Faculty Perceptions of Readiness and Confidence for Teaching Online: An Evaluation of Online Professional Development

Kevin Brent Forman

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FACULTY PERCEPTIONS OF READINESS AND CONFIDENCE FOR TEACHING ONLINE: AN EVALUATION OF ONLINE PROFESSIONAL DEVELOPMENT

By

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Submitted in Partial Fulfillment of the Requirements
For the Degree of Doctor of Education in
Educational Practice and Innovation
College of Education
University of South Carolina
2023

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DEDICATION

To Marian: Though our time together was brief and you have left this terrestrial existence behind, your enthusiasm for teaching and learning has always motivated me to keep reaching for something better.

To Cameron: Your genuine interest in my doctoral studies and ability to converse so fluently and passionately about the scholarship of teaching and learning inspired and supported me throughout this journey. You are a consummate scholar, a true intellectual, and I am so eternally grateful for your friendship.

To my family: From you, I inherited a lifelong passion for learning. I truly believe that pursuing this doctorate was written in the stars. I have become the educator I am today because of your existence, your encouragement, and by nature and nurture, your guidance.

To all of my friends, colleagues and cohorts: Your social media “likes,” “loves,” “cares” and “hugs,” emoticons, comments and conversations lifted me up and encouraged me every step of the way.

Finally, to Shamus: You more than anyone, have endured this journey alongside me, and you have always been my biggest cheerleader. My incessant ramblings about problems of practice, research paradigms, and citation slipups have come to an end. I cannot thank you enough for being so supportive, loving, patient and understanding. You are the greatest partner ever, and I am so excited to continue our life journey together. Cheers to new adventures ahead.
ACKNOWLEDGEMENTS

Thank you, Dr. Kolski for always being so patient, thoroughly helpful, always kind, ever so encouraging, and for offering such wonderful guidance and optimism throughout this doctorate program. I really looked forward to our weekly meetings, and I truly felt that you “had my back” because you always gave me the benefit of the doubt. You made the dissertation writing process enjoyable, and broke each task down into manageable actions I could complete while working full time. Even though some tasks seemed insurmountable, you managed to infuse a “you can do this” positive attitude, and it always motivated me to keep trucking along. Thank you for your support and for helping me stay focused and move forward every step of the way. I cannot imagine having completed this doctorate journey with your tutelage. I am truly grateful to have worked so closely with you over the past few years. Thank you so much!
Abstract

Regardless of how prepared faculty were to teach online classes, the COVID-19 pandemic forced leaders of universities and colleges and faculty nationwide to pivot to emergency remote teaching and forced students to take online classes. To prepare faculty for the shift to online instruction, administrators in colleges and universities provided resources, such as online trainings, to orient less experienced instructors to principles of online education. The Online Pedagogy Program (OPP) at Midwest Community College was developed quickly in response to the need for urgent training in effective online instruction. After 300 faculty completed the training, an evaluation of the Online Pedagogy Program content and delivery was needed. The purpose of this action research was to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College. To formally evaluate the program, this study focused on the following research questions. What are Midwest Community College faculty perceptions about the quality of the Online Pedagogy Program? What are Midwest Community College faculty perceptions about their readiness to teach online after completing the Online Pedagogy Program? What are Midwest Community College faculty perceptions about their confidence to teach online after completing the Online Pedagogy Program? Using an action research mixed methods design, data was collected using the Faculty Readiness to Teach Online (FRTO) instrument, the Technological Pedagogical and Content Knowledge (TPACK) instrument, the Online Pedagogy Program End-of-Course Evaluation, and semi-
structured individual interviews to support the three research questions. The results of the quantitative and qualitative data analysis methods converged to reveal faculty perspectives about readiness and confidence to teach online after completing the Online Pedagogy Program. Semi-structured individual interviews with faculty who completed the Online Pedagogy Program also provided feedback regarding how the design of the program and its delivery could change to improve the instructor’s readiness and confidence for teaching online. Among the many findings, the findings show that experiencing the online pedagogy training from a student perspective accentuated the faculty’s awareness in creating inclusive and community strong courses centered on the Community of Inquiry framework. These outcomes were shared with Midwest Community College stakeholders along with six recommendations. How this research is beneficial in the field of professional development program evaluation is offered.

