluntarily be part of it. There were no costs or foreseeable risks to the participants associated with this study. In addition, the researcher made sure participants understand that no payment or any form of incentive was offered to participants who willingly took part in the study. The participants understood they could withdraw at any time without rebuttal or consequences. They could also refuse to answer questions they did not want to answer and remain in the study. All participants had the right to raise questions at any time, and they could even request the tape recorder be turned off while they were being interviewed. They were given the chance to review the transcripts and to edit them.

To make sure the faculty members' identities were kept confidential and anonymous, the researcher made use of pseudonyms during the interview transcription and reporting process. All the audiotapes, the demographic information, and the interview transcripts are secured in a place to which only the researcher has access. The files will be destroyed three years after the research is concluded.

**Summary**

This chapter provides a detailed description of the phenomenological research design and its appropriateness to the study. The sampling method was also detailed in this chapter, and this chapter describes the population that was focused on: the faculty members who underwent individualized training to learn how to use technology in their

classrooms. The chapter concluded with the ethical considerations taken by the researcher.

# Chapter 4

# Results

## Overview

The phenomenon investigated in this study was how individualized training could help faculty members integrate Blackboard utilization in their classroom. Phenomenology was utilized to examine the faculty members' lived experiences using interviews and personalized training sessions. There were no formal outlines for the training sessions, as the topics were selected by the participants, so each training session was unique in the topics covered in regard to Blackboard utilization and exploration of new tools for each participant. The researcher used the TPACK framework's components to compose the interview guides with the training program design. TPACK's use was to aid in identifying common elements for everyone's pedagogy to create an effective training program for increased Blackboard utilization in the classroom.

## Data Analysis

Data analysis included coding the transcripts of the seven participants who completed the study, resulting in 14 interviews for data collection purposes. After transcribing the interviews, the transcripts were sent to the participants to ensure accuracy

and to allow the participants to add any additional content they felt needed to be reflected, as it may have been missed during the interview process. Upon sign off on the transcripts from the participants, the interviews were then merged into textual and structural descriptions of their experiences and written using imaginative variations (Moustakas, 1994). The process of writing the descriptions resulted in 17 narratives: textual and structural descriptions for each of the seven participants, a composite textual description, a composite structural description, and a textual–structural synthesis of their experiences about going through an individualized training program to increase Blackboard utilization within the classroom. For additional information on these different components, see the Data Analysis section in Chapter 3.

**Horizonalization of the Data**

The transcripts of the 14 interviews were entered into NVivo (2016, version 10)—software for analyzing qualitative data—as primary documents. At that time, the transcripts were renamed to utilize the pseudonyms for each participant to protect each person's privacy, and the pseudonyms were used respectively in this report. The coding process was accomplished by examining the participants' statements in each of the transcripts, which resulted in an average of 17 different nodes per participant with an accompanying average of 23 quotations per node. Nodes were identified as a "mark word or short phrase that symbolically assigns a summative, salient, essence – capturing" attribute for the data (Saldana, 2009, p. 3). The coding process utilized words drawn from the participants' transcripts to capture the essence of their experiences and to keep it as true as possible to their lived experiences. Upon completing the coding process, use of

phenomenological reduction was applied where treating each statement with equal worth helped eliminate overlapping codes, which then helped create themes to narrow down the participants' experiences (Creswell, 2007).

These nodes were examined and sorted into various themes. The NVivo (2016, version 10) software allowed the capture of the individual nodes and then grouped them into various classifications, which were then viewed as themes. The coding resulted in 7 identifiable themes. The main themes identified were technological knowledge, pedagogical approach, content area, classroom management, challenges and successes in Blackboard, group training, and individual training. The researcher then pulled text from the transcribed interviews to get a sense of the meaning of the participants' experiences while writing the textual and structural descriptions.

**Example of Data Horizonalization**

The original transcripts were loaded in NVivo software and labeled appropriately per the pseudonyms given to each participant.

The questions for each interview were initially categorized based upon their TPACK category which assisted in grouping the questions together after all the interviews were completed as they pertained to the TPACK designations. These grouping were to assist in the determination of the nodes and themes. The questions from the interview guides can be seen in the appendix section (see Appendix F, G, & H).

Between the first two interview guide(s) there were 39 questions and the third guide was used for the participant to add further clarification to their initial responses or to add more content to their initial interviews. Those questions were not considered in the

compiling process but any information obtained from them was merged in with the data from the first two interviews.

From the 39 questions, 17 different nodes were established with an average of 23 quotes per node. An example of this would be the use of the term Blackboard, calendar, grade book, teach by example, etc...

An example of how the questions helped to create the nodes from the questions are as follows:

Step 1: Copy/Pasted the responses to the questions into the system to see the complete response.

"Tell me about your experiences in using technology in the classroom."

Response from Participant 1:

> *"We have the smart classroom to where we use the ELMO or the overhead and then we've got – put up our PowerPoints and use those so it is kind of like the basics in the classroom so like I said I use the jump drive and we have my PowerPoint lectures or like I said if I want to go show pictures of books and stuff like that I will just go with the ELMO and have it put up over the head and that's just basically about it."*

Response from Participant 2:

> *"So when I first arrived at this community college there is very little technology actually it was still where you write on the transparency so kind of being on the front end but quickly moved to PowerPoint and projectors accessible in some classrooms and then ultimately every room now on this campus has that and then Blackboard I don't honesty remember when Blackboard was introduced here, but I remember starting to use it probably 8, 9 years ago and that was basically to post notes to post reviews post announcements very basic materials like that and that's kind of where I still stand, I might post a video here and there but basically it's kind of a place to post notes in a face-to-face class, not in an online situation so that's it in a nutshell."*

Step 2: Reviewed the responses and broke them down to highlight the information to determine the various nodes and quotes that support those nodes. You can see from the quoted material that the terms PowerPoint, Word, Excel and Blackboard stand out from these responses.

"How have you used technology in the classroom? Your curriculum?"

Participant 1: *"I am very familiar with PowerPoint. I really use the McGraw PowerPoint and I edit it. I also use Word or Excel and I'll pull in different exercises, to do group exercises with"*
*"As far as Blackboard, I have used it to do announcements, so the things that I learned during my bootcamp"*

Participant 2: *"Typically I still just click out of the PowerPoint and go to YouTube to show a clip"*
*"I actually from walk in a classroom open up Blackboard click on the PowerPoint"*

Step 3: From the quoted material, the notable terms were focused on to determine the key items from each participants' responses.

"What types? (Computer, PowerPoint, etc.)"

P1: PowerPoint, word, overhead projector, Blackboard
P2: PowerPoint, word, YouTube, overhead projector

"What types of technology?"

P1: PowerPoint, word, overhead projector
P2: PowerPoint, word, YouTube, overhead projector

Step 4: The first three steps and questions from the first and second interview, asked at different times during the experience, created some very similar answers from the participants. The three questions used as an example of the process helped to begin the creation of the nodes: Classroom Technology, Office Products, Basic classroom technology which resulted in the identifiable theme of Technology Knowledge. The end result of 17 nodes with 23 quotes per node which helped with Step 5.

Step 5: After the nodes were determined, the questions were evaluated to determine which nodes contained overlapping coding items. This process of reduction helped to narrow the quoted material into identifiable themes. This reduction process resulted in 7 identifiable themes, as shown in the table below (Table 1). Once the themes were established, the transcribed text were evaluated to determine the participants' experiences which assisted in writing the textual and structural descriptions.

The question were grouped as follows:

| First Interview Guide Questions | Second Interview Guide Questions | Theme |
|---|---|---|
| *Tell me about your experiences in using technology in the classroom.* | *Tell me what tools/features you use in the classroom*<br><br>*How are you using these tools?* | Technology Knowledge |

| | | |
|---|---|---|
| *How did you learn to use a computer?*<br><br>*How have you used technology in the classroom? Your curriculum?*<br><br>*What types? (Computer, PowerPoint, etc.)*<br><br>*What types of technology?* | *Why are you using these tools?* | |
| *If you have been utilizing Blackboard, do you feel that it has enhanced the content in your curriculum?*<br><br>*Has it enhanced your teaching strategies?*<br><br>*What approach do you take to teaching your content?*<br><br>*Do you feel it can help in the learning process?*<br><br>*Explain your pedagogy.*<br><br>*Do you feel the learning process changes with the utilization of Blackboard?* | *Has your pedagogy changed due to using Blackboard?*<br><br>*How does the integration of Blackboard improve the teaching and learning process?* | Pedagogical approach |
| *What content area do you teach?*<br><br>*How did you become interested in your content area?*<br><br>*How long have you been working in your content area? Teaching your content area?* | *How has your subject area knowledge impacted your decision to integrate certain tools of Blackboard?* | Content area |
| *How do you currently see technology being used for your content area?* | *How did you determine which tools to utilize?* | Classroom management |

| | | |
|---|---|---|
| *Explain a typical lesson for your content area.*<br><br>*How do you do classroom management? (E.g. grade book, syllabus, hand-outs).*<br><br>*Does your classroom management change with the integration of Blackboard? How does it change?*<br><br>*What types of learning activities do you do and clarify what ones incorporate technology?* | | |
| *What challenges and successes did you have in using technology in general? In the classroom?*<br><br>*What have been some of the challenges in using Blackboard in the classroom?*<br><br>*Were there any technical challenges that impacted your utilization/integration of Blackboard into your curriculum?*<br><br>*What support features have assisted in using Blackboard?* | *What tools did you find to be successful and why? Unsuccessful and why?* | Challenges and success in Blackboard |
| *How did you learn how to use Blackboard?*<br><br>*Only through the college training program or other schools?*<br><br>*How long did the training take place?* | | Group training |

| | | |
|---|---|---|
| *From the training that you have received, were you able to integrate the content outcomes, pedagogy techniques and Blackboard usage?* | | |
| | *How has the individualized training impacted your perceived ability and willingness to integrate Blackboard into your curriculum?*<br>*How has the individualized training impacted your decision to integrate Blackboard into your curriculum?*<br>*How did the individualized training aid in the increase of technology integration?*<br>*Do you feel the training helped to prepare better for using Blackboard? Why?* | Individual training |

**Table 1: Grouping of Questions with Identifiable Themes**

## Textual and Structural Descriptions

The text used for the coding process came from the first and second interviews for each participant and were then filtered and blended into one document. Imaginative variation was utilized to create the textual and structural descriptions for each participant based upon the text or quotations used during the coding process. Most of the coded text used in the textual descriptions helped explain "what" happened with each participant after going through the initial group training about Blackboard utilization and then focused on the experience after the individual training. The structural descriptions utilize

the PK, CK, and TK coding, as it seemed to better address "how" each participant utilized their existing and new knowledge in regard to Blackboard utilization. In this chapter, two textual and structural descriptions are included to provide an example of the experiences gathered from the participants. The remaining textural and structural descriptions can be found in Appendix sections J through N.

### *Textual Description of Pam's Experiences*

I learned how to use a computer many years ago, and it was an Apple. I took my time and learned a little bit here and there until I got my first job, where the job pushed me to learn how to use a computer even further. Through my job, I had to not only use word processing but I had to train people how to use word processing. That experience pushed me to stay ahead of the people I was training, which truly forced me to learn how to use a computer inside and out.

My work experience is in health care, and I have been in the health care field for more than 7 years, which allowed me to transition to teaching; I have been teaching for the last couple of years. I used to be a registered nurse, but over time, I switched over to doing medical coding and word processing. From my experience and knowledge, I incorporated the training I had to do in the workplace and my background in nursing into my teaching style. I would say that I see teaching as sort of a partnership with myself and the students.

My experience in using Blackboard in the classroom started with a different LMS while teaching at a different college. Then, Harper College hired me, and I attended a Blackboard Bootcamp for the first week of orientation, which basically taught me how to post announcements and post my syllabus. Though the training was good at covering the basic items in Blackboard, it did not teach me anything further than those basics. The training session at orientation was about 3–4 hours long and only one session. So, if there was something that I wanted to learn or add to my course shell, I would typically either Google how to do it or learn how to do it by trial and error.

The tools I use in the classroom typically consist of PowerPoint with some embedded YouTube videos when necessary. I have found that the PowerPoints do the bests in terms of explaining terminology to the students, and the embedded videos assist when they need to see a specific procedure. Other than using PowerPoint and YouTube, I typically do not use any other technology in the classroom, though I do utilize Blackboard, but just for grade entry and handouts.

A typical lesson in my class starts with the assumption that the students have looked over the material prior to the class. I also assume that they work through some of the exercises, so that in the classroom, we can take the time to typically work through some of the exercises the students are having problems with. I will usually highlight some major points and check in to make sure the students have acquired that level of understanding from those assignments before we go deeper into the material. I do a little lecture at the

beginning of the class, but typically, we want to spend very little time doing that, as I want the students to work on hands-on and problem-solving exercises.

To complement the lessons, I use PowerPoint and YouTube videos, as I noted before. Typically, the PowerPoint will complement the lecture, and the YouTube videos will address any of the hands-on and problem-solving exercises that the students are working on. Other than those two technological pieces within the classroom, I utilize Blackboard for the students to submit their work, for me to post grades, and for me to provide handouts.

Some of the barriers I have encountered with technology in the classroom are probably more aligned with not knowing how to use the technology to its fullest. I have a sense that there is so much more that I do not even know about that can make my life easier, but it is just hard to find the time to remain current with it or to learn the new tools. I would not necessarily say that I have any technological disadvantages because I am well-versed and willing to try new tools, but again, it is just finding the time to learn and adapt the new tools. I think the tools I use in Blackboard go over well. As I am not afraid to try new things, I test out some of the new tools I do not typically use, such as discussions and wikis, but have found they do not provide many benefits for my courses.

After attending the individualized training, I gained a sense of fearlessness in utilizing Blackboard in my curriculum. It opened my eyes to a lot of different features in regard to not just the tools within Blackboard but how to use them and when to use them. The individualized training helped me look at what I was utilizing and what things could be added to the curriculum. It was extremely helpful to talk through that and to get a different perspective on which tools work for different course designs.

Though I was currently using the basic tools within Blackboard, the individualized training helped me have more confidence in what I am doing and feel confident in trying new things within Blackboard. It has helped me pull different views together to try to see it from a different perspective; plus, I know that the tools out there and that I am going to be exploring them, as well as how positive across the board they are for me and my students. I just like the fact that we could not only focus solely on the tools but on the overall experience.

Some of the tools and features that I considered using were small groups and enhancements to the discussion boards. I like the fact that I can give a small group its own discussion board, which I think is beneficial for the students because they will have their own place within the LMS to go to discuss their assignments. This is a good feature because sometimes the students lose their classmates' or teammates' emails, phone numbers, and so on, so this gives them a central place to log in and find the information they are looking for. Another tool or feature that I am considering is the survey tool; I can use it to get some feedback on how the course is set up and how the students feel about the design. I think it would help me to get that feedback from them so I can look at the overall course design and find out what is working and what is not. One of the other features that I implemented right away was the calendar. I like the fact that it is right on the main screen when the student(s) log in so they know exactly when their assignments are due, and I am hoping it will help keep the students on track better throughout the semester. As of right now, everything is still in the testing and trial stages, so I cannot tell what is not working in regard to the new tools I have learned.

Overall, I feel the individualized training helped me overcome some of the barriers that were more due to the lack of knowledge than anything else. It made me realize that it is okay to mess something up, it is okay to explore, it is okay to ask questions, and all that together is going to help me build a richer environment for the students. I also liked how the training incorporated not just the tools but the discussions that we had over pedagogy, over teaching techniques, over the overall course design, and how I approach the students. I found that the training was very effective because it was very personalized to not only myself but to the field in which I teach. I feel the training has helped better prepare me for using Blackboard, and I even feel that it has helped me as an instructor.

***Structural Description of Pam's Experiences***

Pam's technological knowledge was achieved primarily through teaching herself through trial and error. She started learning about technology through her career and with working on an Apple computer. That experience led to her learning word processing and then expanding into PowerPoint and utilizing the Internet for helpful resources, such as YouTube. These tools were utilized when she left her job and went into teaching.

Pam was interested in utilizing an LMS for her classroom from the onset of teaching. She initially started with the LMS called Desire to Learn and then, upon being hired at Harper College, she learned the LMS known as Blackboard. Having some experience with a prior LMS helped her learn the basics of Blackboard quickly, which was further emphasized by going through the Blackboard Bootcamp training provided by Harper College. Upon completing the training provided by the college, she utilized the basic tools within Blackboard for her courses, such as in posting grades, offering syllabi, providing handouts, and posting basic online quizzes.

Pam uses these tools for all her courses, as she feels they are the best way to present the information to her students. She will typically do a lecture at the beginning of the course. From there, she will go into some hands-on and problem-solving exercises. During the lecture time, she will utilize PowerPoint with embedded YouTube videos to help further express the knowledge and concepts for that class period.

Pam expressed that she currently does not have any barriers in regard to technology but she also admits that she does not know how to use technology to its fullest. She realizes that upon utilizing new tools and features in the LMS that she may encounter some problems. She has also expressed that she is not afraid to try new things, so she may consider implementing any new tools or teaching techniques or strategies discussed into her course.

Though Pam had some technology in her background, she expressed that the individualized training helped her not only realize the power of Blackboard and all the tools available but opened her eyes to how those could be used in her courses. She noted the individualized training helped her be more confident in what she is doing and even in trying new things. It also helped her pull together different aspects of the teaching process between the classroom and LMS to provide a much richer experience for her students. Some of the tools and features she is considering using are the small groups and enhancements to the discussion boards. She likes that she can create a section within Blackboard for each group so all the students have their own place to go to discuss and interact, which is beneficial in case the students lose the group members' emails, phone

numbers, and so on. Another tool Pam is very excited about is the survey tool. She likes that she can create a survey and make it anonymous so she can gain feedback from the students in the course regarding how the course is set up and managed, yet the students will remain anonymous. This method should provide her richer feedback about things that she may need to change.

Overall, Pam felt the individualized training helped her overcome any barriers that she had due to lack of knowledge about Blackboard. She learned quite a few new tools and techniques to implement into not only the LMS but her classroom, which she was excited to try. She also realized that it is okay to mess something up; it is okay to explore and to ask questions. Pam also expressed that she liked how the training was customized to her pedagogy, to her teaching content area, and to what her goals were in regard to course outcomes. She felt that it made a difference in relating the LMS to her teaching content area. She was also excited in not only learning this new knowledge but in sharing this knowledge with her peers.

### *Textual Description of Sally's Experiences*

My experiences in using a computer have all been self-taught. I learned computer basics from the workplace, and at one point in time, I took a class about how to use a computer, which mainly the focused on word processing. Since that one class, I have not taken any other courses in technology. I just continue to stick with what I know, and if I do not know something, I will ask somebody or avoid using it.

When I was working in the business world, I had a friend who worked at Harper College, and she suggested I try teaching. So, I started working here part time as a data entry instructor while working with the LMS and doing some of the beginning online courses offered by the college. Basically, a combination of working in the business world and teaching part time led me down the path of teaching full time and teaching basic office courses. Overall, I have been in the business world and teaching part time for approximately 20 years now. Not only do I teach at Harper College, I teach for a trade school, but we do not utilize the LMS there.