Keywords: Higher Education, Faculty Training, Instructional Design, Digital Learning, Centers for Teaching and Learning, and Program Evaluation
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CHAPTER 1
INTRODUCTION

National Context

In the first decades of the 21st century, there has been extraordinary growth in distance education in colleges and universities nationwide (Kentnor, 2015; Mohabir-Mckinley, 2020; Ortagus, 2017). The National Center for Educational Statistics (NCES, 2019) reports 6.9 million students were enrolled in online courses at degree-granting postsecondary institutions in Fall 2018. Between 2012 and 2019, the number of students taking at least one online class increased from 5.4 to 7.4 million students and 89.5% of undergraduate students and 70.6% of graduate students took at least one on-campus course in 2019 (Seaman & Seaman, 2019).

Before the COVID 19 pandemic in March 2020, the degree to which colleges and universities offered online education was closely connected to institutional philosophy about online education. Out of concern that offering best-quality online learning experiences was more challenging than face-to-face learning experiences, some leaders of institutions made only modest investments in online instruction (Cox, 2005; Martins & Nunes, 2016). However, regardless of how prepared faculty were to teach online classes, the COVID-19 pandemic forced leaders of universities and colleges and faculty nationwide to pivot to emergency remote teaching and forced students to take online classes (Hodges, Moore, Lockee, Trust, & Bond, 2020). During the initial weeks of the pandemic, more than 4,000 public and private colleges and universities had to prepare to
deliver distant education to approximately 20 million students while also preparing faculty to adapt to a new mode of teaching and learning (Legon & Garrett, 2021). The leaders of institutions and faculty who had been slow to embrace online instruction had limited time to plan, prepare, train, provide, and receive pedagogical and technological support for faculty (Hart, Alonso, Xu, & Hill, 2021; Hosny et al., 2021).

With student enrollment increasing in at least one online course each year, online degree programs continuing to rise (Jaggars & Xu, 2016), and the pandemic contributing to an increase in online enrollment (Legon & Garrett, 2021) postsecondary institutions are under scrutiny to design high quality online classes that are delivered by faculty who are well versed in 21st century digital teaching competencies (Allen & Seaman, 2013; Bonk & Kim, 2006; Kentnor, 2015; Mohabir-Mckinley, 2020; Molony & Oakley, 2010). As the number of online students continues to scale up, leaders of colleges and universities rely heavily on adjunct faculty to carry the academic teaching load (Chun & Iwamoto, 2019; Felber, 2020). Between the years of 1999 and 2018, the total number of higher education faculty increased by 49 percent (U.S. Department of Education, 2022). Adjunct faculty numbers increased to 72 percent between 1999 and 2011 (U.S. Department of Education, 2022) the year in which part-time faculty exceeded full-time faculty (Watson, Tregaskis, Gedikli, Vaughn, & Semkina, 2018). Over 70 percent of higher education faculty in the United States serve in adjunct positions (Chun & Iwamoto, 2019; Shattuck & Anderson, 2013). Survey results from the Center for Community College Faculty Survey of Student Engagement (CCFSSE) paint a similar picture of the faculty landscape at community colleges nationwide. According to this survey, 61 percent of faculty surveyed were not in tenure positions (CCFSSE, 2021).
Similar to the increase of students enrolled in online education and the number of adjunct faculty nationwide, the field of faculty professional development has also experienced considerable growth in the past 10 years (Mohr & Shelton, 2017; Steinert et al., 2016). Faculty professional development opportunities in postsecondary institutions are traditionally offered through centers that provide pedagogical training to improve instructional strategies and promote teaching excellence (Grant, 2004). Specialists, such as Instructional Designers, provide support in instructional design & technology integration and support faculty through a variety of modalities, including face-to-face workshops, one-on-one consultations, hybrid formats, asynchronous training models, and self-paced tutorials (German, 2015; Schmid, Bajcz, & Balster, 2021; Steinert et al., 2016).

As reported in the Changing Landscape of Online Education project report (Garrett, Legon, Fredericksen, & Simunich, 2020), most institutions surveyed (N=422), focus attention on faculty development for online teaching, including design of online classes and how to use technology and tools to create high quality courses in a post-pandemic educational landscape (Legon & Garrett, 2021). The findings demonstrate a commitment to quality online education, and an intention to incorporate increased online offerings as part of their intentional institutional strategy moving beyond pandemic related emergency remote teaching.

Notwithstanding an increased attention universities and colleges have placed on faculty professional development in recent years, a limited body of research exists regarding how higher education institutions have developed effective professional development to support evidence-based teaching practices for faculty who teach online
Only 14% of Centers for Teaching and Learning share their evaluation findings with other institutions (Kolomitro & Anstey, 2017). In a longitudinal study conducted at the University of Washington and Carlton College, researchers found that students of faculty who participated in five professional development trainings averaged 58% higher in critical thinking compared to students of faculty who had only participated in two trainings (Condon, Iverson, Manduca, Rutz, & Willett, 2016). While this evidence suggests a possible positive connection between professional development and student learning, it remains difficult to draw clear conclusions that faculty participation in professional development increases student learning (Schmid et al., 2021). Insufficient evidence shows that faculty development strengthens teaching effectiveness and student learning (Condon et al., 2016; Haras, Taylor, Sorcinelli, & von Hoene, 2017). Nevertheless, research indicates that faculty confidence increases after participating in faculty training workshops, and this may motivate teachers to create positive changes in teaching practice, resulting in an increase in students’ learning (Borup & Evmenova, 2019; Moore, Haviland, Moore, & Tran, 2016; Piryani, Dhungana, Piryani, & Neupane, 2018).

For these reasons, it is important that administrators in higher education and leaders of Centers for Teaching and Learning evaluate faculty professional development programs to learn about participants’ reaction to the training. Doing so will help the administration and leaders of Centers for Teaching and Learning identify effective components of training to improve the program, making faculty more confident in their teaching methods, especially regarding online pedagogy.
Local Context

The setting for this study is Midwest Community College, a public, two-year college located in the Chicagoland area. The college serves 9,716 students and employs 97 full-time faculty, and 451 adjunct faculty (Office of Research and Institutional Effectiveness, 2021). The Online Pedagogy Program was designed in 2020 as a response to the sudden shift to 100% emergency remote teaching due to COVID-19. The goal of the self-paced training was to provide faculty at the institution with immediate skills needed to transition to online teaching. All faculty, including new hires, adjunct, full-time and tenure instructors, were required to complete the training.

The Online Pedagogy Program is facilitated by three instructors who teach for different colleges, and me, the sole Instructional Designer at Midwest Community College. The goal of the Online Pedagogy Program is to develop a measurable level of knowledge and pedagogy growth related to the delivery of distance education. The training is required for all faculty to be eligible to teach at Midwest Community College, regardless of teaching modality, and must be completed within two semesters from date of hire. The Online Pedagogy Program is accepted as an alternative to the Illinois Online Network Master Online Teaching certification, which is otherwise required to teach online courses at Midwest Community College. The program is offered to faculty through the Center for Teaching Excellence as a fully online course.

Statement of Problem

To date, 300 faculty have completed the Online Pedagogy Program. However, the program has not been formally evaluated to determine faculty perceptions about online pedagogy confidence and their readiness and confidence to teach in digital
environments after having successfully completed the Online Pedagogy Program. As the immediate effects of the pandemic wane and the program shifts from emergency remote teaching preparedness into a permanent training program grounded in evidence-based practices of online teaching, faculty perspectives are needed to help shape future iterations of professional development program design. With the Midwest Community College administration’s commitment to accelerating online course offerings, evaluating faculty perceptions about preparedness and confidence in teaching online after completing the Online Pedagogy Program becomes critical if the administration wants to attract, retain, and grow their online learning offerings for students.

**Purpose Statement**

The purpose of this action research is to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College.

**Research Questions**

This study will focus on the following research questions:

1. What are Midwest Community College faculty perceptions about the quality of the Online Pedagogy Program?

2. What are Midwest Community College faculty perceptions about their readiness to teach online after completing the Online Pedagogy Program?

3. What are Midwest Community College faculty perceptions about their confidence to teach online after completing the Online Pedagogy Program?
**Statement of Research Subjectivities and Positionality**

My subjectivity as a researcher is present throughout the entire research process, and my personal attributes, whether I am aware of them or not, intersect with the group I am researching (Peshkin, 1988). By examining my positionality, subjectivity, and reflexivity, I investigate how my beliefs and biases impact my research. This reflective, self-inquiry is imperative for rigorous, action research (Arslan-Ari, Ari, Grant, & Morris, 2018).

As I prepare to begin qualitative dominant, mixed methods action research, I cannot divorce myself from my belief that meaning is culturally defined. My research paradigm is interpretivist with leanings towards the pragmatic worldview because reality is socially constructed by all people involved in the research process, including my own (Mertens, 2020). The interpretivist worldview looks for these complexities. This paradigm encourages me to understand viewpoints and experiences of my research group by acknowledging that my values and ideas cannot be separated from my final research product (Mertens, 2020). The interpretivist paradigm allows me to recognize that knowledge is subjective and not separate from the knower (Freies & Onwuegwuzie, 2013). A pragmatist epistemology allows my participants and other stakeholders’ interpretations of reality to be part of the research process (Arslan-Ari et al., 2018). Pragmatism applies to mixed-methods research because researchers use both qualitative and quantitative data and incorporate multiple methods, various worldviews, and different forms of data collection and analysis (Mertens & Wilson, 2019).