I have been teaching college for quite some time now, and when we were first introduced to Blackboard by the school, we had a training session in Blackboard that was only an hour long. During that hour, the instructor quickly showed us how to use Blackboard and how to use the basic features, such as posting announcements and using the grade book. It truly felt that the only thing I got out of that class was the fact that I had a shell and kind of knew what I was doing to get things started. I think in the first year, I took two more Blackboard courses that were in groups, not individualized, and they helped me get a little bit more comfortable using the LMS. Otherwise, I basically learned many of the tools on my own, and if, for some reason, there was something that I did not know how to do or if I messed something up, I would contact technical support and have them assist me. Many times, I would walk over to the technical support office and have them show me how to utilize a tool because sometimes having them explain it over the phone was not sufficient. As time went on and they started offering additional Blackboard courses, I decided to take another course for a refresher on the new version of Blackboard. I remember walking away from the class feeling as if I did not know anything new.

Essentially, the only training that I have had in Blackboard is through Harper College and through what I have figured out on my own.

I use Blackboard in the classroom mainly for basic tools, such as entering grades in the grade book, posting a syllabus, posting handouts, and that is it. I guess I am still a little old school in that even though I have the handouts available on Blackboard, I still prefer to physically hand them out to my students. So, in class, I utilize more of the mechanical overhead, the standard overhead projector, and PowerPoints. PowerPoint is used on occasion for terminology, but I find that using the overhead projector works the best because I like to illustrate things.

Some of the challenges I have found in Blackboard are in not knowing how to use all the tools. I am not comfortable exploring and trying new things, so if I run into something that is not working the way I wanted or if I am unsure how to set something up, I will alter my lesson plan and do something different. Again, I am kind of a stick-in-the-mud and used to teaching without the LMS, so it is difficult for me to think of how to incorporate the different tools. Some of the other challenges I have found in using Blackboard include how I must spend a lot of time during the first class explaining things to the students and where they can be found in Blackboard. I find that very frustrating, and I feel that, at times, the students get frustrated as well. I think it is probably just a case of needing to redesign the way the LMS is set up, but it is hard to find the time to make the changes or to truly do or implement those changes. I do not feel that it enhances the teaching strategies or the class content, as it is more of just a document management system.

I approach teaching content through illustrations. Currently, I use the overhead projector quite a bit, and I show the students how to type up a résumé or how to format a document because I feel the best way for the students to learn is by having them see someone else do it. In addition to the illustrations and problem-solving in class, I try to teach the students any kind of shortcuts or anything that pertains to their jobs. I try to find things that are the most interesting to them and then try to find the content that aligns with their interests.

Currently, I utilize Blackboard for the grade book, the syllabus, and handouts. Typically, I physically hand out the handouts first and then I will upload them to Blackboard for later reference, in case students lose their copies. I feel it is better to introduce the document first instead of them just clicking on it and then coming in with a bunch of questions without giving me a chance to explain the information. As far as the classroom management changes that using Blackboard brings, I do not believe it has changed that much. I guess in some ways, I am kind of a stick-in-the-mud in that I like teaching this way, and I think that is what works best for students and for me. So, I just stick with what I know.

Some of the learning activities I do in addition to the overhead illustrations include utilizing YouTube videos for additional illustrative points for the class. Many times, around the time the class is about to begin, I will use Blackboard announcements to put a link to the YouTube video so everybody has access to it. This also allows the students to go back to the link after the class is over.

Since completing the individualized training, I have not had a class, so I have not changed that much in regard to the tools used in the classroom. I have changed how I set up Blackboard: I have modified my course shell to be better organized, which includes posting the handouts in the LMS before class. I also modified the grade book to include all

the assignments and to ensure it aligns with the course curriculum. One feature that I have implemented is the calendar so the students have the due dates right in front of them every time they log in to the classroom. I like the tool because it also helps remind me what is due.

I feel that everything we discussed included successful Blackboard features. I especially liked the discussion board, and I have been so antidiscussion board in the past. I do not know how much I will use this tool, but I like the idea of using it for introductions and video links. I like that the students can also post video links, creating an area for the students to share their resources. I do not feel that anything has hindered my use of the technology, and the support and learning process has helped me see the design from a different viewpoint.

Blackboard has improved the learning process for students who like the online shell. It allows them to interact with others in the class without actual interaction (face to face). So many students today are used to communicating online that this gives them a venue to do so. The features and tools I have learned from the individual training are going to help me not only use tools, which I currently use better, but explore new ones. I will be using the knowledge learned more often in future courses.

The individualized training has helped me with things that I was not doing, and it seems like I kept falling back on the excuse of not having the time to figure things out. The training gave me access to two or three things that I had not been doing, and I am excited to be doing them now and am looking forward to learning more. The training was better than the group training provided by the school, as we could focus on the things important to me. The group covered either too many things or just the basic tools, whereas the individual training focused on me and what I wanted to learn. Often in group settings, instructors go too fast and talk about things that I currently know or am not interested in. I will listen to ensure that I am not missing something new, but I do not get that much out of those sessions. The other issue I have with the group training is doing assigned homework, and I do not want to have to do something that does not pertain to me or to my courses. During the individual training, I could focus on and learn what I wanted and do so at my pace. That was the biggest benefit for me!

### *Structural Description of Sally's Experiences*

Sally's technology experience came from being self-taught and from learning the computer basics in the workplace. She initially learned how to use computers and technology from her job, but upon transferring to teaching, she learned more about technology through the school's training efforts.

Upon entering the teaching world, Sally started working as a part-time instructor and began utilizing an LMS in some of her early courses. After being with the college for a little bit, Sally reached out to the college training department and attended some Blackboard courses. Upon completing the school's training, Sally felt the only thing she got out of the course was the fact that she had a Blackboard shell and knew how to utilize some of its basic functions. The Blackboard training at the time Sally took the course was a one-time, one-hour session. She has been with the college approximately 20 years, and during that time, she has repeated some of the group training courses, but ultimately has taught herself how to utilize the Blackboard elements.

Despite the training provided by the college and the tools she learned on her own, Sally still utilizes just the basic features within Blackboard, such as posting announcements, posting the syllabus, posting in the grade book, and sharing links to YouTube videos. Because a lot of the time within the classroom is spent working through problems, she felt that Blackboard is nothing more than just a document management system.

Some of the barriers Sally expressed were from not knowing how to utilize the Blackboard elements to their fullest. If she runs into a problem that she does not know how to resolve, she will skip over it and modify her curriculum to not include that tool. If she has to utilize a tool within Blackboard and she does not know how to set it up, she will reach out to the Blackboard technical support within the college to get assistance in setting that tool up. Otherwise, she does not take the time—nor does she have the confidence—to explore and learn some of the additional tools Blackboard offers.

After going through the individualized training, Sally expressed that it helped her realize some of the additional tools and features that Blackboard offers. She found one of the tools interesting: the discussion boards. She has been antidiscussion board in the past. With this new approach and view on how she could utilize the discussion boards, she plans on implementing them in future courses, as she felt it would be a good way for her to share information and resources she has found and for students to share the information and resources they find online. Another tool that she found interesting was the calendar. She likes that she can load up the calendar with all the due dates for all the assignments, so every time a student logs into the LMS, that student has due dates listed in front of them. She also sees how this tool can help her manage multiple courses, as the instructor sees a master calendar. Sally felt that these additional tools and features would help deepen the learning process for the students through online discussions and assignment management.

Sally's assessment of the individualized training was that it helped her overcome some of the barriers she has run into in the past due to her lack of knowledge. She stated that she felt more confident in using not only the existing tools—ones she has been utilizing—but in the new tools covered during the individualized training and is excited to implement these in the future courses. She felt that the training added a different level of knowledge because it was personalized to her teaching approach and to her course content. She liked that part of the training involved doing a review of how she set up all her content within Blackboard and getting a second opinion regarding how the setup would come across to the students. All in all, she felt the information and the training would be beneficial for her for future courses.

## Findings

The main goal of this research study was to understand how in-service faculty members experience individualized training as a method of teaching faculty members how to use the technology and integrate that technology into their courses. The lived experiences and perceptions of in-service faculty members regarding the individualized training were specifically focused on to determine how individualized instruction would

be perceived to help or hinder technology integration into participants' courses and the reason behind those decisions. The entire process of interviewing the participants, transcribing interviews, coding the interviews, and creating the textual and structural descriptions for each participant all contributed to a description of the teachers' "*lived*" experiences. This information also helped comprise the composite textual and structural descriptions, which helped identify the "*essence*" of the experiences of being in an individualized training program and integrating the technology into higher education courses, thus meeting the goal of this research study.

The lived experiences of the phenomena were centered on the interrelated themes, which were found through the coding process and by determining the essence of the experiences. This essence led to the answers of the original research questions posed at the beginning of the study. In conjunction with the research's main goal, the TPACK framework was utilized to assist in the understanding of how to create an individualized training program to increase Blackboard integration in the classroom. In reevaluating the original research questions in conjunction with the TPACK framework, the following summaries show a textual–structural synthesis from the findings derived in this research.

The research questions posed at the beginning of the study are listed below with the findings from the in-service faculty members' description of their experiences.

**RQ1**. How do in-service faculty members describe their experiences with individualized instruction? What themes emerge from these experiences? What is the overall essence of the experience?

Faculty who completed the study expressed that their experience with the individualized instruction was empowering, as they felt they had someone to truly help them learn how to utilize Blackboard for their purposes instead of just learning the basic tools and figuring out the rest on their own. Out the seven participants, more than half expressed that this experience increased their confidence in using Blackboard for not only the tools they were previously using but for the new ones they learned about during the training sessions. As noted in the barriers section of this research, computer self-efficacy is still present among modern day in-service faculty members, and this research verified its presence. As noted by Sally, “if I don’t know how to do something, I just skip it.” She felt that she did not have sufficient knowledge to figure out how to make the tool work how she would like it to. This feeling was expressed by some of the other participants: They were afraid to mess something up, so they did not venture beyond what they knew.

After completing the training, the participants expressed great gratitude in how the training helped them increase their confidence (computer self-efficacy) and how they liked the way the training was aligned with their content area and what they wanted to do. This shows that faculty members are willing to continue learning but that the group training lacks in providing a customized approach. As noted by Ann, the college’s training pushed for them to use all sorts of different tools, but in the end, only a fraction of those tools truly applied to her course and how she wanted to present the material to her students. Ann expressed that if she had this kind of training in the beginning, she may have been more proficient and confident in her Blackboard use. Overall, the participants felt the individualized training was a much better process than the one-size-fits-all approach.

Various themes emerged from the research, such as increased technology knowledge, increased Blackboard knowledge, and an increased overall need for individualized training. A bonus for the participants was an increase in computer self-efficacy that was evident not only in the training sessions but in the increase in Blackboard use in the classroom. As the participants learned new tools, most immediately started implementing those tools into their course shells. As noted by some of the participants, they felt more comfortable implementing these tools and exploring additional tools. Without the individualized training, the participants would have stuck with the course shell designs that they currently had in place instead of making changes.

The increase in computer self-efficacy also led to an increase in Blackboard knowledge. Increasing the participants' confidence helped increase their TK, which increased their use of the new tools. Not only did the participants implement the tools that were explored during the training but a few of the participants took the knowledge they had gained and explored some additional tools, which they implemented in their course shells. Most of the participants were comfortable using the syllabus and grade book and uploading documents, but not much else. After the training, the basics were still utilized, but many used the calendar tool, discussion threads, grade books for their lab sections, changed assignments from a journal entry to an actual assignment submission, and more.

The prior themes led to an understanding of how effective an individualized training program can be if it implements TPACK elements to provide a customized approach for the learner. The group training process is still effective in that it helped the individuals get started with their Blackboard course shells, but it never went beyond the basics nor did it address what the faculty members needed for their course content or

pedagogy. The individualized training provided a truly customized approach in that it taught Blackboard's tools and in how it was tailored to the individual's content area and pedagogical approach. Incorporating these items gave the participants a well-rounded approach that allowed them to explore more tools within Blackboard and to discuss how those tools can help them teach their courses (PK and CK).

Overall, the experience proved positive for all participants. Most of the participants noted that after completing the training, they felt a level of confidence that they had not felt before, which will continue to increase because they also felt that they could confidently explore Blackboard on their own. These changes will not only benefit the participants as they teach their courses but will benefit the students, as they will have access to the materials they need, as well as see their grades in real time. Beyond the increase in confidence, there was an increase in the use of various Blackboard tools. Each participant picked different tools to use and implement, as those tools aligned with their pedagogical approach and content area; overall, an increase in tool utilization was present. The overall essence of the experience was positive, not only in meeting the goals of this research study but in breaking down some of the barriers that can impact LMS tool implementation and utilization.

**RQ2.** How do in-service faculty members perceive the effectiveness of individualized training in helping them integrate technology into their classrooms?

The in-service faculty members who completed the research study perceived the individualized training as an effective and positive experience. As noted in the answers addressing the first research question, the participants felt their confidence increased, which led to increased tool utilization. This was all accomplished through the

individualized training, as it was tailored to each participant. The participants were asked at the beginning of the training what they would like to learn more about and which tools were they curious about. They were also asked how they would like to see Blackboard help them and their students stay organized. This information was used to develop the custom training plan for each participant.

After the training was completed, the participants expressed their pleasure and gratitude for being involved in the study, as they felt more confident in using Blackboard, and many had started implementing new tools into their course design. A few expressed that if they had not gone through the training, they would have never changed anything in their existing Blackboard shells or their approach to the overall LMS design. Confidence levels increased, which resulted in increased technology use, and participants expressed enjoying the discussions about their courses in general. As noted, at the beginning of the study, the participants were asked what they wanted to learn about, but as the training began and discussions about course designs ensued, many realized there were new ways to do things they had not known were even possible. They felt that because all aspects were covered when working with the TPACK model they could walk away not only knowing how to use a certain tool but why they should (or should not) use that tool. Most expressed that this was where the group training was lacking in terms of relating the tools to participants' content and their pedagogical approaches. They felt the complete approach was more effective in getting them to use Blackboard and its tools because it aligned with their teaching needs versus the one-size-fits-all approach.

**RQ3.** From the in-service faculty members' perceptions, what are the barriers of individualized training in helping them integrate technology into their classrooms?

The barriers to the individualized training were mainly the time constraints regarding scheduling the training itself (for the study and future learning). In working with two different locations, there were different barriers, so I will address each school separately.

At Harper College, the barrier that stood out more than anything was trying to schedule the training sessions with each participant. Because each participant was at different parts of the campus and taught on different schedules, the scheduling process was a little difficult to conduct. The one advantage that the researcher had with the Harper faculty members was that they joined the study at different times during the research. This allowed early participants to have priority with their schedules, as they were the only ones signed up. As more participants joined the study, the scheduling became more difficult, but as the early participants completed their training, more time opened in the schedule.

For MCC's faculty members, time constraints were also a problem, as all the participants at MCC joined the study at the same time. Not only was time a factor but a couple of the faculty members did not have a good Internet connection at home, so there were additional factors due to needing to schedule a time to use the campus computers. All MCC faculty members did the training on their computers (home or work) and were scheduled during a time when they did not have courses to teach or were conducting office hours. There were some additional barriers; because the MCC faculty members were remote, Zoom (2016, version 3.5.64828.0908) videoconferencing software was utilized to conduct the training. Zoom was selected because it was the software that MCC faculty members at currently used to conduct office hours with their students. This

worked well, as it gave the faculty members the same training experience as the faculty members at Harper. Because MCC's faculty members were previously familiar with Zoom, we did not have any learning curves to address with the Zoom software.

Some of the other constraints noted by the participants at both locations were that the trainer needed to be knowledgeable in all aspects of TPACK for the study to work. As Sally noted, "You need to have a background in all aspects of teaching to provide a well-rounded training session." One of the other items noted by another participant was that it really helped him to learn the technology on his own computer, so making sure the training was conducted in the faculty members' home environment was imperative. This led to additional scheduling issues if faculty members were using different versions of Blackboard and/or operating systems.

Overall, the individualized training barriers noted by the participants were finding the time to schedule the individual sessions, finding the time needed to explore and learn the new technology/tools, making sure they had what they needed in terms of computer and Internet access, and being prepared for the training. Because the sessions consisted of learning about new technology tools and course designs, some preparation was needed by the participants, as they needed to have questions ready for when the training began. The actual sessions did not lead to any barriers compared to the scheduling and preparation process, which mainly created issues; these issues would be present in an independent setting as well.

# Chapter 5

# Conclusion, Implications, Recommendations, and Summary

## Conclusions

After completing the analysis of the in-service faculty member interview transcripts, the application of imaginative variation was applied to the data to create vivid descriptions, which resulted in several conclusions that can be drawn from the study. These conclusions include the tools being utilized by in-service faculty members within Blackboard, how the faculty members are using these tools, group training methods, and how individualized training can change Blackboard utilization. A focus on how TPACK impacted the individualized training and the importance of using this model will also be addressed.

After reviewing the data gathered, it was interesting to see which tools were currently being used by the in-service faculty members. There was a consistent use of uploading the syllabus, posting announcements, and uploading any supporting documents for the students to access. The syllabus creation was carried out in Word and then uploaded as an attachment to the course shell. Most faculty members noted that they had previously learned how to upload the document, or if they did not know, they would reach out to someone who could walk them through the process. A few participants admitted that because they do not do this on a regular basis, they must reach out for help at the beginning of each semester. This problem also carries over to uploading supporting

documents because many faculty members are using course shells made by other faculty members, which means the supporting documents and handouts are preloaded in the course shell. So, when faculty members need to upload a new document themselves, barriers arise in that the knowledge to accomplish this task is not present.

Posting announcements was the one tool that most of the faculty members did without any assistance. The surprising information found from this tool was that the faculty members use it for different reasons. Some use the tool for weekly reminders, whereas some just use the tool when something comes up, such as a class cancellation. One participant noted that after completing the training, she realized that she used the announcement tool much more frequently for her online section versus her on-ground section. Though this is common for online courses, as a faculty member needs to use this tool more to communicate with students, the instructor noted that she should use it the same way no matter how the course is being taught. It was reassuring to see that all the participants noted the importance of using the announcement tool and felt it was important to remind the students about assignments coming due or general information.

A few took using the tools a step further and used the grade book to post grades, but surprisingly, not all in-service faculty members were using this tool. The faculty members knew the benefits of using the grade book, but when inquired as to why they were not using it, they expressed that they did not know how to set up the grade book correctly or did not feel sufficiently knowledgeable to set it up on their own. Many had their course shells copied from previous faculty members, so everything was previously set up for them. This brought up an interesting view in that the faculty members knew

how to use the tools when set up for them but did not know how to create them from scratch.