As an Instructional Designer, I am an insider to the field of distance education and to the community college population I serve. I am deeply committed to digital teaching
and learning, and am gaining familiarity with the culture of my school, my department, and the demographic of faculty I serve. I am also a very reflective person and my action research is an opportunity to study my own practice as an educator (Herr & Anderson, 2012). The benefit of being an insider is that my research participants may be more likely to share their experiences because they accept me as part of their community (Keaveney, 2020). The use of digital technology for training purposes also strengthens insider connections with my participants. My research subjects understand I am studying the community in which I am a part of and wish to improve. However, the notion of the space between insider versus outsider status often challenges these clear-cut dichotomies (Keaveney, 2020).

In negotiating my positionality, I acknowledge that from my participants’ points of view, I may be viewed as an outsider because of my role as an administrator and not that of an instructor. One way to remain cognizant of my positionality and subjectivity is by conducting a subjectivity audit, meaning I can keep a journal to document my feelings and reactions as I conduct my research (Peshkin, 1988).

My educational background, teacher training experience, and career as an instructor and faculty developer has always centered around diversity, explored interdisciplinary connections, and emphasized how multiple identities and realities shape the human experience in equally important ways (Desimone, 2009; Lincoln, Lynham & Guba, 2011; Herr & Anderson, 2012). I understand that these values are simultaneously my biases. As an Instructional Designer I believe my role in training faculty and helping them to design online learning experiences is that of a facilitator, one who must guide faculty-learners to help them discover their own ideas and opinions about online course
design. I must be able to navigate times when I may need to lead and direct with times I must listen and let others speak. Through instructional design and learner centered practices, faculty-learners are in control of their learning and are empowered to explore topics that are relevant to their courses and course design preferences (Brown, 2016; Elliott, Rhoades, Jackson, & Mandernach, 2015; McMurry, 2013). As an action researcher, I hope to bring these beliefs to my research process. Based on participants and stakeholders’ perspectives, I aim to learn more about how technology enhanced inquiry impacts faculty’ perceptions about teaching in a digital environment. Through a collaborative research process and sharing of findings, I hope to simultaneously strengthen my own educational practice and the community of educators to which I belong.

**Definition of Terms**

*Andragogy/Adult learning theory:* The art and science of helping adults learn, in contrast to pedagogy, which is the art and science of teaching children (Knowles, 1980). Andragogy is a set of assumptions about adult learning, and it offers guidelines for practice. One of the assumptions underlying andragogy is that an adult has an independent self-concept and becomes increasingly self-directed as they learn (Merriam, 2004).

*Faculty readiness:* Martin, Budhrani, Kumar, and Ritzhaupt (2019) defined faculty readiness to teach online as a state of faculty preparation for online teaching. The researchers distinguish between two components of readiness. The first component of readiness is related to faculty attitude about the importance of teaching online. Attitude refers to a person’s point of view about the relevancy of technology and teaching,
perspectives about online teaching competencies, such as facilitating interaction (Denis, Watland, Pirotte, & Verday, 2004), assessing learning, and perspectives about pedagogical roles of an online instructor. Attitude also refers to managerial aspects of online teaching, such as maintenance of online classes, and staying up-to-date about subject matter taught (Darabi, Sikorski, & Harvey, 2006; Denis et al., 2004).

**Faculty confidence:** Lee and Tsai (2010) defined faculty perceptions about their confidence (ability) to teach online as how faculty perceive their own competence using instructional strategies for teaching effectiveness. Studies reveal that faculty have low ability regarding technological resources and high ability regarding course alignment (Northcote, Gosselin, & Reynaud, 2015; Wallace, 2004). Results from other studies related to perceptions of ability and importance for online competencies related to technology use and online education show that faculty have high perceptions of online teaching competencies but low perceptions of ability regarding the competencies (Aydin, 2005; Northcote et al., 2015).

**Online learning:** Online learning is defined as “learning experienced through the internet in an asynchronous environment where students engage with instructors and fellow students at a time of their convenience and do not need to be co-present online or in a physical space” (Singh & Thurman, 2019, p. 302).

**Online teaching competencies:** Bigatel, Ragan, Kennan, May, and Redmond (2012) identified online teaching behaviors of effective online instructors. They categorized the responses into seven competencies to include (1) active learning, (2) administration/leadership, (3) active teaching/responsiveness, (4) multimedia technology, (5) classroom decorum, (6) technological competence, and (7) policy enforcement
(Bigatel et al., 2012). Course design is another online teaching competence identified in a meta-analysis study by Thomas and Graham (2019). For the purposes of this study, online teaching competence includes (1) course design, (2) active learning, (3) active teaching/responsiveness, (4) multimedia technology, and (5) technological competence.

**Professional development:** In an educational context, professional development refers to programs that seek to change the classroom practices of teachers, change their attitudes and beliefs, and change the learning outcomes of students (Guskey, 2003).

**Program evaluation:** Program evaluation refers to the thoughtful process of focusing on questions and topics of concern, collecting appropriate information, and then analyzing and interpreting the information for a specific use and purpose (Taylor-Powell, Steele, & Douglah, 1996). The program evaluation model of Kirkpatrick introduced in 1959 underpins the Online Pedagogy Program evaluation of this study.

**Training:** Somasundaram and Egan (2004) explored the literature from 1962 to 2002 and identified that the major categories used to define training include developing or gaining knowledge, developing or gaining skills, improving performance, or improving organizational efficiency.
CHAPTER 2
LITERATURE REVIEW

There has been phenomenal growth in online education in the past decade (Martin et al., 2019; Mellieon, & Robinson, 2021). The global COVID-19 pandemic in March 2020 compounded this growth and forced leaders of academic institutions and faculty to make unexpected and extensive shifts to emergency remote teaching (Bozkurt & Sharma, 2020; Cutri, Mena, & Whiting, 2020). Not only did many faculty have to adjust immediately to a new modality of teaching, but they did so with little or no training regarding online pedagogy, and despite having little or no interest in online teaching (Hechinger & Lorin, 2020; McMurtrie, 2020; Redstone & Luo, 2021). As the immediacy of emergency remote teaching due to the pandemic fades, there remains strong indication that online education will continue to grow in the future (Berry, 2019; Bollinger & Halupa, 2021). Because of this, leaders of colleges and universities are under more pressure to develop initiatives that support and train faculty in digital teaching methods so that they can deliver quality online classes and even entire online programs to a new generation of 21st century learners.

While faculty are subject matter experts in their respective fields, they often do not have the requisite skills to teach in online environments and were not prepared to be thrust into an emergency remote teaching environment that was caused by the COVID-19 pandemic (Kessler et al., 2020; Lee, Soleimani, & Harmon, 2021; Redstone & Luo, 2021; Safi, Wenzel, & Spalding, 2020; Tsai et al., 2020). To meet the demand for highly
skilled online faculty, faculty professional development plays a significant role. Faculty professional development programs are multidimensional in design and in delivery, and methods used to deliver them impact faculty perceptions about online teaching. Higher education settings need evaluation strategies that can objectively and subjectively measure faculty perspectives about readiness and confidence to teach online.

At Midwest Community College, the Center for Teaching Excellence offers the Online Pedagogy Program to train faculty to teach online. The program was designed in Spring 2020 as a response to the sudden shift to 100% emergency remote teaching due to COVID-19. The goal of the self-paced training was to provide faculty at the institution with immediate skills needed to transition to online teaching. To date, 300 faculty have completed the program. All faculty, including new hires, adjunct, and full-time instructors, are required to be fully online trained and will be unable to receive any course assignment until they have completed the training. However, the training has not been formally evaluated to measure faculty perceptions about readiness and confidence to teach online or the extent to which faculty perceived that the content in the training adequately prepared them to teach online. Faculty perspectives are necessary as the program moves away from emergency remote teaching preparedness into a permanent, online faculty training program designed to train faculty in best practices of online teaching methodology.

The purpose of this action research is to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College. This study will focus on the following research questions: What are Midwest Community College faculty perceptions about the
quality of the Online Pedagogy Program? What are Midwest Community College faculty perceptions about their readiness to teach online after completing the Online Pedagogy Program? What are Midwest Community College faculty perceptions about their confidence to teach online after completing the Online Pedagogy Program?

The literature was examined using a variety of electronic databases, such as ProQuest Dissertations and Thesis Global, EBSCO Host, Education Source, ERIC, Google Scholar, JSTOR, and ProQuest. Keyword search terms included adult learning, online faculty training, faculty perceptions, professional development, program evaluation, higher education, and community college faculty training. Results were filtered to include peer-reviewed articles and studies published in English. With these parameters established, the search results included dissertations, peer-reviewed studies, and journal articles that were used to build a framework to answer the research questions.