When asked which tools faculty members would like to learn or use in their course shells, most of them mentioned the grade book (learning more about it) and the calendar feature. They could see the benefits of posting the grades in real time, as it helped them remain current with their grading, and it helped the students stay on top of what they needed to do. After discussing and conducting some training on the grade book, the training evolved into the most requested tool, which was surprisingly the calendar. The calendar feature is linked to the grade book due dates, and faculty members liked that when the students first log in to Blackboard, they can see a calendar mapping out all the assignments for the course. It was mentioned that this tool would be a big benefit to help the students learn time management, and even though the course is conducted in a classroom, students can log in to Blackboard for reminders of upcoming due dates.

The tools currently used were mainly used to help manage the overall classroom experience, document control, and to keep students up-to-date with their grades. The in-service faculty members see the benefits of having documents posted in Blackboard, though some still provide handouts in the classroom, as this allows students who cannot attend the course to still get the information they need. One instructor even posts outlines and lecture notes so that when students come to class, they can listen and absorb the lectures instead of spending the class period furiously writing down lecture notes. When the documents are posted does differ, as some instructors have everything uploaded at the beginning of the semester and others upload as they go through the course. Some

instructors who have everything previously uploaded use the adaptive release feature so students cannot access the document until after has been discussed in class.

The grade book is used in general to track grades for assignments, but the two science instructors did not use the grade book for their lab section, as they did not know how to set up the grade book to reflect a complete or incomplete grade status. Despite this one deficit in grade book use, the course shells were consistently designed to accept the assignment submissions via Blackboard and graded directly there. So, there was a consensus about having the students submit their work online to save paper and save faculty members from tracking everything in paper form. Two instructors tried to set up their grade books on their own and, in doing so, did not realize that they had an assignment submission classified incorrectly, which did not allow them to provide detailed feedback on the students' work. This was corrected during the training, as part of the training process was to conduct a review of how the faculty members' shells were currently set up and modify per each faculty member's training request. So overall, faculty members all used Blackboard to supplement their courses, but at a basic level, though they knew they could do much more with Blackboard if they had the tools and knowledge.

The group training methods differed between the two schools, as each school has been using Blackboard for different timeframes. Harper College has been using Blackboard for quite some time, whereas MCC has only been using it for a couple of years. Though the schools have had the LMS for different timeframes, the group training methods were very similar in that they covered the basic tools and conducted them in a group setting. Harper College conducted its training upon hiring a new faculty members;

this training consisted of the Blackboard Bootcamp. This session lasted for 3–4 hours and contained all new faculty members in the training, regardless of their content area or prior knowledge. The faculty members who attended the training noted that they felt it was good in covering the basic tools but did not really teach them how to set up a class from the start. Many walked away from the training feeling confused, as they felt it was too much information to cover within one session. Some faculty members from Harper have gone back and attended refresher courses, but Sally noted that she felt like it was a waste of time, as they did not cover anything new. She also noted that, in some instances, another person within the training session took over the session by asking too many questions. This can happen in a group setting, and it leaves the rest of the attendees feeling left out or lost, as one person may be asking questions that have nothing to do with what everyone else wants to learn.

MCC's training was similar in the tools that it covered, but it also included the concepts of instructional design, as the training group met once a week for 7–8 weeks. Each week, the group's members would explore the different tools, but some weeks, they would cover instructional design concepts. The faculty members who attended this training liked how it was a different approach in that it looked at the tools and designs at the same time, yet felt that it was too generic. Hannah felt that after learning about the instructional design concepts, she had to implement all those concepts to build a good course shell. She realized later that she did not need to implement all the instructional design concepts, as they did not all apply to her course content area. She also realized that just because a bunch of tools were shown in the training, she did not need to implement all the tools. She started seeing that she needed to look at her course design and her

content area and then determine which tools and instructional design concepts matched her course the best.

Many of the faculty members at MCC did the same as the faculty members at Harper by sharing their course shells; many instructors did not have to create anything from scratch. They only had to modify the existing shell to align with what they wanted to share with students. This is where the group training was beneficial: Instructors could use the pre-existing tools there, but if changes were needed, they would most commonly reach out to the instructional design department for help. This can be a problem with pre-existing shells and group training, as the faculty members are not truly learning how to create course shells from scratch or truly practicing the tools they have learned.

The individualized training provided the additional knowledge the in-service faculty members needed by helping them learn the tools they wanted to utilize and to make the changes to their course shells as necessary. The training incorporated the TPACK model that reflects the use of TK, PK and CK. In comparison to the group training provided by the two schools, it expanded upon the group training from MCC best because the MCC training also included instructional design concepts. The training started by asking the participants what they wanted refreshers on, what they wanted to learn more about, and what questions they had in general about Blackboard or their existing course shells. From the information gathered during the interview process, customized training plans were developed for each participant, where the training reiterated what was going to be covered, pulled up the instructor's course shell, and then began with a focus on the tools and topics. In addition to the training about the tools, discussions were conducted in regard to their content area, how the course shells were

aligned with participants' overall course design, and what changes could be made. The training provided the faculty members the knowledge they needed to make the changes for their course shells, plus the knowledge of different tools that they could incorporate to help improve their students' learning experience. This knowledge was used immediately by the participants, as they made the changes that were discussed during the training, and because most were using "live" course shells, they could also see the immediate changes to their course management and the students' learning experience.

As noted by most of the participants, the individualized training helped them increase their confidence in not only implementing the new tools but in realizing that it was okay to ask questions. The science instructors implemented grade books for their lab sections, the success instructors changed assignments from journal entries to assignment submissions, and others made overall changes to their course shell layouts and where documents were loaded. These changes were made immediately following the training, as the training would, at times, focus on only one tool—if that was all the faculty member wanted to focus on. The tool would be introduced, shown how it can work, and then the faculty members would use the tool themselves. Throughout this process, discussions were used to express how the tool could be used and its benefits. Not only does this training method align with the TPACK model but it follows the concepts of andragogy (Knowles, 1980). Even though faculty may enter the academia with a comfortable background in technology, they may not understand the value of the tools for teaching which the study helped to create that link for the participants (Ertmer et al., 2007).

TPACK utilizes the overall approach of looking at the areas needed for someone to master a subject. Taking the time and looking at the TK, PK, and CK helped create a

training program that was a complete approach in training faculty members how to utilize the tools within Blackboard. The group training focused on the tools, but the problem with that method of training is that it only focused on the tools, not why the tools are important or how the tools could apply to the different content area. By creating an environment where faculty members felt free to ask any question they wanted, it created a positive learning environment that truly focused on their needs and wants. As discussed by Knowles (1980), when teaching adults, you want to ensure that you point out the purpose for learning the material, such as what the benefit is for them. Though the faculty members see the benefits of using Blackboard for their students, the learning process needs to address the benefits for them to see the full benefits and to want to learn the tools or additional features in Blackboard. As noted by one faculty member, he could not see why it was important to use the module tool that was taught in the group training, and upon discussing his course content area and his teaching approach, it was clearly a tool he did not need to use. An instructor's knowledge of that instructor's content area does impact the decision-making for which tools to use for that content (Mishra & Koehler, 2007) because the instructor wants it to align with the concepts being taught to the students. This aligns with the TPACK model, as you must really look at each area to determine what method is best for learning the tools and how to apply those tools.

This study concludes that there is a need for individualized training programs. These programs can be utilized to develop a training program tailored to the needs of each faculty member and that supports each member's CK, PK, and TK. The existing group training programs are sufficient in getting the training started but after that training is completed, additional customized sessions need to occur to align the CK, PK, and TK

approaches to setting up a course shell in Blackboard. As noted in the findings, faculty members still have confidence barriers that they need to overcome, and most institutions feel that because Blackboard has been around for some time, it is assumed that faculty members know how to use it and all its tools without training. This creates a barrier for these faculty members, as they feel embarrassed to ask questions about how to set up their shells in Blackboard and how their shells come across to the students. A one-on-one approach helps remove some of those barriers and helps instructors feel less embarrassed about asking one person a question versus a whole group. The technological challenges faced by the participants can be overcome with a successful training program and is evident by the immediate use of new tools in the course shells.

*Strengths*

The strengths of this study are within the rich descriptions given by the participants regarding their experiences with Blackboard. The faculty members realized the benefits of using Blackboard in their courses and realized that they needed to do something to expand upon—or learn from scratch—the knowledge they currently had because they could see that it beneficial to their course management and the students' organization. As a few participants noted that they have students constantly asking what their grades are, so all the participants noted the importance of the online grade book.

Using the TPACK model to create the interview guides and to apply the framework in the training programs was instrumental in getting the faculty members to want to participate and implement the new tools immediately. The research showed that individualized training can increase technology utilization and can validate that TPACK

plays an important role in the development of training programs, as well as research in the educational technology field.

*Weaknesses*

The weaknesses of this study are in the small number of participants, even though the nature of a phenomenological research is to get in-depth knowledge from the participants. With that in mind, seven participants are within the range of participants as suggested by Creswell (2007).

*Limitations*

This research focused on the integration and increase of technology through individualized training programs that utilized the TPACK model as a guide for training the participants in Blackboard. Both schools used in this study have been using Blackboard for at least two years, with Harper College using the LMS for a longer period. For both schools, Blackboard is not required now, but both schools are considering how to create standardized use for all faculty members. The call for participants went out in December, which was close to the end of the fall 2015 semester. Due to faculty members focusing on closing out the semester, there were no responses from Harper College until the end of January (spring semester, 2016). Even with a new semester starting, the responses were very limited, so in February, a request to add in an additional site was made and granted. This allowed an increase in the participant pool, and the study gathered a starting number of 12, which was reduced to seven due to various reasons.

One of the participants volunteered to be part of the study, but it was later determined that the prior Blackboard experience she thought she had was from another

LMS, so she was eliminated. The four other participants left the study due to not feeling they had the time to truly participant in all the training sessions. One participant dropped immediately after signing up and realized the time it would take to complete. She felt that she did not have the time to invest in the study. The other three participants that left the study left because they wanted to implement what they had learned from the study prior to completing the final interview, but did could not find the time to implement the tools or even practice the new tools. Mainly, time constraints with learning the new material, scheduling the training sessions, and implementing the tools caused the participants to withdraw. Because the study lasted through the spring semester at both schools, the third interview process was conducted via email (summer semester, 2016), as most faculty members were on summer break and/or taking vacations. This allowed the study to end and allowed the participants to edit their transcripts as necessary and at their convenience.

**Implications**

Andragogy is defined as "the art and science of helping adults learn" (Knowles, 1980, p. 43) and served as one of the frameworks for this research study. Andragogy focuses on how to teach adults, which is a different teaching process when compared to teaching students. When any kind of training program is developed, the core principles of andragogy should be considered and were not only relevant but applied to this study because the participants were adult learners. Training that encompasses andragogy-based principles would mean that the participants (learners) would understand the following: the purpose of the training, how the training will be designed based upon what they currently know, how the training will help them perform a specific task, and how the training will benefit them professionally (Holton, Swanson, & Naquin, 2001).

Most of the participants had experience with the technology being taught in the training sessions, so the training itself needed to be relevant and purposeful for the participants to want to participate. Training adult learners means the training must have some benefit for them; otherwise, the adult learners do not see the purpose in being involved. Some of the ideals behind training in-service faculty members in technology would be to motivate them to integrate the technology and increase pedagogical competencies and TK, which can lead to additional benefits, such as supporting collaboration and collaboration amongst students (Culp, Honey, & Mandinach, 2005).

TPACK also served as one of the frameworks for this study and stems from an earlier work from Shulman (1986). Shulman put forth the ideal of teachers' knowledge being complex, which includes CK, PK, and TK. In building on these basic concepts, the ideals were expanded upon to look at PCK along with TCK. Building on Shulman's work, Mishra and Koehler (2006) and Niess (2005) introduced of the idea of TPACK which helps to create the connection to these different concepts and areas which help researchers understand how faculty members develop knowledge about technology (Meagher, Özgün-Koca, & Edwards, 2011).

Participants' perceptions regarding their group training from the schools were not aligned with the TPACK principles as defined by Mishra and Koehler (2006). Many of the participants possessed a good amount of TK after attending the group training session, but did not understand how the use of the tools in Blackboard supported their content area or their pedagogical view. Training must be relevant and purposeful for the knowledge to be retained and utilized. Participants need training that would build upon the group training they received by aligning it with their content area and teaching

approach (Smith & Smith, 2004; Swan & Dixon, 2006; Zhao & Bryant, 2006). Applying the TPACK framework to the training program would assist the faculty members in utilizing the technology in much greater detail and with a greater understanding as to why they are using it.

Using both andragogy and TPACK frameworks and applying them to training programs can help improve technology utilization for in-service faculty members. One concept that still needs to be addressed is the barrier of computer self-efficacy. Continued assistance with technology integration and relevant follow-ups can assist in developing confidence and willingness by faculty members to continue using such tools (Ertmer & Ottenbreit-Leftwich, 2010; Swan & Dixon, 2006). Giving faculty members not only the training but the time to apply the knowledge to their course designs will help build the confidence and competence needed to continue that technology's utilization. It will help faculty members not to be afraid to ask questions when they run into problems or when they want to learn something new.

Higher education institutions need to slow the training approach down and realize that for some faculty members, training needs to be conducted at a slower rate to allow the knowledge to sink in, as well as time to practice working with the technology before moving onto new tools or techniques. The faculty members in the study used Blackboard for the basic functions, such as syllabus, notes, and announcements. Technology staff at the college level should help prepare faculty members to utilize technology effectively in the classroom, as this will help faculty members develop confidence and competency in using the technology; this will in turn benefit faculty members and their students (Angeli & Valanides, 2008).

**Recommendations**

The recommendations determined from this study are that training programs need to be developed into a phased approach such that the existing group training programs should continue as is, but any secondary training should implement the andragogy-based and TPACK framework. Without training that builds TCK, develops PCK, and helps utilize the technology into the classroom designs (TPK), true technology integration and utilization will not occur (TPACK). Further research is needed regarding the complex interplay between these different knowledge sets to determine the best practices for training in-service faculty members.

There has been little research about developing best practices for training in-service faculty members to integrate and utilize technology in the classroom. This study has shown how developing a good, individualized training program can help in-service faculty members not only integrate technology into their course designs but build confidence to continue learning about the technology. Studies with larger participation rates would lead to greater insight regarding how to develop best practices for training and develop a broader view of the lived experiences by in-service faculty members.

Another aspect that could be considered in line with this research would be the different pieces of technology used by each content area. This would require greater participation from each content area and would help develop better training programs because instructors could then create a training program only for biology faculty members, which would benefit the in-service biology faculty members. This may provide greater results in technology integration because it would benefit a group that teaches the

same content area and should have similar pedagogical approaches to teaching that content.

**Summary**

The overall conclusion of this study is when training adults, college technology training departments need to consider the adult learner framework and incorporate the TPACK framework principles. Both frameworks will help develop not only a training program where adult learners (in-service faculty members) can embrace the knowledge aligned with their course designs but can complete these tasks with increased confidence. From the perspective of andragogy, adult learners need to connect the new knowledge to prior knowledge, understand why it is important to learn, and understand how learning will help them professionally (Knowles, 1980). From the TPACK perspective, the training would first need to begin with an understanding of the current technology levels at the pedagogical level (TPK). Then, the training would need to address what the learner would need to learn to integrate and utilize the technology being taught (TCK). Once the two previous objectives have been met, the in-service faculty members will utilize the technology with confidence and a level of competency that will transform the teaching and learning process (Koehler & Mishra, 2008).

A study conducted by Keser, Yilmaz and Yilmaz (2015) compared TPACK competency of pre-service teachers and their self-efficacy towards technology integration. The study comprised 713 freshmen and senior class preservice teachers and determined that there was a correlation of TPACK competency levels and self-efficacy perceptions towards technology integration. The study showed that with an increase in

number of technology related courses, the levels of self-efficacy increased towards the integration and utilization of technology.

Another study conducted as The George Washington University looked into the Review, Refresh and Revise program. This program depends heavily Quality Matters Higher Education Rubrics and resources from Supported Media for Administration and Teaching Lab develop to promote a pedagogical approach to designing courses. By looking into Review, Refresh and Revise program, it was determined that faculty satisfaction was high in regard to time commitment which was another a barrier noted in this study. The study showed that with a good profession development plan, these barriers can be addressed and create an environment where faculty are fully implementing the technology in the classroom which in turn showed an increase in satisfaction for the students taking the courses that utilized the technology (McDonald, Lyons, Straker, Barnett, Schlumpf, Cotton & Corcoran 2014).

Adult learners need to have a training program that is in alignment with their needs and content areas. Follow-up and sustained support from the technology training department is essential for successful Blackboard implementation and utilization in the classroom. The existing group training showed some technology use from the participants, but only at a very basic level. If schools want their faculty members to utilize Blackboard more efficiently, they need to provide the tools to meet that objective or goal; that means training sessions must include an individualized training program.

# Appendix A

## Epoché

My experience with technology has been very diverse. I was fortunate enough to have a TRS-80 and a Commodore 64 to play with as a child. This introduced me to the concepts of computers in general and allowed me to do my first programming projects in Basic. Even though I was intrigued by computers, I had a greater passion for architecture. I started learning how to draw and design in high school, but our school did not yet have computers. They finally started getting computers in my senior year, so when I went to college, the use of technology was a new experience: The university had computers not only in the library but in the architectural design labs. Even though my passion for architecture was still strong, I was interested in how students could use the computers to draw. I took some courses in computer-aided design (CAD) and found that I had a true knack for not only learning the program but for working with computers in general. I did such a good job that the university offered me two jobs: working as a CAD lab monitor and tutor and working for the University Architects Office. It was an honor to do both of these jobs. Little did I know that this was the beginning of my computer-related journey, as not only did I become the go-to person to fix computers at the university but this title transferred with me to other jobs throughout my career.

When I left the university, I began practicing architecture and learning more about computers, along with various programs, such as computer-aided drawing programs like AutoCAD. Learning about so many things at once was a wonderful experience. As I

mentioned before, the go-to title followed me because for each firm I worked for, not only was I a respected architectural designer but I was the person who fixed computer-related issues. With the technology still new in the business world, many firms at this time saw a benefit in using computers but did not have the funds to justify a full-time IT person, let alone an IT department. Because I was the go-to person, I became the IT department or technician for many firms, and seeing this need is what allowed me to start my consulting business. During my time consulting, I realized I needed to do something else to help make ends meet, and a friend mentioned a teaching opportunity that focused on architecture, and I would be teaching CAD programs. I found the mentioned teaching position at a technical school and began my teaching career. I would have thought that at this point my go-to title would vanish, but it truly never left me; even at the technical school, there was no dedicated IT person. Once again, I was wearing many hats by not only teaching architectural courses but by teaching computer courses, along with fixing the school's computers. Because computers had become such a large part of my life, I decided I needed to go back to school to get my bachelor's and master's degree in the CIS field.

During my time teaching at the technical school, I realized I had a third passion: teaching. I left the school and expanded my consulting to include teaching and training for all the new computers and software programs being released. Many companies contracted me at this time with a need for individualized training, as the people in these companies found that sending their employees to the corporate training companies was not providing any benefits to the employees or to the businesses. This was when I realized there was a need for better training and that the training needed to be tailored to

each individual's needs. By working with individuals on a one-on-one basis, I determined what they wanted to get out of the training and found that it was better to let the trainee guide the training, as this provided better implementation than having the training tasks decided for each person.

Once I completed my educational journey, I applied to teach as an adjunct for satellite university centers stationed at the military base north of Memphis, TN. I was hired by two of the location centers, and this put me back into the higher education arena. I enjoyed working with the adult learners and teaching the various CIS and management courses. Though I had worked at a technical school before, the faculty meetings at these satellite locations were much more focused on pedagogy and andragogy. For someone who has had only a technical background, these terms were completely new to me and, in some cases, frustrating, as I could not follow the meeting agenda. It would be similar to someone with no computer background attending an IT meeting and trying to follow the conversations with all the acronyms we use. I realized I had a lot more to learn about higher education and education in general, and this led me down another path of seeking more knowledge about educational terminology and teaching methods.

I used this initial opportunity to apply my newfound educational knowledge to my consulting and saw some positive results from my clients. I realized a lot of the methods I had been using were methods used in classrooms of all ages, but I never knew the official names for them. I also started using these methods in the classrooms and saw a big change in my students and how they acquired the information I was teaching.

One of the satellite schools I was an adjuncting at brought to my attention the lack of training that occurred for adjunct faculty in terms of technology use. The school had

just implemented the integration of an LMS that would be used as a supplement for the on-ground courses. The problem with this new design was that no one from the main campus came to the satellite location to offer any form of training. The training was left up to the satellite location, and this was even more difficult, as few people knew how to use the LMS. Because the campus director knew of my background in computers, he asked if I would conduct a training session for all the adjuncts. The session was completed in one sitting, and I treated the session similarly to a corporate training session, as we only had 4 hours to cover the material. Once the training was completed, many of the adjuncts were excited to incorporate the material into their courses, but when a survey was conducted six months later, fewer than 10% who attended the training session actually used the LMS system. This brought to light some problems in the training program, and it also made me aware of barriers that faculty members faced when not only learning new technology but when integrating that technology. I initially thought this problem was unique because it was a satellite location but later learned that this was a problem found at many higher educational institutions, even today.

Another location I began working for was doing something similar to the first satellite school, but they went about the process a little differently. They set up an LMS shell for the adjuncts to use for their on-ground courses and offered training in many different forms. They had someone come from the main campus and offered a whole day's worth of training in not only how to utilize the LMS but in how it could apply to the courses the adjuncts were teaching. The adjuncts who could not attend the training session could view the training online through a series of videos, which offered the same lessons and content. Once again, at the conclusion of the training, the faculty members

were excited about the new technology they could use for their classrooms. Yet again, another survey was distributed six months after the training, and though the percentage of integration was up compared to the first satellite school, it was still considered rather low, as it showed that only 20% of the adjuncts were utilizing the LMS. I was surprised at this number, as the school provided some official training, and the school also provided video training. After conducting some personal inquiries, I found that many of the faculty members who were not using the LMS stated that they did not see the need to use it, felt uncomfortable using it, or as noted in the literature review, they felt that it would take too much time to setup.

Throughout the years, I continued teaching for online schools and schools that utilized an LMS as a supplement to the on-ground courses. Over and over, I have seen schools try to train their faculty members through various means and methods, but in the end, the utilization rate is still quite low. I have been teaching for close to 15 years now, and from the beginning of my teaching career to where it is currently, I continually see the same problems. Schools try to offer training, the faculty members attend the training, but afterward, very few faculty members actually implement the technology in the classroom. Harper Community College is just another institution trying to integrate technology in the classroom with a supplemental LMS for the on-ground courses, but the faculty members are still resistant. I have attended the group training sessions and have seen firsthand that the training does a good job in addressing the technology itself but does not show the faculty members how it can benefit them. This is why I proposed this study: to find an alternative way to train faculty members and to increase technology integration. This is why I feel personalized training is the best method to use, as it needs

to combine a technology perspective, a pedagogical perspective, and relationship between the two. I have seen firsthand the benefits of using the technology in the classroom, but I also have a strong technology background. I hope that sharing this knowledge will help others realize the overall benefits of technology integration in the classroom and how it can not only benefit the students but the faculty members.

# Appendix B

## Institutional Review Board Approval

NOVA SOUTHEASTERN UNIVERSITY
Institutional Review Board

# MEMORANDUM

To: Jennifer Merritt, EdS
College of Engineering and Computing

From: Matthew Seamon, Pharm.D., JD
Chair, Institutional Review Board

Date: November 9, 2015

Re: *Individualized Instruction as a Faculty Training Strategy for Technology Integration* – NSU IRB No. 08041502Exp.

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I have reviewed the revisions to the above-referenced research protocol by an expedited procedure. On behalf of the Institutional Review Board of Nova Southeastern University, *Individualized Instruction as a Faculty Training Strategy for Technology Integration* is approved in keeping with expedited review category #6 and #7. Your study is approved on **November 9, 2015** and is approved until **November 8, 2016**. You are required to submit for continuing review by **October 8, 2016.** As principal investigator, you must adhere to the following requirements:

1) CONSENT: You must use the stamped (dated consent forms) attached when consenting subjects. The consent forms must indicate the approval and its date. The forms must be administered in such a manner that they are clearly understood by the subjects. The subjects must be given a copy of the signed consent document, and a copy must be placed with the subjects' confidential chart/file.

2) ADVERSE EVENTS/UNANTICIPATED PROBLEMS: The principal investigator is required to notify the IRB chair of any adverse reactions that may develop as a result of this study. Approval may be withdrawn if the problem is serious.

3) AMENDMENTS: Any changes in the study (e.g., procedures, consent forms, investigators, etc.) must be approved by the IRB prior to implementation.

4) CONTINUING REVIEWS: A continuing review (progress report) must be submitted by the continuing review date noted above. Please see the IRB web site for continuing review information.

5) FINAL REPORT: You are required to notify the IRB Office within 30 days of the conclusion of the research that the study has ended via the IRB Closing Report form.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Dr. Ling Wang
Mr. William Smith

3301 College Avenue • Fort Lauderdale, Florida 33314-7796
(954) 262-5369 • Fax: (954) 262-3977 • Email: *irb@nova.edu* • Web site: *www.nova.edu/irb*

NOVA SOUTHEASTERN UNIVERSITY

# MEMORANDUM

To: Jennifer Merritt, Ed.S.
College of Engineering and Computing

From: Matthew Seamon, Pharm.D., JD WHS for Dr. Seamon
Chair, Institutional Review Board

Date: March 15, 2016

Re: *Individualized Instruction as a Faculty Training Strategy for Technology Integration* – NSU IRB No. 08041502Exp.

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I have reviewed the amendments to the above-referenced research protocol by an expedited procedure. On behalf of the Institutional Review Board of Nova Southeastern University, the following amendments to *Individualized Instruction as a Faculty Training Strategy for Technology Integration* are approved:

- Adding McLennan Community College as a research site

Please note that this does not affect the continuing review date for this protocol.

Cc: Dr. Ling Wang
Mr. William Smith

Institutional Review Board
3301 College Avenue • Fort Lauderdale, Florida 33314-7796
(954) 262-5369 • Fax: (954) 262-3977 • Email: *irb@nsu.nova.edu* • Web site: *www.nova.edu/irb*

**NOVA SOUTHEASTERN UNIVERSITY**
College of Engineering and Computing



Consent Form for Participation in the Research Study Entitled
*Individualized Instruction as a Faculty Training Strategy for Technology Integration*

Funding Source: None

IRB protocol #: 08041502Exp.

Principal investigator
Jennifer Merritt, Ed.S.
2428 Woodside Drive
Carpentersville, IL 60110
(630) 945-7296

Co-investigator
Ling Wang, Ph.D.
3301 College Avenue
Fort Lauderdale, FL 33314
(954) 262-2020

For questions/concerns about your research rights, contact:
Human Research Oversight Board (Institutional Review Board or IRB)
Nova Southeastern University
(954) 262-5369/Toll Free: 866-499-0790
IRB@nsu.nova.edu

Site Information:
Harper College
1200 West Algonquin Road
Palatine, IL 60067

McLennan Community College
1400 College Dr.
Waco, TX 76708

**What is the study about?**
You are invited to participate in a research study. The goal of this study is to understand how an individualized training program, as compared to a group training program, can increase technology integration in the classroom.

**Why are you asking me?**
We are inviting you to participate because you are currently not utilizing Blackboard in your courses and teach a subject such as English, Math or Science. There will be a total of 20 participants invited to participate in individualized training. The data will be collected from 6-10 participants for the research portion of the study.

**What will I be doing if I agree to be in the study?**
The study will consist of three interview sessions and a six-week training schedule. All interviews and training will be conducted by Mrs. Jennifer Merritt. The first interview will be conducted prior to the training to establish your previous computer knowledge and to also establish what items you would like to learn more about with Blackboard. This information will be used to help create your training program. After the training program has been completed, a second interview will be conducted to record your lived experiences with the individualized training. A third and final interview will be conducted to review all transcripts, make modifications if you feel I have documented something incorrectly and to review my interpretations of your lived experiences.

**Is there any audio or video recording?**
This research project will include audio recording of the interview. This audio recording will be available to be heard by the researcher, Mrs. Jennifer Merritt, personnel from the IRB, and the dissertation chair, Dr. Wang. The recording will be transcribed by Mrs. Jennifer Merritt. Mrs. Merritt will use earphones while transcribing the interviews to guard your privacy. The recording will be kept securely in Mrs. Merritt's office in a locked cabinet. The recording will be kept for 36 months from the end of the study. The recording will be destroyed after that time by deleting the files. Because your voice will be potentially identifiable by anyone who hears the recording, your confidentiality for things you say on the recording cannot be guaranteed although the researcher will try to limit access to the recordings as described in this paragraph.

**What are the dangers to me?**
Risks to you are minimal, meaning they are not thought to be greater than other risks you experience every day. Being recorded means that confidentiality cannot be promised.

If you have questions about the research, your research rights, or if you experience an injury because of the research please contact Mrs. Merritt at (630) 945-7296. You may also contact the IRB at the numbers indicated above with questions about your research rights.

**Are there any benefits for taking part in this research study?**
You will receive some benefits from this training in that you will have be better informed as to how and when to use Blackboard in the classroom and how it can relate to your subject matter. You will also have the opportunity to set up a blank shell to utilize for future courses.

**Will I get paid for being in the study? Will it cost me anything?**
There are no costs to you or payments made for participating in this study.

**How will you keep my information private?**
The interview will not ask you for any information that could be linked to you as pseudonyms will be used. The recordings will not have any information that could be linked to you. As mentioned, the recordings will be destroyed 36 months after the study ends. All information obtained in this study is strictly confidential unless disclosure is required by law. The IRB, regulatory agencies, or Dr. Wang may review research records.



Initials:_____ Date:_____

**What if I do not want to participate or I want to leave the study?**
You have the right to leave this study at any time or refuse to participate. If you do decide to leave or you decide not to participate, you will not experience any penalty or loss of services you have a right to receive. If you choose to withdraw, any information collected about you **before** the date you leave the study will be kept in the research records for 36 months from the conclusion of the study and may be used as a part of the research.

**Other Considerations:**
If significant new information relating to the study becomes available, which may relate to your willingness to continue to participate, this information will be provided to you by the investigators.

**Voluntary Consent by Participant:**
By signing below, you indicate that

- this study has been explained to you
- you have read this document or it has been read to you
- your questions about this research study have been answered
- you have been told that you may ask the researchers any study related questions in the future or contact them in the event of a research-related injury
- you have been told that you may ask Institutional Review Board (IRB) personnel questions about your study rights
- you are entitled to a copy of this form after you have read and signed it
- you voluntarily agree to participate in the study entitled "Individualized Instruction as a Faculty Training Strategy for Technology Integration"

Participant's Signature: _____ Date: _____

Participant's Name: _____ Date: _____

Signature of Person Obtaining Consent: _____

Date: _____

Harper College

*Go Forward®*

Protocol # FY16_002

**NOTICE OF APPROVAL - EXPEDITED REVIEW**

**DATE:** November 20, 2015
**TO:** Jennifer Merritt
**From:** Katherine Coy, Institutional Research Director and Institutional Review Board Chair
**Re:** *Individualized Instruction as a Faculty Training Strategy for Technology Integration*

**Approval Date:** November 20, 2015

Thank you for applying for approval through the Harper College IRB. I have reviewed the materials you submitted for Harper's process as well as the approval received through the Nova Southeastern University Institutional Review Board. Based on this review, I have determined that your research qualifies for expedited review in accordance with the criteria published by the OHRP, 45 CFR 46.110 and FDA 21 CFR 56.110.

- Research poses no more than minimal risk to subjects, as assessed by the reviewer; AND
- Research for which each of the procedures falls within one of the DHHS Expedited review categories 1-7 and the Food and Drug Administration (FDA)
    - Specifically Category 7: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

As outlined in our Expedited Review protocol; I am able to grant Harper College IRB approval without a review by our full IRB panel for the study identified above. This study is approved from November 20, 2015 to November 20, 2016. For each additional year of study approval, you will need to submit a Study Continuance Request along with the Nova Southeastern University letter of continued approval.

AMENDMENTS: Investigators are required to report via email to OIR@HarperCollege.edu ANY changes to the research study (such as design, procedures, study information sheet/consent form, or subject population, including size). The new procedure may not be initiated until IRB approval has been given.

AUDIT OR INSPECTION REPORTS: Investigators are required to provide to the IRB a copy of any audit or inspection reports or findings issued to them by regulatory agencies, cooperative research groups, contract research organizations, the sponsor, or the funding agency.

COMPLETION: It is your responsibility to let the IRB know when this study is complete by sending an email to OIR@HarperCollege.edu. In addition, please provide the Harper College IRB with a copy of any presentations or papers that result from this study. Finally, it is your responsibility to let the IRB office know of address changes and project date changes.

We suggest you keep this letter with your copy of the approved protocol. Please refer to the exact project title and protocol number in any future correspondence with our office. All correspondence must be typed.

McLennan
COMMUNITY
COLLEGE

Date: 17 February 2016

To: Jennifer Merritt

From: Richard Sneed, PhD, Chair, Research Review Committee

Re: "Individualized Instruction as a Faculty Training Strategy for Technology Integration"

Ms. Merritt:

Thank you for inquiring to McLennan Community College for permission to conduct you research. We are just beginning the process of formal review of Human Subjects Research, and our Research Review Committee is newly-empaneled. We are grateful that you have chosen to include McLennan in your study.

We have reviewed your submission, "Individualized Instruction as a Faculty Training Strategy for Technology Integration" and the accompanying materials, including approvals under Expedited Review from Nova Southeastern University, and from Harper College. You have our permission to recruit study participants and to conduct your study here at McLennan Community College. We ask that you remain in regular communication with us during the course of your study activities here, and to notify us of any amendments to your study. Additionally, you are required to report any adverse events occurring here to the RRC, in addition to any such reporting required elsewhere. Please notify us when you have completed all data-gathering activities here, and send a letter indicating when your study is closed.

As both Nova Southeastern and Harper have registered IRBs, and have approved you proposal, it is not necessary for us to do so, and we formally cede review authority to your IRB of Record. You are, however, expected to conduct your research according to the general policies and procedures expected of all members of the MCC Community, and it is your responsibility to familiarize yourself with them. We will be happy to answer any questions you may have in this regard.

Thank you for including MCC in your study, and good luck.

Regards,

Richard Sneed, PhD, Chair, Research Review Committee

# Appendix C

## Email Call to Participate in the Study

**To: Harper College and McLennan Community College Faculty**

**From: Jennifer Merritt, PhD Candidate,**
**Computing Technology in Education, Nova Southeastern University**

**Subject: Research Study on Individualized Instruction as a Faculty Strategy for Technology Integration**

Dear Faculty,

Have you attended the group training sessions provided by the college to learn more about Blackboard? Do you want to learn more about how you can incorporate Blackboard into your course designs? If you are a faculty member in the English, math, or science department and have attended the Blackboard Bootcamp course and/or Advanced Blackboard session but have yet to implement Blackboard into your course design/curriculum, you are invited to participate in a research study.

The study involves your participation in an individualized training program consisting of learning how to utilize Blackboard and incorporating the learning management system (LMS) into your curriculum. The second part of the study consists of gathering data through a series of four interviews to collect data about the training process and how it helped (or did not help) in Blackboard tool integration into your curriculum.

We will conduct the study on the following schedule:

1. Participate in the initial two-part interview used to gather information about your current technology use and views of the existing group training, establish your training needs and goals, participate in the one-on-one, individualized training program (which will span 6 weeks);
2. participate in the individualized training program (which will span 6 weeks); and
3. participate in two additional interviews, each approximately one hour in length. The time and place for these interviews can be of your choosing.

The timeframe for these steps is as follows:

1. The initial interview process will take approximately 3 weeks total for all participants.
2. The training program will take 6 weeks to complete.
3. The second interview will be conducted after the training program is completed and will take approximately 3 weeks total for all participants.
4. The final interview will be conducted upon completion of data transcription and will take approximately 3 weeks total for all participants.

The initial meeting will consist of two open-ended interviews, totaling approximately one hour in length. This training program design interview will discuss the previous group training process and determine the training needs and goals. Based upon the information received from this interview, the training program will be designed and delivered. The first data-gathering interview will also be used to collect data about the your experiences; this will be an open-ended interview about your history as a faculty member and how you were conducting courses prior to the individualized training program.

Upon completion of the individualized training, the process of collecting data about your training experiences will begin. The second data-gathering interview will focus on your reflections regarding how the individualized training will fit with your instruction and/or how you have adapted the instruction to utilize Blackboard's tools. The third interview will ask you to clarify the researcher's interpretations from data gathered from previous interviews.

The research study will be a qualitative phenomenological study using the lens of faculty members' perspectives about their technological, pedagogical, and content knowledge and how having an individualized training program can assist or increase Blackboard utilization in the classroom.

The researcher is a computer education faculty member in the country who is working on a doctoral dissertation and who would appreciate your help. In return for your participation, the researcher will offer additional training on other tools that be utilized in conjunction with Blackboard, per your request. The results of the study will help shape further faculty development for higher education.

If you are interested in participating in this study, please reply to this email, and include your contact information in your response.

Sincerely,
Jennifer Merritt, EdS, ABD
jmerritt@nova.edu

# Appendix D

## Cover Letter and Adult Consent Form

Date: TBD

Re: Research Study *Individualized Instruction as a Faculty Training Strategy for Technology Integration*

Dear _____,

Thank you for your interest in my dissertation research on the experience of how individualized instruction can improve technology integration. I value the unique contribution you can make to my study, and I am excited about the possibility of your participation. The purpose of this letter is to give your more details and to secure your signature on the attached Adult Consent Form.

The research model I am using is a qualitative one through which I am seeking comprehensive descriptions of your experience regarding individualized training and how it can improve technology integration. In this way, I hope to illuminate or answer my questions for this study.