This literature review chapter is organized into four sections. The first section provides a general overview of the growth of online learning, and then connects this growth to higher education. The next section discusses faculty professional development in higher education, and presents methods used to deliver and evaluate faculty professional development training. Following that, a theoretical framework for professional development is presented. The literature review concludes by discussing two models that are widely used to evaluate professional development programs.

**Growth of Online Learning in Higher Education**

This section of the literature review focuses on the growth of online education in higher education, and how the definition of online learning has evolved in the past 30 years due to technological advancement. The growth of online learning in higher
education and what this means for faculty development is then discussed. This section concludes by pointing out how leaders in colleges and universities are responding to the need for faculty professional development.

The NCES reports 6.9 million students were enrolled in online courses at degree-granting postsecondary institutions in Fall 2018 (NCES, 2019). With an estimated five to seven million students enrolling in at least one online course each year (Jaggars & Xu, 2016), and enrollment in online degree programs continuing to increase, postsecondary institutions are under scrutiny to design online classes that deliver the highest quality education to 21st century learners (Allen & Seaman, 2017; Bonk & Kim, 2006; Kentnor, 2015; Molony & Oakley, 2010).

In the past decade, there has been enormous growth in online classes. Allen and Seaman (2017) contend that about six million students took at least one online course in colleges and universities in 2015, whereas only 1.6 million did so in 2002. Because of this increase, more faculty who are trained in online teaching practices are needed. While face-to-face teaching skills inform online practices to a certain extent, teaching online requires additional skills that do not transfer from traditional on-ground classes (Brown, Toussaint, & Lewis, 2018). More research is needed to explore the additional competencies an online instructor must possess to reach 21st century learners (Martin et al., 2019).

**Defining Online Learning in Higher Education**

Online learning has evolved and grown considerably in all educational levels since the 1980s (Allen & Seaman, 2017; Gemin & Pape, 2016). Correspondence courses that were completed through the U.S. Postal Service have given way to a new era of
learning that has emerged due to advances in communication and technology (Moore, Dickson-Deane, & Galyen, 2011). With no sign of technological and communication tools development slowing down, practitioners and researchers seek consistent use of terminology as the field continues to expand.

Definitions of online learning have evolved as technology has changed throughout the years (Moore et al., 2011). Some practitioners reference the technological medium or context in which it is used (Lowenthal, Wilson, & Parrish, 2009), whereas others define online learning as having access to learning experiences using technology (Moore et al., 2011). Singh and Thurman (2019) conducted a longitudinal study to examine how definitions have matured in online learning from 1988 to 2018. The researchers show that the essential elements in all the definitions are the use of technology, a time element to differentiate between synchronous or asynchronous learning, and many synonymous terms and duplication of concepts, such as e-learning, web-based education, and online education. They define online learning as “learning experienced through the internet in an asynchronous environment where students engage with instructors and fellow students at a time of their convenience and do not need to be co-present online or in a physical space” (Singh & Thurman, 2019, p. 302). Ally (2008) defines online learning as web enabled interaction between students and the instructor to facilitate growth throughout the learning experience, as stated by Martin et al. (2019).

**Faculty Professional Development in Higher Education**

Online education will continue to grow in the imaginable future (Frazer, Sullivan, Weatherspoon, & Hussey, 2017; Mellieon, & Robinson, 2021; Ortagus, 2017). The “explosive growth” (Martin et al., 2019, p. 184) of online learning in higher education
has placed more pressure on universities to not only hire faculty who can teach online, but also train faculty to teach in digital environments to ensure students are being taught by faculty trained in online pedagogy (Borup & Evmenova, 2019). A perception in the online learning environment is that faculty support students by assuming the role of a facilitator (Palloff & Pratt, 2001). In reality, effective online educators teach their learners with the same proficiency as their face-to-face counterparts, but teaching online is significantly different from face-to-face classrooms (Elliot et al., 2015). To be masters of their online pedagogy trade, faculty need training in course facilitation, how to operate a learning management system, use web-based tools, foster a sense of community, and how to design courses to engage learners in the online environment (Berry, 2019; Chen, Lowenthal, Bauer, Heaps, & Nielsen, 2017; Martin et al., 2019; McGee, Windes, & Torres, 2017).