Through your participation, I hope to understand how individualized training can help you (faculty member) to not only understand how to integrate Blackboard into your courses but to understand how it relates to your pedagogy. After the training program has been completed, you will be asked to recall specific activities that you experienced as you learned how to integrate the technology into your classroom. The questions you will be asked will focus on your technological, pedagogical, and content knowledge (TPACK) and how they relate to Blackboard. I am looking for detailed information about your experiences of working with Blackboard such as your thoughts, feelings, as well as situations that you felt you needed more knowledge to implement the technology. A digital copy of the questions will be emailed to you to look over before each interview.

I value your participation and thank you for your time, energy, and effort commitment. If you have any further questions before signing the release form, or if there is a problem with the date and time of our meeting, I can be reached at the contact information listed at the bottom of this letter.

Please read and sign the attached Adult Consent Form, and indicate below which days of the week would be best to meet with you for your interviews. The interviews will take place at Harper College in the faculty development department (CAFÉ) or via videoconference.

You can return the attached paperwork by either meeting with me in person, or you may print and sign the form before you scan and send it back via email.

Please return this form as soon as possible. You will be contacted by email to set up specific dates.

(Your) College Department _____

(Your) Location _____

Best time for an initial interview

Monday, Tuesday, Wednesday, Thursday, or Friday

(circle your choice) is best to schedule my interviews.

Contact information

I can be reached at _____ or _____

My email address is _____

# Appendix E

## Initial Interview – Training Program Design

Participant Name _____

College Department _____

*Please note that this interview will be recorded for clarity purposes.*

The focus of this interview will be to get an understanding of your Blackboard knowledge, how you feel it relates to your courses, and what items we need to focus on for the one-on-one training sessions.

### *Training Program Design and Data Gathering*

Please review the following analysis of the existing training methods currently being conducted at the college:

An initial review of the existing group training was conducted for Blackboard training. It was determined that the college offered two different training sessions from the introductory concepts to the advanced features in Blackboard. These training sessions consisted of individuals attending the sessions, which consisted of a one-time meeting that lasted approximately 4–6 hours. During the training sessions, the trainees were walked through all Blackboard's tools and were given opportunities to practice the lessons they were being taught in a blank learning management system (LMS) shell. The training focuses mainly on the technological tools, only with brief mentions of how it could apply to a curriculum (depending upon the trainer). From a technology perspective, the training teaches the tools but does not teach how they could apply to each individual or that individual's pedagogy.

Do you feel the analysis is a correct summary of how the existing training program is being conducted and what is being achieved?

What were some of the issues with the method of training with the group training program provided by the college?

What items from the group training were you interested in learning but did not get a good grasp of from the training session?

How do you think Blackboard can assist you with your course management?

How do you think Blackboard can assist students with course management?

What items within Blackboard to you see as beneficial to the courses you teach?

Based on your previous answers, what items within Blackboard would you like to learn more about? (Pick 3–4 items.)

In your opinion, after going through a one-on-one training program, do you feel sufficiently confident to implement some Blackboard features for the current or following semester?

### *Training Program Design Plan*

After the initial interview is completed, a 6-week training program will be developed for each participant in the study. The program will consist of meeting at least once a week and focusing on the items the participants requested to learn more about. The training sessions will be conducted at Harper Community College, in the Faculty Development Department (CAFÉ), at the convenience of the participants.

Meeting times will be planned and scheduled with the CAFÉ to ensure that a classroom is available with access to a computer, Blackboard, and the Internet. The training will be conducted in 1-hour time blocks and could span up to 2 hours, depending upon availability of the trainer, the participant, and CAFÉ accessibility.

The training will be one-on-one, which will provide a more personal approach and allow the learner to ask any questions that they may have about utilizing and integrating Blackboard, along with assistance in setting up their courses for the current or following semester. The training could be conducted in either an existing LMS course-populated shell or a blank shell. Any additional tools the participants want to learn will be added to the list for training, but the main emphasis will be on Blackboard.

### *Training Program Design Plan Schedule*

*Example topics are depicted to show how the training schedule would be designed, but will vary based upon the participants' area of focus.*

| | |
|---|---|
| Week 1 | Review items discussed from the initial interview.<br>Review the proposed training schedule.<br>Determine if training items will be learned for the current semester's course, the following semester's shell, or a blank learning shell (contact Blackboard support to set up access privileges).<br>Discuss how Blackboard can help with a teaching curriculum.<br>Show examples of Blackboard course designs.<br>Assess and confirm Blackboard knowledge. |
| Week 2 | Training on Topic #1<br>(i.e., grade book)<br>Incorporate actual course material into a lesson (ask participant to provide this).<br>Teach how to set it up, add to it, and modify the material. |
| Week 3 | Training on Topic #2<br>(i.e., syllabus) |
| Week 4 | Training on Topic #3<br>(i.e., announcements) |
| Week 5 | Training on Topic #4<br>(i.e., supplemental material) |
| Week 6 | Recap about all material. |

| | |
|---|---|
| | Include supplemental training on additional features (if time).<br>Hand out second interview (data-gathering) interview questions.<br>Schedule a time for the second interview. |

# Appendix F

## First Interview Question Guide

Name: _____

Department: _____

*The focus of this interview will be to get to know you a little better and to learn about your overall teaching experiences. Please note that this interview will be recorded for clarity purposes.*

***First Interview Questions***

***Technical Knowledge***

Tell me about your experiences in using technology in the classroom.

How did you learn to use a computer?

How have you used technology in the classroom? In your curriculum? What types (computer, PowerPoint, etc.)?

What challenges and successes did you have in using technology in general? In the classroom?

What have been some of the challenges in using Blackboard in the classroom?

If you have been utilizing Blackboard, do you feel it has enhanced the content in your curriculum? Has it enhanced your teaching strategies?

***Content Knowledge***

What content area do you teach?

How did you become interested in your content area?

How long have you been working in your content area? Teaching your content area?

What approach you take to teaching your content?

How do you currently see technology being used for your content area? Do you feel it can help in the learning process?

***Pedagogical Knowledge***

Explain your pedagogy.

Explain a typical lesson for your content area.

How do you do classroom management (e.g., grade book, syllabus, handouts)?

Does your classroom management change with the integration of Blackboard? How does it change?

What are the types of learning activities you do, and clarify which ones incorporate technology? What types of technology do they include?

Do you feel the learning process changes with Blackboard utilization?

***Technical Knowledge***

How did you learn how to use Blackboard?

Did you learn through the college training program or other schools?

How long did the training take?

Were there any technical challenges that impacted your utilization or integration of Blackboard into your curriculum?

What support features have assisted in using Blackboard?

***TPACK***

From the training you have received, were you able to integrate the content outcomes, pedagogy techniques, and Blackboard use?

*Thank you for your participation.*

# Appendix G

## Second Interview Question Guide

Name: _____

Department: _____

*The focus of this interview will be to get to review the experiences of the training and technology integration into the curriculum. Please note that this interview will be recorded for clarity purposes.*

***Second Interview Questions***

Please revisit the first interview questions to see if there is anything you would like to clarify or amend.

Tell me which tools and/or features you use in the classroom.

How are you using these tools? Why are you using these tools?

How has your subject area knowledge impacted your decision to integrate certain Blackboard tools?

How did you determine which tools to utilize?

Which tools did you find to be successful and why? Which tools were unsuccessful and why?

What technological factors either supported or hindered your Blackboard utilization?

Has your pedagogy changed due to using Blackboard?

How does Blackboard integration improve the teaching and learning process?

How has the individualized training impacted your perceived ability and willingness to integrate Blackboard into your curriculum?

How has the individualized training impacted your decision to integrate Blackboard into your curriculum?

How did the individualized training aid in the increase of technology integration?

Do you feel the training helped better prepare you for using Blackboard? Why?

Is there anything you would like to add?

*Thank you for your participation.*

# Appendix H

## Third Interview Questions Guide

Name: _____

Department: _____

*The focus of this interview will be to review the experiences of the training and technology integration into the curriculum. Please note that this interview will be recorded for clarity purposes.*

Discussion and participants' feedback and clarification of my preliminary transcripts of the first two data-gathering interviews.

Did you have any additional questions?

Do you have any additional thoughts or opinions?

Do you have any additional reflections on the meaning and significance of the findings of this study?

*Thank you for your participation.*

# Appendix I

## Thank you Email to Participants

Dear _____,

I hope you are enjoying your break and planning for a good summer. I have been working hard on transcribing your interviews and request that you take a moment to review them to ensure I have captured your input correctly. I have attached the first and the second interview, along with the third interview questions, in Word form for your review.

The idea is to ensure that I have recorded everything correctly from the first two interviews and to give you a chance to revise or amend the transcripts prior to me moving forward in the writing process. So, if you would please take a moment to review per the following steps, I would appreciate it:

1. Open the attachment in this message (it should open in Microsoft Word).
2. I have turned on Track Changes, so if you type something on the paper, it should type in red. If it does not, go to Review and click on the Track Changes button.
3. Make any changes you think should be made. Feel free to leave me any comments within the paper by going to the Review tab and clicking on New Comment.
4. Save the document to your computer.
5. Click "reply to this message" and attach the file to your response.
6. Please review the few questions for the third interview form that address any additional comments you may have. Attach this form as well, or if you feel you have nothing more to add, just write in the body of the email that you have no further comments.

*If you would prefer to meet with me face to face for the review process, third interview, and discussion, feel free to let me know so we can schedule a time that works best for you.*

Also, if there is something I agreed to do for you, please remind me. I have remembered most of your technology requests, but a request may have gotten buried in the research I have been plowing through. Please just let me know.

Every one of you has been great, and I truly appreciate your help with my research! I have enjoyed your stories, and I have learned so much from you, just as I hope

you have learned from the training. Let me know if I can be of any further assistance, and thank you!

With warm regards,
Jennifer Merritt

# Appendix J

## Textual and Structural Descriptions for Hannah

*Textural Description for Hannah's Experiences*

I first learned how to use a computer in college. I did not have a personal computer, not as we know them today; all we had at the time were word processing units. It was when I started my master's degree at Baylor University that I encountered more of a personal computer and personal computing experience. I remember getting an email account as a graduate student and realizing I did not even know what it was, and that was just the beginning, because that was when I started using and learning more about computers. It started off as personal use after I bought a home computer, and then my use slowly started increasing to be more generalized along with learning the different Office applications. One key thing that helped me learn how to work on a computer was learning how to create PowerPoints. I was helping my husband because he had to create presentations in his line of work, and his secretaries did not know how to do them. So, all in all, I never took an actual computer course; I would say that I am pretty much self-taught through my experiences at Baylor and from helping my husband.

My work experience comes from teaching at an elementary school and helping my husband with his presentations. Upon receiving my master's degree, I taught at the higher education level. I have now been at MCC for four semesters. A colleague of mine, a past supervisor who I went to grad school with, emailed me to let me know that MCC was looking for more instructors to teach and thought of me. I did not pursue the

opportunity at first, but after my colleague contacted me about the opportunity again, I considered looking into it. I looked into what was needed, and I realized that I was ready to make a change, as I was tired of teaching at the elementary school level.

I teach college-readiness courses. It is essentially a “Welcome to College” course in which we focus on time management skills, Myers-Briggs testing, different personalities, and basic reading and writing skills. We do an emotional intelligence test, which is a huge part of our course and is used to help us identify students’ strengths and weaknesses. We then take this information and use it to work with the students to help them improve the skills that need work. We do a unit on stress management, we do a unit on budgeting, and we focus on learning styles, as well as study skills, so there are quite a few college-readiness skills we address in this one course.

Before I came to MCC, I did not utilize any technology in the classroom, as I worked for small schools, and we did not have a lot of technology within the school system nor in the budget. Upon moving to Texas and teaching elementary courses, we also did not use a lot of technology in those schools, so when I came to MCC, using technology in the classroom was a new experience. I could incorporate technology in the classroom and was introduced to Blackboard. The school offered me some technical training, and the school also offered some courses for those who were interested in learning the basics of computers. Because it had been so long since I had taken any computer courses, coming to MCC and using technology in the classroom felt like I was starting over (as an entry-level user). So, during my first year at MCC, I did not have any formal training at all; I learned how to utilize Blackboard by asking people in our department how things worked and experimented and learned by trial and error.

Currently, in our class setting, we typically have a PowerPoint presentation prepared, and within the PowerPoint, I usually have a link to a video or an article to expand upon the topic being discussed that day. In the classroom, we spend quite a bit of time reviewing the videos, and in some cases, we must view the videos multiple times for the students to grasp the concepts being expressed.

The courses I teach are intro to college classes that consist of a weekly face-to-face, one-hour class that all incoming students are required to take. I also teach a remedial course, which is a three-hour, face-to-face class. In my remedial course, the class spends at least four or five class periods in the computer lab throughout the semester, trying to make sure students know how to use MCC's websites and email. One of the key features we must get the students to or learn is to utilize the MCC email system and teach them how to use Blackboard. A lot of professors at MCC do not require students to use Blackboard weekly like my class does, but we still need to make sure they know how to use it. We have a lot of other tools within MCC's websites—such as a web advisor and career search—that we want the students know how to use in addition to knowing how to sufficiently navigate the website. I have had students who are also unfamiliar with Word, so we teach them the basics, including how to use spell check and other Word tools. We also cover basic things in class, such as making a PowerPoint presentation or even how to find a YouTube video online. One of the key things that I have the students do is work on writing papers, as they will have to write a midterm paper for my course. I make sure to reserve the computer lab so they have time to write their papers and so they can ask me questions while we are in the lab. I have slowly incorporated online quizzes into Blackboard, and in addition to the quizzes, I have the

students submit their papers to Blackboard. Most of the students are freshmen, either first or second semester, so some may be used to working on computers, but others are not. Thus, writing during the lab and taking online quizzes in class helps alleviate any stressors for the students, in case using computers this way is new for them.

Blackboard's challenges, from my perspective, are that it is not very user-friendly for students, and I would say not user-friendly for instructors as well. I think one of my biggest beefs with Blackboard, now that I have been at MCC for four semesters, is that each professor uses a different course design, so when students log in to Blackboard, the pages and setups are different from class to class. This causes difficulty for the students because they do not know where to find information within Blackboard. I know this is probably an MCC issue, but it would be nice to see all the Blackboard shells have the same layout and design; this would make it more user-friendly for the students and easier for instructors to learn and manage.

Once you get past Blackboard's navigation, I would say that, yes, it does help and does enhance the curriculum's content because it allows the instructors to post all the learning content for students to review. I can also say from an instructor's perspective, it helps with all the paper management, as everything is submitted online so I do not have to worry about losing anyone's paper.

My approach to teaching is utilizing somewhat standard lectures, as we are required to be very specific in the content that we present, along with wanting the students to take notes because we want them to be accountable for the content. We give them the course notes ahead of the class meeting, and the students must fill out the note sheets while I am lecturing. This is carried out because we require them to perform an

action in addition to just listening to the lecture. We also try to incorporate some form of physical activities so the students are not just sitting and zoning out, such as small group discussions within the classroom. So, while I am teaching a course, I will either have a video playing, which we will then discuss, or we will have some sort of activity, such as taking notes, which is another topic that we cover in the course. I will give out various examples of different note-taking methods using examples and techniques and then ask the students to practice that within the class. The primary focus for the course is to prepare high school students to be ready for college-level courses. We will periodically have them get their textbooks out and ask if they have read a chapter. We will ask if they are highlighting and underlining the text. Are they looking at the headings? These kinds of things are used to promote different study skills for the students. I try to do some sort of interactive activities in class as well so the class is not so boring. Some activities are more fun to complete, like the Myers-Brig test. We have all these different activity levels, like redoing an assignment, but we do not tell them if it is aligned to certain personality types, as we want the students to figure things out from what they have learned.

I feel that Blackboard helps in the learning process, specifically in my course because our entire goal is to prepare our students for college and the rigors of college. We want to prepare them to be successful in college. They will eventually transfer to a different college, and because of this, the students are going to be required to be knowledgeable and able to use a computer for word processing, as well as taking tests online. I think that for MCC students, it is imperative that we are in the computer lab weekly, so that if there is a problem, I can tell them how to fix it in person. If I cannot figure out their problem, I will have a technical support individual assist us, which I think

helps them realize that there are additional sources for help within the school. I do not want them to be afraid of running into a problem with technology, so this is where they are going to work that understanding out. They are going to need these skills either next semester, next year, or as they get further in their program. We use Blackboard in the course for a lot of document management, quizzes, and discussions. This allows the students to have access to all the information, and we do not have to worry about them losing any of the handouts.

In my face-to-face course, I still provide actual handouts, but students have a copy of that handout posted in Blackboard. It is attached in a PDF format for them, so if they miss class, they have access to what they need. I have set up the Blackboard shell so it is organized by weekly content so students know exactly which week to go to grab whatever document is needed. The only things I must enter manually are the grades for certain assignments, but I am considering changing that task with some online quizzes and assignment submissions that are linked to the grade book.

A typical lesson would consist of the students showing up for the course, and we would then proceed to do a PowerPoint presentation to focus on the highlights of the day's topics. We would then proceed to the lesson is, such as working on their essay paper, group discussions or conversations, or the required quizzes for the course. They have a lot of content in Blackboard, and it is mainly documents, as many of the teaching materials and discussions are made and conducted, respectively, during the face-to-face course.

As discussed earlier, learning Blackboard was essentially carried out by trial and error. I was hired with very little prep time prior to the course beginning, so I had to learn

very quickly not only what was needed for the course itself but how to at least use Blackboard's basics. Thankfully, another colleague at MCC was willing to sit down and help me, as she had taught the course before and had a good design currently set up within Blackboard. This allowed me to explore Blackboard on my own and play around with it a little bit prior to beginning my course. I remember that the first semester teaching here, with little to no experience in Blackboard, was very intense because there was a lot of content to learn in addition to teaching the course. After being here for a few semesters, MCC offered some group training, which I attended but did not feel like I absorbed the material or that the instructor gave us many specific goals to incorporate in our current courses. The group training was more generalized instead of looking at how we work with our students or addressing that we may have little to no technological training. I need to design my courses to make it easy for not only myself but for the students, and the group training did not help me with this.

The individualized training program helped me understand why things were set up the way they were within Blackboard because, as I said, it was a copy of another instructor's shell, so there were things placed and used that I did not understand the reasons behind. The individualized training allowed me to understand these concepts not only from the design perspective but from the perspective of why things were the way they were, which helped me get some insight into how things could be changed. With the individual training, I could ask much more specific questions. Being able to ask those specific questions helped me understand how to not only modify Blackboard for my current course but how to ensure that it is easy for the students to navigate.

I know one of the key things that I am going to be implementing is the use of the assignment submission for papers. I feel that I need to give more tangible feedback to the students because I teach an introductory course, and the tool that was being used—the journal tool—was not providing the detailed feedback that was needed. So, the assignment submission will help our students craft a well-written paragraph, which is one of our main goals for this introductory college course.

I think one of the other things that helped with this training is that it is so personalized that it narrowed down not only the course content but the tools. I say this because no one else in our department utilizes Blackboard as much as I and another colleague do. We are kind of the ones asking questions on how to do certain things, but no one else in the department knew how to do what we were asking. So, we would find that for any kind of Blackboard help needed, we would have to go outside the department, which was fine. However, that leads us into the area of the instructional design department, which focused on the tools and not necessarily what we were trying to present to our students. It kind of goes back to MCC's group training, where there were a lot of good tools shown to us, but while I was learning those tools, I just kept thinking about how I did not believe my students even had the capability to do these things on their home computers—such as fillable PDFs (which they did not) —and I changed my mind after the individualized training.

To me, Blackboard enhances the students' accountability that we aim to teach by tracking week-by-week progress. It is easy for me to see when someone is falling behind because Blackboard is always current and up-to-date with the assignment submissions or quizzes. It allows me to see the issues quickly and try to address those as soon as

possible. The personal training was very helpful because I had previously gone through the training within a group setting, but just did not feel like I absorbed the knowledge about the Blackboard tools I needed for my course's goals. It was just nice to ask those specific questions, fix things within the current Blackboard shell, and make some changes that are going to be very positive for the students.

I think it made all the difference in the world to do the personal training. The school encouraged us to use the various tools, but those tools were never talked about or discussed at the personal level. It was all very much the theory of this and how these tools are amazing and how you can interact with students, but the instructor never took the time to look at the actual student population within the course that I teach. I like the connection between myself, my course, and how I can utilize Blackboard to align with those two things.

*Structural Description of Hannah's Experiences*

Hannah's experience with technology began when she went to college. She did not have any computer courses or access to a computer until she went to school to get her master's degree at Baylor University. Even at that time, Hannah admits that even getting an email account was very foreign to her. Over time, however, she bought a home computer and slowly started increasing her knowledge of computers in general and started to learn the various Office applications. This knowledge further became helpful as she assisted her husband in creating PowerPoint presentations for his work. Prior to teaching in higher education, Hannah taught at elementary schools in the Louisiana area before moving to Texas. After teaching elementary school for quite some time, a

colleague told her about an opening at MCC, and though she did not pursue it initially, she eventually did and has been at MCC for more than four semesters.

Upon beginning teaching for MCC, Hannah had no experience in utilizing Blackboard. She had to depend on previous instructors and colleagues within the school to get her up and running. She had very little time after getting hired to prepare her course, so when her first course was about to begin, another colleague just copied their Blackboard shell over for Hannah to use. So, for her first semester of teaching at MCC, she was stressed because she had to get used to the higher education environment and try to get used to using Blackboard.

Hannah will typically start off the course with a PowerPoint presentation, focusing on the key topics that the students need to learn for that day or week. In addition to PowerPoint presentations, she will utilize YouTube videos to enhance the students' learning experience. She utilizes the Blackboard shell for document management in case a student cannot attend a specific class. This way, the student can log in to the Blackboard shell and still get all the documents needed. She also uses the Blackboard shell for quizzes, grade book entry, syllabi, and any other information she feels is important. Even though all the handouts are in the Blackboard shell, Hannah still passes actual paper handouts to the students in class.

Some of the issues that Hannah experienced with Blackboard included in not knowing how to use it initially. She was not offered any form of training upon being hired by MCC, so a lot of what she learned and figured out was through trial and error. She also found it difficult to utilize another instructor's Blackboard shell because she found that she had to modify it to fit her curriculum and her teaching style. As time has

gone on, Hannah has worked on making modifications to the shell based upon her teaching style and what she has learned about Blackboard. She attended the group training offered by MCC but did not feel that she gained any insight from that training, as it was more of an emphasis on the tools instead of how the tools can work for her.

Hannah liked the personalized training because it gave her an opportunity to ask very specific questions not only about how to utilize specific Blackboard tools but how to incorporate these tools to enhance students' learning experience. She liked that the whole training session was essentially about her, her class, her students, and what can be changed to best meet all those needs. She was excited to take the knowledge that she had learned from the training and make changes to the existing shell to make it more user friendly and more efficient across the board. As she noted, Blackboard is a tool, but it is a tool that should be used correctly to achieve the goals set for the course.

# Appendix K

## Textual and Structural Descriptions for Ann

*Textural Description for Ann's Experiences*

My computer experiences came from some basic computer classes, and then I slowly learned more about computers a little at a time. Here at the school, they have some short courses to help you get more acquainted with using the Office products and computers, but I just do not have the time to take those classes. For the most part, you can say that most of the knowledge I have pertaining to computers comes from being self-taught.

I work in and teach about veterinary medicine. I became interested in this area because I was raised out in the country, on a farm where animals played a big part in our lives. In my younger years, my brother and I would go trapping and coon hunting, which started me down the path of learning about animals and how to take care of them. In one of our adventures, we set out to check on some traps, and there was an old cow that gave birth to a calf, and the cow was not doing well during the birthing process. My brother and I knew we had to do something to help the cow, as we knew the calf was not going to survive. As we tried to save the cow, it sparked my interest to help animals. After that incident, I decided to go into the veterinary field. At that time, there were not many schools you could go to nor did I have the funds to attend some of the bigger schools. So, I went to a smaller school and applied for the veterinary technology program. I have been in this field ever since graduating in 1975. As of today, I am the world's oldest veterinary

technician or licensed veterinary technician in the state of Texas. I worked as a tech for many years, and from there, I transitioned into teaching. I taught for about 13 years at a technical college, and when the college closed the program, I moved to MCC and have been here for 13 years. I have around 26 years of teaching experience, plus many more years of working in the veterinary field.

When it comes to teaching in the classroom, the classrooms are equipped with smart boards and overhead projectors. I utilize both of those components to show PowerPoint presentations, as I want to show pictures from the books that the students are using or pictures of procedures that the students must use on animals. For the most part, I typically just use the components in the classroom and PowerPoint presentations. I think one of the challenges in using technology in general is that when it is working correctly, it is wonderful, but when it is not, it can become very frustrating. The challenge comes in making sure that everything is going to work as it needs to.

At MCC, we have not been using Blackboard for long. We had a Blackboard course that I took, maybe a year or two ago, that had Blackboard basics. I took the class, which helped get me started with using Blackboard, but I did not learn anything new nor did the training go past the basic items that I had previously learned. So, the only training that I have in Blackboard has come through the college and from what I have figured out on my own. The training course the college offered consisted of meeting once a week for around five or maybe 6 weeks.

Some of the successes that I have had in using Blackboard come from some of the basic components, such as posting lecture notes and outlines for the students to review prior to coming to class. I like to post lecture notes, as I feel they help students in the

note-taking process, as the notes are completed for them; then we can just focus on the lecture's content.

Some of the challenges I have run into include when the content changes, and I need to update the outlines or lecture notes in Blackboard. This is a challenge due to my not being real swift with Blackboard, so completing the updates is difficult. I usually have to go to the main campus or get on the phone and have someone walk me through the process. That is an area that I am not very strong in doing myself. Some of the other challenges I ran into came from the training provided by the school. The computers in the computer lab that we were using had a completely different look than the computers in my office or at home. Because I do not have a big computer background or much knowledge, this made it confusing for me to try to take what I learned and apply it. So, as I noted before, when I ran into these problems, I would typically go over to technical support or talk to somebody over the phone for help.

I feel for teaching approach is to mainly produce and introduce the information to the students. I explain how to do it, and if we have a certain procedure to do, I show them how to do it through a demo so that when they get to their labs, they can do the same thing. It is a lot of visual work to ensure they understand how to do something correctly before I let them do it themselves. I like to use actual cases, case studies, and stuff like that to show the class real situations. In the lab, I just have the students do the procedures over and over until they know how to do them correctly. It is basically a lot of hands-on work, especially because we are dealing with live animals.

Because we do so much hands-on work and because there is so much to cover within the lectures, as I noted before, I feel it is important to at least incorporate the

lectures into Blackboard so the students have a copy of everything before they come to class. I must maximize the time within the classroom, so giving them this content up front can help us maximize the amount of time we have when face to face. An example of a typical lesson consists of reviewing the lecture content and then taking that content and putting it into a lab situation. One example is when we get a new kit to do heartworm tests. I give it to them and say, “Okay, we have done these before, but this is a different product.” I am trying to get them to understand that even though we know the basic procedures, we still must make sure that we read the instructions, because each of these new kits may have slightly different procedures to follow. I try to do these real-life scenarios because this is how it is going to be in an actual clinic, as the doctor will come in with a new test kit and want the student to run it. The student is going to have to read the instructions and figure it out. In the classroom, we can do lots of practice in the clinic; procedures typically need to be completed correctly the first time.

As mentioned before, the prior Blackboard training came from the college itself, as I did not have any exposure to the elements prior to teaching at MCC. The prior training consisted of going over some of the basic components within Blackboard, but I did not feel that I walked away from the training sufficiently confident to use the LMS effectively. I noted I could accomplish some of the basic things with the assistance of others—such as uploading outlines and lecture notes—but that was pretty much it. There are a lot more features within Blackboard that I know I could use; I just have been unable to do so.

The individualized training helped me realize not only all the extra tools that available but it confirmed my feelings: I know I can do this. So, for me, there were two

benefits of this experience, because I learned about some of the additional tools and increased my confidence in using Blackboard. I think this one-on-one training has helped a lot because the training sessions were carried out on my computer, which I am used to working on, and showed me how to do things I wanted to know. Through the training, I was shown where to find the tools, how to use the tools, and I was asked to go through the process myself. So, that takes that fear out of doing something new because I had someone right there with me to show me how and to help me if I did something incorrectly. It is almost the same process I do with my students through practice, so I found the more we practiced in the training, the more comfortable I became.

I do not feel it gave me a different view of Blackboard in terms of teaching because I have previously seen some of the benefits of using Blackboard in the classroom with the outlines and the lecture notes. I think utilizing the grade book more is going to help me in the future, even for the lab portion of my course. I am constantly getting asked by the students about their status as we go through the course's lecture and lab portions. By setting up the grade book for both sections, this will allow me to give them feedback as we progress throughout the semester; plus, it will allow the students to be accountable, as they can see what they still need to complete and what they have completed. It was nice to see that, even for the lab portion of the course, I could still utilize the grade book by just putting in checkmarks for labs completed.

I feel overall that the individualized training helped me tremendously. It puts it into perspective what I am doing instead of just being an example of something that did not relate to my teaching content area or my classroom design. I like that we talked through not only the tools that could be used within Blackboard but how those tools

apply to me. I think that is also what helps with my confidence level because these are the tools that not only benefit me but my students.

*Structural Description of Ann's Experiences*

Ann's computer experience came from taking some basic computer courses while she was in college, but for the most part, she learned how to work on computers by being self-taught. Being in the veterinary medicine field, Ann did not have much exposure to computers, so even the things she did learn were very minimal. Once she got into teaching, she learned a little bit more about computers—such as how to create PowerPoint presentations—but it was not until the last couple of years that she learned how to use Blackboard.

Ann saw some of the benefits of using Blackboard in the classroom after taking the initial training provided by the college. She realized that it could help her save time by uploading her lecture material and outlines for the course topics. Prior to using Blackboard at MCC, she never utilized any other LMS in her teaching career. The training the college offered assisted her with the basic features of uploading documents, but anything above that required someone else's assistance.

She sees the benefit in using the LMS in her courses, as noted with lecture notes and outlines, but at the time of the training, could not see how the LMS could assist her with her lab courses because the courses are so hands on. Typically, her courses consist of a lecture section and a lab section. In the lecture section, she will go over a PowerPoint presentation that contains a lot of images to show how procedures should be completed,

which will help students complete labs correctly during the lab section a. In the lab section, she typically does not use any form of technology, as it is purely hands on.

The only barriers that she experienced were in regard to the technology working correctly when she needed it to. Due to not having much experience with computers and the LMS, when things are not working the way they are supposed to, it causes her a lot of frustration and anxiety. This frustration and anxiety also get transferred to the students because they can see that she is not comfortable utilizing the technology or trying to figure out how to fix the problem.

Ann expressed that the individualized training helped her realize all the extra tools that Blackboard had to offer her and her students. Because the training was individualized and utilized screen sharing, she felt that the training helped confirm that she was capable of not only learning how to use the LMS but how to use the various tools. Overall, the training increased her confidence level, which will benefit her in utilizing the LMS in her future courses. Even though MCC's training helped her learn the basics of the LMS and how to use the basic tools, it was more like blanket training, and it was not until the individualized training that she realized how these tools truly could assist her and her content area.

Ann has always felt that Blackboard added to the learning process by providing documentation for the students upfront, but after completing the training program, she realizes there is so much more that the LMS can offer her and her students. She has had students requesting status updates, and after going through the training, she realized she can utilize not only the grade book for her lecture section but use the grade book for her lab section. This will help her keep track of the records in regard to what students have

completed and what they have yet to complete. As she noted, the training put what she is doing and how it relates to her teaching methods into perspective compared to just an example of how to use a tool in general. She expressed the benefits on two levels: One is the benefit for her students, and the second benefit is increasing her own confidence level in utilizing Blackboard in her classroom.

# Appendix L

## Textual and Structural Descriptions for Lynn

*Textural Description for Lynn's Experiences*

You will be glad to know that I took the very first computer course that was offered at my high school in 1983. There were only six or eight of us in the course, and we could pass the course by all going over to a friend's house to do the homework, as he was the only one who had a personal computer at the time. I remember having to get help on my final project for the computer course because none of us had personal computers; it was not the easiest thing to do. Then, while I was in college, I took a basic Fortran course and then we just learned as we went along, as technology changed with learning word processing.

At my first teaching job, we had an excellent computer science teacher, so I learned word processing with the students. Once we got a computer lab at the school, I had the kids write papers so we would learn Word while it was coming out and as it changed. If I remember correctly, I think my first computer was a Mac. During the early 80s and early 90s, you had to learn as technology came out or you would have to find someone who understood it to show you how to use it. As time went on and because of the popularity of Windows computers, I had to switch from a Mac to a Windows system, which created a whole new learning curve.

I have been an educator for 25–30 years. I originally started teaching in the K–12 structure and taught children's literature at Baylor University until I had children of my

own; I then dropped down to part-time work. My master's is that of a reading specialist with an emphasis on education. I taught K–12 on and off in different capacities until recently, when I was hired by MCC as an adjunct, teaching a course called Learning Framework.

As mentioned, the content area I currently teach is a course called Learning Framework, which is designed to prepare students for college and to prepare them by addressing their learning styles, their personalities, their emotional intelligence, and lots of time management concepts, as well as stress management concepts. We talk about financial planning and things that will help them be successful not only in college but in the future. We then discuss jobs (their future) because the course helps prepare them for anything they might encounter.

Two years ago, I started working as an adjunct professor for MCC, and at that time, there were no training courses for me to go through. It was just like the watch-a-video sort of training. Because I was hired right before the semester began, I basically had to learn from another adjunct professor—who was teaching the course I was going to teach—how to design and manage the course. She helped me put the information on Blackboard and helped me set up my classroom. A lot of my Blackboard learning was on a need-to-know basis because I was rushed into being hired and teaching for MCC. Along with learning Blackboard, I typically addressed the things that I needed to know at that time. So, I did not have a whole lot of one-on-one training to begin with, but ever since I began teaching at MCC, I have had some form of Blackboard's components in my classes, even if it is only utilizing the basic features. I have a general knowledge of word processing, a general knowledge of PowerPoint, and basic computer knowledge. I

combine these with the projectors in the classroom, as I typically give presentations, but if the systems are not working, I have to typically ask for help to manage everything. During the last semester, MCC offered training on Blackboard, which helped me utilize more of the tools and understand a little bit more about how to use the LMS.

Initially, my approach to teaching the content was to teach the topics as I went along and essentially to try staying ahead of the students. It took me some time to become familiar with MCC and MCC's students. After I taught for several semesters, I realized that my approach has changed a little bit. My goal in the course is to not have students drop out and to increase retention. I want the students to feel successful at MCC so they will come back the next semester. This goal made me realize that I needed to make them feel comfortable with all their courses. We try hard to determine the struggling students, and based on what they are struggling with, we direct them to the proper source for help; for example, if a student is struggling in math, we will point them toward the math lab. Last semester, I had a student struggling with depression, so I needed to steer him toward counseling. As I have learned more about the students, I feel more confident with the content, and I see my role changing a little bit from strictly an instructor to more of a guide.

The technology I use in the classroom consists of PowerPoint, as I want to make sure that I am teaching the content in the correct order, and the presentations help me stay on topic. I have realized that in just doing a presentation, I can lose some of the students, as there is not a whole lot of interaction in the classroom during the presentation. I continue to use presentations, but I realize they are only one tool, and I have been exploring different tools to utilize in the classroom to engage the students more. I have

begun putting a lot of content in Blackboard to try to help the students with time management regarding my course. So, as of right now, Blackboard is mainly used for document management and basic grade book features.

One of the challenges and successes I have had so far in relation to Blackboard is that the kids do not look at it as often as they should. The students do not check their Blackboard on a regular basis, which leads to the students not completing assignments in a timely fashion. So, I struggle in using Blackboard the way I should, with dates and deadlines, as well as a recording zeroes, because I do not want to discourage the students. I feel like there are certain things that need to be completed first so the students can build upon that knowledge. One of the things that I have tried to create those connections through is by having the students take an emotional intelligence test called the ESAT. I am not sure what ESAT stands for, but it is a test that relates to MCC's basic student entry exams. For the students to take the test, they must go online and follow the link, which takes them to a multiple-choice question exam, and once completed, the results are emailed to them. The results show students' strengths and weaknesses for the emotional intelligence test, and we look at those results in class and pair the test with a Myers-Briggs personality assessment so the students can realize their strengths and weaknesses. We try to make the course very practical, as we have the students write essays and answer different questions via the discussion board tool. Toward the end of the semester, I have them take a post-test so they can compare the results and see any of their changes in growth throughout the term. I guess one of the biggest challenges is not necessarily the technology itself—it is getting the students to use the technology correctly.

On a normal day, I will walk into the classroom and start with a PowerPoint presentation that focuses a little bit on the high points of what students should have read and what they should have gotten from the textbook. As we go through the PowerPoint presentation, it becomes a class discussion as well. It is not just me lecturing the entire time. I bring up questions for the students, which leads to a question and answer period. I also include some sort of activity-based assignment where the students must interact with one another, communicate with me, and include some sort of response to what we are learning. This helps the students to not be afraid to speak to others, and it helps them communicate clearly to their peers. I want them to know that there is no right or wrong answer as they are learning, which helps increase participation in the class.

We have slowly but surely put everything on Blackboard, and this allows us to still deliver the content to the student if the student is absent from class. This way, students have access to the handouts, the syllabus, and the discussions. In one way or another, I have typically used Blackboard, but I know that I am not using it to its fullest potential. One example of using Blackboard would be the online quiz and the essays students must submit. We have the students submit them to Blackboard, which allows me to grade the assignment and give them feedback in the quickest time possible.