Bearing in mind that a great number of faculty members are subject matter experts and lack professional development regarding online teaching, they may not have the skills to create the most successful online learning environments (Meskill & Anthony, 2007). Faculty are inclined to teach in the same way that they were taught, and because many instructors who teach online have never taken an online class, they do not have a point of reference for online teaching (Redmond, Abawi, Brown, Henderson, & Heffernan, 2018). Research has established that teaching in a digital environment demands different capabilities than in a brick-and-mortar environment (Barbour, 2012). Teacher readiness programs have not been able to keep up with the increased need, and few preservice faculty complete courses that will train them to become effective online teachers.
As more institutions of higher education develop online learning in accordance with increased demand and students’ needs, it becomes necessary to deliver effective faculty professional development options that introduce online methodologies (Vaill & Testori, 2012). Faculty professional development has become a principal area of concentration due to the sustained increase of online education (Herman, 2012). Colleges and universities are responding to this growth by designing new organizational structures, such as Centers for Teaching Excellence, to train faculty to keep up with the increased demand for digital learning (Moloney & Oakley, 2010).

Due to the growth of online learning, colleges and universities need faculty who can competently teach online (Leary, Dopp, Turley, Cheney, Simmons, Graham & Hatch, 2020). Leaders in institutions of higher education and faculty bear the responsibility for creating an online classroom environment that is welcoming to an increasingly diverse population of students. In a study that surveyed teachers’ pedagogical beliefs and online teaching practices, Owens (2015) reports a statistically significant gap between the two variables. Owens’ findings suggest online learning environments are infrequently used successfully to encourage student learning. If faculty can understand how teaching practices impact students’ success, universities will be better positioned to support the rapidly increasing and changing demographic of online students (Caruth, 2014; Chen, 2014; Jacobs & Hundley, 2010; Vella, 2007).

Professional development plays a key role in developing and constructing teachers’ knowledge, confidence, and self-efficacy (Moore et al., 2016). Professional development influences faculty’s individual qualities and abilities to teach, as well as students’ learning outcomes. In broad terms, the goal of professional development is to
advance the quality of instruction to improve student outcomes (Milan, as stated in Canuel, 2016). Centers of Teaching Excellence within colleges and universities are often the first places faculty begin to develop and refine online teaching competencies. Research illustrates that while Faculty Development Centers, or Centers for Teaching Excellence, are the catalysts for professional development in higher education, the methods used for training can vary significantly (Grant, 2004).

Defining faculty professional development can be difficult because of the many ways it can be structured, and researchers have not been successful in defining it in meaningful terms (Sancar, Atal, & Deryakulu, 2021). Faculty professional development refers to learning opportunities available for faculty that are offered throughout the semester on a regular basis (Hromalik, Myhill, & Carr, 2020). Some professional development definitions emphasize that student outcomes and achievements are related to an effective professional development process (Desimone, 2009; Desimone, Porter, Garet, Yoon, & Birman, 2002; Timperley, Wilson, Barrar, & Fung, 2007).

Faculty professional development programs are multifaceted in design and in delivery. As a result, their definitions are equally complex. In a general sense, and regardless of face-to-face, hybrid, or asynchronous online delivery, faculty professional development can be defined as the practice of increasing competence by remaining up to date in a discipline (Hahs-Vaughn, Zygouris-Coe, & Fiedler, 2007).

Methods for delivering professional development vary and can include workshops of varying lengths, seminars, and conferences that also range in length (Desimone, 2009). Definitions in the literature reflect broad or narrow views, and therefore it is important to be specific about what faculty professional development embodies (Merchie, Tuytens,
Devos, & Vanderlinde, 2018). Killion (2017) defines professional development as the process of learning among educators. In the educational context of this study, faculty professional development refers to programs that seek to change the classroom practices of teachers, change their attitudes and beliefs, and change the learning outcomes of students (Guskey, 2003).

**Methods of Faculty Professional Development**

This section of the literature review discusses methods used to deliver faculty professional development programs. Definitions of professional development are presented, followed by a discussion of three distinct types of methods used to deliver professional development training in college and university settings. Online professional development methods are examined, and the benefits and disadvantages of these approaches are presented. This section concludes by addressing faculty perceptions about online professional development methods.

**Face-To-Face Professional Development**

Meyer and Murrell’s (2014) national study of 39 higher education institutions offers a baseline for faculty development programs. The most frequent training activities in over 90% of the institutions surveyed were workshops. The most popular format for online teaching was the one-time, face-to-face workshop that focused on a technology tool or skill development (Wynants & Dennis, 2018), or seminar lasting two to five hours (Grant, 2004; Hixon, Barczyk, Buckenmeyer & Feldman, 2011; Lackey, 2011). Short sessions of less than two hours, multiple sessions ranging between two to five sessions, and hands-on training for creating an online course were other methods of faculty development noted in this study. Training in online teaching is a critical foundation for
online education, so it is interesting to note that the widespread use of face-to-face training was so popular considering the focus of the training was about online teaching.