As noted before, I mainly learned Blackboard on my own with the assistance of colleagues helping me address questions along the way. During the last semester, the school started offering Blackboard training courses, with the courses running 8 weeks long. Even with the time that I have committed to learning Blackboard on my own and the group training, I would still consider myself very much a newbie in using the Blackboard system.

Even with the training, there were still some difficulties in implementing what I wanted to implement to Blackboard, such as embedding YouTube videos. It took me a while to learn about the different programs out there, which could be incorporated into my course—mostly simple things, such as attaching JPEGs, all the different technology aspects of producing a good course shell, making it visually appealing, and so on. I think if I had more knowledge of the different programs for some of those things, it would have come easier for me. In the meantime, when I need any kind of support, I just reach out to the instructional design team for help.

Upon completion of the individualized training, I have changed quite a few things in my Blackboard shell. One of the key changes was in how the students submitted their essays because I had it as a journal entry, which did not allow for any detailed feedback. I then changed it to an actual assignment, which allows me to mark the paper up, and the student can get detailed feedback quicker. It is in making these changes that I have realized that if I had set these assignments up correctly to begin with, it would have made the document tracking easier for myself and easier for the students.

I do not necessarily feel that Blackboard changes the way I teach the course, as I have realized that it changes more how I manage the course. Though we have been addressing the face-to-face courses, I also teach online courses, and through what I have learned from Kelly—an instructional designer at MCC—I realized that to a certain extent, I am much more interactive with my online students than my on-ground students. It is nothing major, but it made me realize how differently I treat the two sections due to their modality.

The individual training has helped me streamline what I am doing and make it easier and more user-friendly. Even though the eight-week training course at MCC was very beneficial, I realize that the instructor was talking in generality, and just because the instructor said you should use a certain feature does not necessarily mean that I should use that feature. I came out of that training trying to implement everything discussed and have realized that it was not working. There are other ways to accomplish getting the students involved, and there are multiple ways to do things that align more with my course content and my teaching approach.

I feel that going through this very personalized training session has helped me look at my course content first instead of the tools. I was looking at the tools be used and then trying to make my course content and teaching approach fit the tools. I have learned how to look at the content first, then how to look at my teaching approach, and from there, how to look at which tools are the best fit for the course. I think that was the best approach to me because it truly helped me, versus going to a group training session and saying here are all the things you can and should be doing. I loved the personal conferences and would love to do more.

*Structural Description of Lynn's Experiences*

Lynn's knowledge of technology began when she was in high school, back in 1983. She attended a very small computer course (number of computers and students), so the students within the course had to work together because only one person had a personal computer at their home during that time. She then advanced her computer knowledge while in college by taking a basic Fortran course, but after that college course, all computer or technology knowledge was acquired through learning on her own. Lynn

has been an educator for 25–30 years, originally starting in the K–12 system, but now she teaches at the higher education level. She has a master's in reading and is considered a reading specialist.

Lynn was essentially thrust into Blackboard utilization in the classroom when she was hired last-minute by MCC. So she had to depend upon previous instructors for the course to get ideas about the course design and how to utilize Blackboard. In the beginning, she essentially utilized the tools that she knew and did not expand much from there, as she did not have the time for or the knowledge about using additional tools. Within the past two years of working for MCC, she has increased Blackboard use beyond just syllabi and grade books to include discussion boards and assignment submissions.

The typical lesson will start with Lynn going over a PowerPoint presentation focused on what the students should have read and what they have learned from that content. She has changed her teaching approach a little bit so that she is not just having the entire class period be a PowerPoint presentation. She works on engaging the students with question and answer periods and utilizing online discussions to talk about certain topics, even outside of the classroom. She has looked at other tools within Blackboard because one of the key components for the course that she teaches is time management. This led her to explore the calendar feature, the due dates, and the adaptive release for content to keep the students on track and doing the things that they should be doing at that time. Over time and with the assistance of another faculty member teaching the same course, Lynn has worked with the other faculty members to essentially put all the documents and handouts online for the students to access. This allows the students to have access to everything, even if they miss a class.

Some of the early issues that Lynn experienced in utilizing Blackboard included not knowing how to utilize the tools to their fullest or, in some cases, using the correct tool for an assignment or objective. She was having the students submit their papers as a journal entry, which made it difficult to grade and provide detailed feedback. Upon changing those assignments from a journal entry to an actual assignment submission, she learned how to mark up the paper and use the embedded tools within Blackboard to provide much deeper and richer feedback. She also realized that just because there are a number of tools and features within Blackboard, it does not necessarily mean that she has to use every one of them. Instructors need to look at the course they are teaching, look at the content they are trying to deliver, and then align that with the correct tools within Blackboard.

Through the personalized training, the biggest lesson that Lynn learned was to look at the course first and then select the appropriate tools within Blackboard moving forward. She realized that Blackboard is a tool, and even though she feels that it enhances the learning experience, it is a tool that has to be used correctly to achieve those goals. She enjoyed the personal conference sessions that were held and feels that they have helped her create a better Blackboard shell for her students and for herself.

# Appendix M

## Textual and Structural Descriptions for Greg

*Textual Description of Greg's Experiences*

My experience with the computer started when I was an undergrad and had to type papers for my classes. After graduating from college and beginning my teaching career, my increased knowledge of computers was due to on-the-job experience. I have been in academia my whole career, so I do not have any experience outside the teaching field. Since 1994, I have had a role in teaching biology in some way, shape, or form, whether through labs, lectures, or both. I went into this field because as an undergrad, I always found biology interesting, and from that, I realize I liked the areas of sciences. I was stuck between biology and chemistry but quickly realized that my love of nature and my appreciation for animals and evolution drove me down the path to teaching biology.

Because my classes consist of a lecture portion plus a lab portion, I use Blackboard, but I realized I probably am only using a fraction of the tools available. Even though my whole career has been in academia, I have only started using Blackboard within the last two years. Even in the beginning of using Blackboard, I kept all my grades in an Excel spreadsheet and would periodically transfer grades over to Blackboard for the students to keep tabs on their progress. This semester is the first time I am trying to use the grade book within Blackboard as the first source for entering grades. In addition to the grade book features, I utilize document uploading, such as the syllabus and any

lecture notes and handouts I have for the class. So, the only experience I have in Blackboard is with the basic features that I learned from the training provided by MCC.

The training provided by MCC was interesting, and it helped me see Blackboard from a different perspective. It got me to thinking that there is something to this and probably something more I can do with this tool, such as putting the grades directly into Blackboard versus using the Excel spreadsheet. The training MCC provided lasted around 7–8 weeks, where the college just taught me the basics. To be honest, I do not even remember going through the training or what was really learned. It is still a learning curve for me, as I am still a paper person, but I am learning to try to incorporate Blackboard's tools more, which I feel benefits the students, as they have access to the handouts and notes, even if they miss class.

I think some of the challenges I faced with Blackboard in the beginning were trying to figure out how to upload files, post pictures, or post anything I wanted to share with students. I think a lot of the technical issues were in regard to just learning how to use the tool correctly, as many times I would try to upload a file that was too big, or I would run into a lot of formatting issues. I had no major problems overall, but I was also just using the tools that I had learned.

My approach to learning was to teach in generalizations because I believe biology is a hands-on skill set, which leads to not only learning the general terms but the tools of biology because the scientific method is stressed in biology from day one. I tell my students that if they do not retain anything from a biology course, they will at least have learned some great problem-solving skills that will be useful for other courses. I want them to have a hands-on approach and to use multiple learning methods, as well as

repetition. With the hands-on approach, I want them to hear and feel it. This is carried out by going outside to smell and touch nature, through dissecting a worm, dissecting a frog, going and observing ducks, or seeing what their normal behavior patterns are in the park. Therefore, for the lab portion of the course, I believe in the value of field trips, such as going to the wetlands or to natural museums or history museums. I utilize PowerPoint presentations in the classroom but feel the students do not remember the content as long as from taking them to the actual wetlands where they may slip and fall in the mud while trying to catch a frog. Those experiences will stay in their minds much better than a presentation. Presentations work well for the lecture portion of the course because they help deliver the terminology and content before we make the actual field trips. So even with the hands-on approach for the lecture portion of the class, I feel it is beneficial to upload the notes to Blackboard for the students.

A typical lesson consists of me posting two pages of content where a page and a half of that are notes summarized from the chapter. This allows the students look the notes over before they come to class. Then I do a short introduction to the topic and then try to tie in with some feedback for what we previously talked about. I will then outline the content for them, and we go over it; then, they can add notes as we go along. I also provide review sheets that apply to helping them study for their exams. The course consists of 3 hours of class time, which I split in half with the first part being the lecture and in the second part consisting of the lab.

As mentioned before, my prior Blackboard training consisted of the training provided by MCC and what I have learned on my own. There were many times I ran into

issues, and I called for assistance to correct those issues. The prior training was very minimal.

The individualized training was a little scary in the beginning due to allowing the trainer to just take over my course shell and show me how to use these new features in an active class with live grades. That was a big deal for me to let go of the control. In the end, it went fine, and it was not a problem, but it did bring up some fear in the beginning. It helped me realize that it is okay to ask questions and to open your course shell to others to figure out what needs to be changed. It also helped me see how I could change not only the existing tools that I am using but how I can incorporate new tools that will help the way I manage the content and Blackboard, which will ultimately help the students.

With the training giving me a different perspective, I think the next time I teach a class that I have never taught before, I will keep in mind the items we discussed in terms of how I set up in Blackboard rather than just trying to figure out what is the next week's assignment. I looked at how I make lessons flow through Blackboard and where it makes sense not only for myself but for the students. This is a much better approach than setting things up and tweaking as I go. I realized I can also build a shell and copy that shell, which helps me ensure that I am using Blackboard as my storage area because it helps me save time for future core setups. Two things I am really considering going forward is looking at things from the Blackboard perspective, and I want to view Blackboard use through the students' eyes. If you have everything lined up and organized, it will make teaching the class much easier, as I only have to focus on the teaching aspect versus trying to scramble with creating the notes, getting Blackboard set up correctly, and so on. I also like the fact that, as we discussed, if everything is set up, it make it easier to tweak

and modify the schedule as I go, let alone if I am out sick; then, someone can step in, and they have all the content to teach the class in front of them.

My takeaway in view of the individualized training is very positive. It was nice that the training was one-on-one and that the training focused on my specific content area. Not only did the training offer a new learning experience in Blackboard itself but it gave me some good insights as to how I was setting up the Blackboard courses, and instead of being asked to change everything, we discussed what was previously there and how we could make improvements to the information and design. It also helped me realize that the way I organized things was making the students do a lot of clicking, and just by doing some reorganization and understanding how to use folders, I learned how one semester's worth of content could be put into a nice, modular form. I also like the fact that once I make these changes within the shell, I can then copy the course for the next semester and adjust it as needed. I would say overall this study helped me become more confident in what I was doing, helped me realize it was okay to ask for help and to let someone else take over my shell to show me how to correct things, and gave me a lot of good ideas for what to do for future semesters.

*Structural Description of Greg's Experiences*

Greg's technical knowledge began when he was an undergrad in college and had to use computers to type up papers for class. Upon graduating from college, he immediately entered academia and has been in academia ever since. His computer knowledge has increased through a trial-and-error effort along with any of the training he received from the schools he has worked for.

Greg has only been using Blackboard for a couple of years, as prior to that, he would utilize various Office applications to keep track of grades, notes, lectures, and so on. Within the last couple of years, he incorporated Blackboard into the classroom and used it for document management and for the grade book so students could see their grades, as the original grades were kept in an Excel spreadsheet. It was not until the current semester that he decided to utilize the Blackboard grade book as the first source for entering grades. The training he received was provided by MCC, which consisted of 7–8 weeks of meeting once a week. During that training, Greg noted that he essentially learned the basics of Blackboard and honestly reflected that he does not remember the specifics from the training sessions. He admitted there will still be a learning curve for him because the group training was only about the basics; there was more to learn about Blackboard after his first training, and he will still struggle to use it because he is still a paper person.

Most of the challenges Greg faced in Blackboard included trying to figure out how to upload files, post pictures, upload lecture notes, and so on. He ran into technical difficulties, such as learning how to use the tools correctly, as he would often receive error messages because the document he was trying to upload was too large for Blackboard. Because he stuck within the tools that he knew, he really did not have any major problems using those, but at the same time, he never explored any of Blackboard's additional features.

Because Greg teaches biology courses, the courses consist of two parts: One is the lecture, and the second is the lab. He feels it is important for the students to get a hands-on approach during the labs, and he accomplishes this by taking the students on various

field trips. This allows the students to go outside and smell and touch nature, which helps connect them with the terms that they learn in the course's lecture portion. During the lecture portion, Greg utilizes PowerPoint presentations to help reiterate the terms and concepts within biology, and he creates lecture notes, outlines, and study guides for the students to use throughout the term. Greg has learned to take all this content and upload it to the Blackboard shell so the students have access to everything prior to the class meetings.

Some of the things that were focused on during the individualized training include how the course was set up within Blackboard and which tools were being utilized, and because this was the first semester that Greg used the grade book as the first source for grades, we looked at how it was set up and how it was being utilized. Because this was a new area for him, we focused the training on the grade book. We looked at how he could organize the grade book and how we could use weighted grades instead of doing everything manually at the end of each semester, which is what he has been doing.

Greg's takeaway from the training was positive. He liked the fact that the training was one-on-one and that the training focused on his specific content area. It gave him some insight as to how he could revise his Blackboard shell to give it a better flow for him and for his students, as well as how he could improve utilization of the grade book. He liked how the discussions were not solely based on Blackboard tools and how we talked about how the tools could help his content area and how he teaches the course. The training helped him view things differently, and he is looking forward to updating his course shell to a more modular form. He also realizes that he can copy the shell for future semesters and sees the benefit of investing the time up front, as it will save time later.

One of the biggest takeaways for Greg was that he realized it was okay to ask for help and to let someone else take over his course shell and make modifications that help him and his students. Overall, Greg felt the experience was very positive.

# Appendix N

## Textual and Structural Descriptions for Kim

*Textual Description of Kim's Experiences*

I learned how to use a computer in college. Probably in my junior and senior year, we used basic computer stuff, and from there, I learned more while working in the corporate world. While in college, I took a coding course, and there were also computer courses that covered office applications (older versions than today). When I took my first spreadsheets course, it was in Lotus 1-2-3, whereas today, we use Excel. Other than what I learned from college, most of my knowledge has come from the corporate world, with much of my knowledge being self-taught. I remember going to a few training sessions provided by my employer on the office applications, but I did not have much more training than that.

My career has been in the accounting field, which has spanned the last 20 years. In terms of academic teaching, this is my first semester in teaching business math and the basics of accounting to college students. While in the corporate world, I did a ton of teaching when I worked on teams. One of the things I taught was compensation for investment professionals. We would have a new compensation plan, and I would have to design the teaching material presented via PowerPoint, along with a Microsoft Word document, which was emailed out to the employees. Though I am just beginning my teaching career in academia, I have been doing corporate training for quite a few years.

Obviously, because this is my first semester teaching for Harper College, I do not have any prior knowledge of Blackboard, except seeing it from a couple of courses my husband took. This is my first introduction to using Blackboard in a classroom setting. Upon being hired by Harper College, I went through an initiation period where we discussed the school's policies and attended a Blackboard training session. The training session was called Blackboard Bootcamp and lasted for about 3–4 hours. During that session, I learned how to post announcements and how to update grades within the grade book.

I used Blackboard for quite a bit of the course, but the shell was previously set up for me, as it is connected to McGraw-Hill, which also preloaded the grade book. What I learned from the training was how to post announcements, but there are some additional assignments I would like to upload that I need to learn how to do. My use for now is hard to gauge because of the shell previously being set up for me and me just beginning my teaching career.

The challenges I have with Blackboard are trying to upload additional assignments, making changes to the existing assignments, or in learning what some of the additional tools that I can use are. I feel I'm pretty tech savvy, but realistically, this is all new to me, so I realize there are a lot of things I need to learn not only from the teaching perspective but from a classroom management perspective. For the most part, regarding any challenges I have run into at this point, I just reach out to a peer who is also teaching the same course and ask them how they fixed an issue or made changes to the core shell. I realized that if it were not for the course being connected to McGraw-Hill or the course

shell previously being preloaded for me, I would probably have quite a few issues when working within Blackboard.

I take the approach to teaching of the students need to not only read the material but they need to do it. They need to learn by example. A lot of the exercises I bring into the class are real-life examples from my experience in the corporate world. These examples help get the students to realize these are real-life examples and problems that need to be solved. When you look at the content area of business math and accounting, the field itself has changed a great deal from doing manual spreadsheets to utilizing computers to automate a lot of things. Therefore, I like to bring examples into the classroom to get the students to understand that it's more than just punching the numbers into the system; they need to make sure they are double checking all their answers as well. A lot of what we do in class is hands-on, real-life examples that include not only the math concepts but a little bit of Internet searching.

As mentioned before, I did not have any prior training on Blackboard before entering academia. For me, the training provided by Harper College was still fresh in my mind, and as I mentioned before, because the course shell was previously loaded for me, I've only been utilizing the basic Blackboard tools. I feel the individualized training really helped me, as I am new to the teaching world, as well as the technology and terminology. I think that the one-on-one teaching gave me some good suggestions and feedback that was not just technology-based but focused on teaching. I felt the group training was beneficial; because this was new to me, I could sit back and listen to other faculty members' questions, which gave me some good insights as to some things I could incorporate as well. I think there is a benefit to having a group class, because you do not

always get to hear the different sides or different perspectives from the individual training. This can be a plus, but I think there are pros and cons to both sides. I'm fortunate enough to have been able to participate in both. For me, the individualized training helped reinforce what was learned from the group training and allowed me to discuss what I wanted to do within the classroom and how I could go about making those changes.

Again, because I am new to this whole world of teaching, my views of Blackboard really have not changed, but I realize the longer I am here, the more I may want to incorporate new and different technologies. At least I've realized there are additional tools that could really help me and my students. Overall, the individualized training was perfect timing for me because I still had fresh memories from the group training, and I kept running into an issue where I wanted to incorporate a new assignment into the class, and I was not quite sure how to do it. This allowed me to take full advantage of the individualized training to learn how to add this new assignment, but overall, I think it helped me on all levels, because there are a lot of terminologies you must get used to in the teaching world that you never encounter in the corporate world. So, for me, it was a win–win situation and hopefully helped me go in the right direction for my teaching career.

*Structural Description of Kim's Experiences*

Kim's experience with computers started back when she was in college, where she took a basic computer course, and from there, her computer knowledge expanded in the corporate world. She has a decent amount of experience working with the office applications, as she started utilizing spreadsheets through Lotus 1-2-3. So, short of the

experience she gained while in college and short of what training was provided in the corporate world, she has, for the most part, improved upon that knowledge by being self-taught.

Kim is new to the teaching field; she just started working at Harper College during the current semester. Prior to teaching, she has 20 years of corporate experience in the accounting world. While in the corporate world, she did a lot of corporate training by creating the material any time a new plan came out to help explain the plan to other employees. An example of that would be her explaining a new compensation plan, for which she created the PowerPoint presentations or in Microsoft Word documents. The documents were then sent to the employees so they could review the material prior to the training session.

Because of the course that Kim is teaching, the school has created a partnership with McGraw-Hill, which has a plug-in for Blackboard. This plug-in automatically connects Blackboard to the McGraw-Hill learning studio, and as the students do their work in the "learning studio," grades are automatically transferred back to Blackboard. This has been beneficial for Kim, as it allows her to enter the world of academia and mainly focus on teaching the concepts without having to worry about setting up a Blackboard shell. There are some benefits to this, as it does relieve some new-teacher stress, but the downside is that she depends on McGraw-Hill for everything versus incorporating some of her own content.

Kim's approach to teaching is very much hands-on. She believes that not only should the students learn the concepts, they should do the concepts. She has brought into the classroom some real-life corporate examples to help further provide examples for the

students to work on. This helps emphasize the taught concepts, as these examples show the students that these problems truly do occur in the corporate world. While in the classroom, she utilizes the overhead projector, PowerPoint presentations, and any handouts that pertain to the examples she is discussing.

There are some additional assignments Kim would like to incorporate into Blackboard, and this is what causes some of the challenges for her. As noted, because the shell is preloaded and connected to McGraw-Hill, she does not have the knowledge to create a new assignment and connect it to the grade book. Kim realizes there are a lot of things she needs to learn from the technology perspective and from the teaching perspective.

Kim's view of the training at this point was that it was beneficial due to her being so new to teaching. She still had fresh knowledge of the group training provided by Harper College, which allowed her to get her course up and running, but as she ran into challenges, the individualized training helped her overcome those by creating custom assignments. She felt that the whole process was a win–win situation due to the timing from the group training and the individualized training, which put everything in perspective for her and helped her, as she was teaching her first semester. She realized there is a lot to learn from the technology side and from the terminology side of education, so the individualized training allowed her to go beyond Blackboard and talk about some teaching best practices as well. Overall, she felt it was an excellent experience, because the timing for her was perfect, and the structure gave her the knowledge she needed regarding including additional content to her course and feeling free to ask questions that addressed all aspects of teaching.

# Appendix O

## Composite Descriptions and Synthesis

*Composite Textual Description*

The computer skills and experience with computers were obtained by the participants through some formal training, but for the most part, participants were self-taught. For a few the participants, the training began while they were in college, where others learned a lot of their computer skills while working in the corporate world. Only a few mentioned taking courses to help further their computer skills. Out of the seven participants, only two felt they were sufficiently tech savvy to research and learn more about technology on their own. All other participants essentially stuck with what they knew, and if they did not know how to do something, they would reach out to technical support or peers for assistance.

Out of all the participants, only one graduated from college and went directly into academia. All others, upon obtaining their college degrees, entered the corporate world and then eventually transitioned to academia. On average for those who started off in the corporate world first, they had around 20 years of corporate experience and an average of 7 years of teaching experience. One participant who went directly into academia has been teaching for 20-plus years. This provides a wide range of not only corporate experience but teaching experience, considering one of the participants just left the corporate world and has begun her teaching career.

Because many of the participants worked in the corporate world prior to teaching, Blackboard use history focuses on the time they have been teaching. Most of the participants noted that when they first began teaching, they attended formal training on how to use Blackboard as a supplement to their face-to-face courses. Because this study addressed two different schools, the training time varied, as the participants from Harper College noted that their training sessions ranged from 1–4 hours, and the participants from MCC noted their training was once a week for 7–8 weeks. The participants at Harper College have been utilizing Blackboard for quite a few years, and the initial training was only one hour in length, yet during the past couple of years, the training has been revised to 3 or 4 hours. The participants from Harper College have more experience in using Blackboard in the classroom, whereas the participants from MCC have only been using Blackboard for a couple of years. The group training method for MCC was delivered via a different approach in that the participants met once a week for about an hour, and it spanned 7–8 weeks. Though the training methods were different in terms of what the training focused on and in length, all the participants noted that they did not feel they got what they needed out of the training. There was some consistency in the training, and they were all taught Blackboard's basics, such as posting announcements, uploading the syllabus, using basic grade book entry, and uploading documents to share with the students. The participants felt the personalized approach was missing from the training, such as where the training could have focused on their teaching style and their content area.

As mentioned by Lynn and Hannah, the training and MCC focused a lot on instructional design, and even though those techniques were important for participants to

incorporate into their Blackboard shells, it did not take into consideration their student population: students who were just entering college and starting their very first course. They felt that the techniques and recommendations given during the training over complicated the course, and as they tried to implement some of those techniques, they found it difficult to incorporate the design. They quickly realized that it was too difficult for the students as well.

Sally mentioned something similar from the training provided by Harper College: There was such an emphasis on using certain tools that she felt the training did not take into consideration how she wanted to teach the course. Sally also noted that during the group training sessions, others could quickly dominate the training with their very specific questions, many of which had no benefit to Sally or to how she wanted to design her course. So, she felt it took away from the time she could have used to learn tools that applied to her.

All the participants utilized Blackboard from a very basic perspective, with only one participant incorporating more than the standard tools. Pam was the only participant who went above the basic announcements, syllabus, grade book, and incorporated tools, using quizzes through the Blackboard shell. Everyone else took the knowledge they learned from the group training and did not go much further than that. Considering these are face-to-face courses, utilizing the basic tools is very beneficial to the instructor and to the student, but additional tools could make the environment much richer. Sally noted how she realizes there is more she can do in Blackboard but does not know how to accomplish those tasks. So instead of reaching out to someone to help her modify her course shell to incorporate those new tools, she chooses to not use them or to avoid them.

She realizes she should take the time to ask those questions, but it boils down to time in trying to work through those challenges versus teaching the course the way she knows it works.

Only a couple of participants noted that they had minimal challenges with Blackboard. They had a good background regarding how to use it, and they were comfortable in searching and learning how to use a new tool, whereas others were new to the teaching world. For the other participants, the challenges were consistent; specifically, there were some technical issues, participants did not know how to use certain tools, participants did not know how to set up the course shell (so it made sense to the students), or participants did not know how the shell related to the instructor's teaching style.

The approach to teaching was consistent in that most of the participants taught courses that had some form of hands-on activity that the students needed to accomplish. Many of the teaching sessions started with a PowerPoint presentation and then rolled into some form of activity that the students needed to complete. An example of this was noted by Kim, who mentioned starting off the class with a presentation to discuss terminology and concepts. Once the presentation was completed, Kim then handed out some form of an example assignment for the students to complete so they could apply the knowledge that was just discussed in the presentation. Then, the concepts were further emphasized by doing additional activities from the textbook, and in her case, from the McGraw-Hill learning studio.

Because the majority had the same approach to teaching, the approach or integration of Blackboard into their courses was also very similar. Many used PowerPoint

presentations, handouts, lecture notes, documents, and so on, which were uploaded into the Blackboard shell for student access. This allowed the students to review the content prior to the actual class meeting time, and if a student was unable to attend that class meeting, that student would still have access to all the notes. All the participants felt this was a good use of Blackboard; it was important to allow students to have access to all the documents that were not only presented during class but to handouts, notes, and so on. As noted before, only one participant took Blackboard utilization to the next level by having the students do their quizzes with Blackboard, compared to the quizzes being completed in paper form.

Another common tool used in Blackboard by all the participants was the grade book. The only difference in this use was in how it was specifically being used and when grades were being uploaded to the online grade book. As noted by Greg, this was the first semester where he was utilizing the grade book as the first source of grades; prior to the semester, he had been using an Excel spreadsheet to keep track of everything. He would then periodically transfer the grades from Excel to Blackboard, but realized this was creating additional work, so he attempted to use the grade book to its fullest potential. All other participants were using the grade book from the start, but those teaching courses that contained labs did not know how to incorporate the grade book for that portion of their course.

As discussed before, the faculty members' approach to teaching the lessons followed a very similar format. They would start the class off with a presentation by going over the terms for that lesson and then would transition to hands-on exercises.

Even though the participants' content areas were diverse, the structure of their lessons was very similar.

In looking at the different levels of Blackboard training the participants went through prior to the individualized training, the training methods were very similar in that they were in a group setting and focused on Blackboard's tools. MCC's training added the extra element of instructional design, but from the participants' perspective, it was still quite generalized regarding instructional design techniques. Harper's training purely focused on the tools, and any discussion of instructional design came from questions posed by others attending the training sessions. Neither of the training sessions focused on giving the participants a personalized approach to encompass all areas of teaching, such as the technical knowledge, pedagogical knowledge, and content knowledge.

The individualized training consisted of at least two personalized sessions with each participant, which ranged anywhere from one hour to 3 hours per session. During the sessions, Blackboard's tools were evaluated in regard to what participants were utilizing currently in their courses and which tools they wanted to learn more about. The sessions also looked at the core shells from instructional design perspective, which included discussions about the course design, its layout, looking at the design from the students' perspective, and how easy it was to navigate. As brought up by Sally, she gets frustrated when using Blackboard because she feels she must explain how to find everything within the Blackboard shell to students during part of the first class. The course design was looked at through the training process, and through this discussion, Sally came up with some ideas about how to change Blackboard so it had a better flow and would be much easier for students to find what they needed quickly. The

individualized training also focused on the content area and evaluated the course shell to ensure it aligned with what the students needed and what the participants were trying to convey. As noted by Lynn and Hannah, after attending MCC's training, they incorporated a fillable PDF document into their course shell for the students to complete. They did this based on the recommendations from the group training only to find that this was very difficult for the students to do, as many did not have the software to complete the assignment. Through the individualized training process, this assignment was changed to a Word document. This was only one of the changes that occurred, as a few other things in the course were modified, such as an assignment being changed from a journal entry to an actual assignment submission. During the training process, the participants could see the changes immediately, and both instructors felt these changes were positive not only on the students' end but on the faculty members' side. They could now provide much richer feedback to the students. The individualized training encompassed all the aspects of the TPACK model, which helped provide a customized approach for each participant because each participant's training sessions were unique.

After going through the individualized training, most of the participants noted that their view and use of Blackboard had changed, but only slightly; they saw the positives in utilizing Blackboard for their courses through creating a good shell for their students. Most of the participants were aware of how using Blackboard could be a good tool for the students and for the faculty members. The views of Blackboard itself did not necessarily change but did increase in terms of functionality and use of various tools of which the participants were unaware and did not know how to apply correctly. Three of the biggest perspectives that changed were the participants noting that they have more confidence in

using Blackboard, in asking questions when they do not know how to use something, and letting others help modify their core shell.

This change regarding their view of Blackboard was consistent with the overall view of the individual training, as all the participants noted that the training was a huge benefit. They liked the personalized touch, such has how the training not only focused on Blackboard tools but on their content areas and their teaching styles. As Greg noted, it helped him get over his fear of letting someone else into his course shell to evaluate its design and to change it. Ann noted she has more confidence in herself, enough to explore the various tools within Blackboard and to reach out to others to learn which tools could truly help her and her course.

Each participant sees the value and the benefit of utilizing Blackboard in class, and each participant came away from the individualized training with additional knowledge on how to use Blackboard to benefit their students and themselves. Getting past those fears of learning a new piece of technology was the biggest step in getting the participants to explore new ideas, new designs, and new tools. They did not have to worry about others taking over the training session because they were the only participant, and they could ask as many questions as they wanted and about any area (pedagogical, technical, instructional design content area).

*Composite Structural Description*

The participants of this study have a very diverse background in terms of the content areas in which they teach and experience academia. The participants' work history ranges from 30 years in the corporate world before transitioning to academia and one participant who never went into the corporate world who has been in academia for

20-plus years. Most of the participants learned how to utilize computers by being self-taught, a few even taking some basic courses while they were in college. Their past technical use has consisted of the basic classroom technological tools that have been used for many years, such as using PowerPoint, relying on overhead projectors, creating handouts, and writing on the whiteboard. These skills have been advanced over the years to incorporate Blackboard into classroom management but only at a rudimentary level. Most of the participants utilized Blackboard to post their notes, post PowerPoint presentations, use the announcement feature, and post grades in the online grade book. These tools were commonly used because they most commonly aligned with the participants' level of knowledge regarding Blackboard and how they were teaching their courses.

Most of the challenges discovered pertained to learning how to use additional tools and features within Blackboard. Only one of the participants was sufficiently tech savvy and sufficiently willing to explore and be assisted in learning how to use some of these new tools and features, whereas the rest of the participants only used the tools that they knew. The challenges also incorporated the time it would take to learn these new tools, how to use these new tools, and how to incorporate them into an existing classroom design.

Even working with participants from two different schools, the perception and views about the group training provided by each participant's respective school was the same. The participants felt the group training provided a very basic overview of how to use Blackboard, but was not sufficient for the participants to feel comfortable incorporating all the tools and features or, in some cases, some of the instructional design

components. It was surmised that the group training provided by the schools at least exposed the participants to the Blackboard environment, but the individualized training explained to why Blackboard's tools should be used for existing courses. All the participants felt that the individualized training helped them not only learn new tools within Blackboard but feel more confident in using those tools. Most of the participants immediately implemented some of the new tools from the individualized training or made slight modifications to their course design based on the training discussions. All the participants noted that they felt increased confidence in using the Blackboard system during their current courses and in future courses.

# Appendix P

## Synthesis

This textual–structural synthesis considers the TPACK framework's elements and how it supports the individualized training conducted in the study. This synthesis is from the perspective of an individual researcher describes the essence of the individualized training experience through the faculty members' voices.

The essence of the experience focuses on the TPACK framework's concepts, such as technological knowledge, content knowledge, and pedagogical knowledge. These concepts were utilized in the individualized training program's design and development not only from the interview guide design process but the actual training itself. Technological knowledge is important when developing a training program, as it is dependent upon the individual's previous training or how that individual can handle challenges with technology. Content knowledge focuses on the individual's decisions about the materials and or activities that the individual will do within the classroom setting. The last concept, pedagogical knowledge, considers the changes that could occur by learning new tools within Blackboard.

*Technological Knowledge*

The participants in the study had a very diverse background when it came to how they acquired the technology skills they had. Many of the participants acquired their knowledge by being self-taught and learning how to do things by trial and error. This was an important concept in developing the participants' individualized training plan because

as a trainer, you need to know how much of a foundation an individual currently has. Though one of the participants was very comfortable exploring and finding the answers and utilizing new tools and techniques in Blackboard, the rest of the participants were not comfortable finding the answers on their own. This knowledge was also important in trying to understand each participant's comfort level and computer self-efficacy, as this helped determine the approach for the technology training.

A lot of the technical challenges faced by the participants were in having the proper training for the tools; in some cases, there was a lack of access to computers, the different look and appearance of computers, and how to make all these tools work together. Even though the group training provided a decent foundation of Blackboard's basics, it did not go any further than the basics or allow sufficient time in the training sessions for the participants to practice using the tools they were being taught. This lack of time and lack of proper training caused some of the participants to stick with only the things they knew how to use. Some of the participants noted having a lack of access to computers, as they either did not have a personal computer to use or did not have access to the computers on campus, as not all classrooms have computers in them. This also plays into the challenge some noted regarding the appearance of the computers' graphical user interface.

Some noted that while attending the group training session, the operating system and Blackboard's appearances were different than what they had either on their personal computer or a computer at the campus for faculty use. These slight changes in the appearance can cause some confusion and delay the learning process, whereas teaching someone how to use the tools in the environment in which they are comfortable can

increase the learning process. When you look at these changes in general, you can see how it adds to the level of frustration for individuals trying to implement and utilize what they have learned. So, when you take these challenges and you combine them, you can see where individuals do not realize or understand how they can use the tools that are being taught.

Each of these challenges, individually, would not appear to be the root cause of not utilizing the technology to its fullest, but when you put all these challenges together, you can see how they provide additional hurdles that an individual must conquer. The more hurdles an individual faces, the more that individual will avoid challenging them. By taking into consideration each of these challenges and incorporating them into the individualized training plan, the participants overcame these challenges. The training addressed each challenge each participant faced, as part of the training program was to overcome those challenges. The longer the training went on and the more time participants spent working in Blackboard, the more they asked questions about how to do certain things and the more they became comfortable and confident in learning about Blackboard. By looking into and addressing the participants' existing technological knowledge and challenges, the more it helped and enabled them to see how technology could work with their specific content area.

*Content Knowledge*

Content knowledge is another concept of the TPACK framework that was incorporated into the individualized training for this study. Content knowledge focuses on the participants' area of expertise; each of the participants in the study had a very strong content background. Whether they began in the corporate world or went right into

academia, all the participants had been working in their content areas all their adult lives. Having a strong foundation with such content knowledge helps an individual determine what they feel is the best approach in teaching that content. This was also shown through the initial interview process, as some of the participants could see a link between the content knowledge and which tools could be used to best express those learning objectives.

The link between content knowledge and the technological tools is an important aspect for faculty members to utilize technological tools in their classroom design. As some of the participants noted through their interviews, some of the tools were suggested by either other faculty members or through the group training they initially attended. Most of the time, recommendations regarding which tools to use can be very helpful, but for people learning how to incorporate technology into their classrooms, those recommendations may not be aligned with that individual's content area or specialty. This can cause some confusion because the individuals are trying to make a tool work when it does not work well for that specific content. Therefore, it is important to take the time to understand the individual's content and that individual's approach to teaching that content and to use that information to determine the best tools that align with the new information. With the proper alignment of content and technology, you will get increased technology utilization in the classroom.

*Pedagogical Knowledge*

Pedagogical knowledge is the other concept within the TPACK framework that was addressed in this research. Pedagogical knowledge focuses on the faculty members'

knowledge about how teaching the content is important to the learning process and what strategies one uses to get that knowledge across to the students.

Even though all the participants had different content areas, their pedagogical approach was very similar. It was interesting to note that the majority felt the best approach to teaching their content area was in teaching by example. They felt it was best to give the students some form of an example in the classroom and then have the students repeat a similar example either during the class or outside of class. They felt this was the best approach to reinforce the concepts and ideas taught through that lesson. The pedagogical approach was also important to the individualized training program, as the researcher needed to understand the faculty members' teaching methods to determine what the best tools for each person to use were. Just as we would like to align technology and content, we want to align technology with their pedagogical approach.

By understanding the connection between these three concepts, you can see how an individualized training that incorporates these concepts into its design can help faculty members get more out of Blackboard than what they currently use. The phenomenon that was researched was to understand how in-service faculty members experience the individualized training and to use this method to teach faculty members how to use more technology and Blackboard tools in their courses. The connection between the concepts helped create a truly individualized training program that met each participant's needs, which resulted in an increase in technology use. Even though higher education institutions provide training on the various tools that faculty members can use, that training does not provide the results that most of the institutions would like. If more institutions would utilize these concepts, including the TPACK framework, there would

be a significant increase in faculty members utilizing the tools within their classroom because they will have not only the knowledge to utilize those tools but the confidence to do so. As noted by a few of the participants of this study, they now have a level of confidence that they did not have prior to the individualized training, which is a success in itself and a realization that there are still barriers that need to be overcome with existing in-service faculty members.

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