**Hybrid Models**

Hybrid models of faculty professional development offer alternatives to face-to-face training that are more flexible for teachers who are pressed for time (Moore et al., 2016). Definitions of hybrid models of faculty professional development are as multidimensional as the forms of delivery (Hahs-Vaughn et al., 2007). Some models of hybrid professional development use a combination of synchronous and asynchronous online experiences combined with in-person activities to facilitate teachers’ learning (Moore et al., 2016). Other models offer asynchronous online experiences of self-paced learning followed by face-to-face instruction that is short and focused (Weber-Main et al., 2019). In broad terms, hybrid professional development programs use both synchronous (online or face-to-face) and asynchronous (web-based) modalities for learning to foster ongoing mentoring and connections with peers (Kusters et al., 2020).

**Online Models**

Faculty professional development is frequently delivered through synchronous and asynchronous online courses (Dyjur & Lindstrom, 2017; Ginzburg, Chepya, & Demers, 2010) that form flexible, online learning communities (Brooks, 2010). Webinars, mini-courses, seminars, peer-training, and individual consultations can also provide meaningful training if participants feel that the content is relevant to their needs (Walters, Grover, Turner, & Alexander, 2017). Researchers also indicate the use of personalized, individualized trainings is a form of professional development (McQuiggan, 2012; Rhode, Richter, & Miller, 2017; Wingo, Peters, Ivankova, & Gurley,
2016), as well as trainings that occur in a more prescriptive manner (Meyer & Murrell, 2014).

Only a handful of studies model best practices for online teaching and learning through methods of online faculty professional development (Borup & Evmenova, 2019), as opposed to the staggering popularity of face-to-face delivery of professional development as indicated by a national study of 39 higher education institutions (Meyer & Murrell, 2014). In earlier research, Wynants & Dennis (2018) explored the advantages and disadvantages of using an online context for faculty training. They employed a qualitative methodology and thematically analyzed data from face-to-face interviews to better understand faculty perspectives about designing professional development training.

**Advantages of Online Models for Faculty Professional Development**

An advantage of online professional development programs that train faculty in online teaching practices is that they provide teachers with the experience of being a student in an online class (Meyer, 2014, as cited in Leary et al., 2020). Higher education faculty are comfortable with being subject matter experts in their field, but by experiencing the role of a student in online learning, faculty develop a new perspective in relation to teaching (Niculescu, Rees, & Gash, 2017). The best online teaching programs allowed faculty to experience high quality online learning from the perspective of being a student (Elliott et al., 2015; Ginzburg et al., 2010). Findings from a recent study in faculty online teaching practices noted that the “experience of being an online learner can help them understand the frustrations that students can experience” (Martin et al., 2019, p. 199). Considering how important it is to model evidence-based practices when
training faculty to teach online, it is surprising that there is a large prevalence of face-to-face training for online teaching (Meyer & Murrell, 2014).

Faculty professional development in online formats can create learning spaces that promote self-directed, investigative learning, a goal of education theories (Nicol & Macfarlane-Dick, 2006). This demonstrates that learning online can be interactive and engaging while also creating communities of inquiry (Garrison, 2011). The findings from a 2015 study show that social interaction changes instructors’ beliefs and attitudes (Gachago, Morkel, Hitge, van Zyl, & Ivala, 2017). Over the long-term, this may increase faculty’s effectiveness in online teaching and improve teacher assurance and self-efficacy (Brooks, 2010; Ginzburg et al., 2010; Reilly, Vandenhouten, Gallagher-Lepak, & Ralston-Berg, 2012; Rienties, Brouwer, & Lygo-Baker, 2013).

An added benefit of online, asynchronous faculty development is its flexibility, especially for adjunct faculty who may not be able to participate in on-campus, face-to-face trainings (Borup & Evmenova, 2019; Elliott et al., 2015). Rienties et al. (2013) suggest that while asynchronous, online professional development programs are convenient and allow faculty to participate on their own time, deadlines in a program were particularly important because they helped to create learning environments that are similar to those which students experience in an online class. Paced, weekly deadlines encouraged participation in discussions, and this is a vital component of asynchronous learning (Rienties et al., 2013).

**Disadvantages of Online Professional Development**

Key components of the Community of Inquiry framework (Garrison, Anderson, & Archer, 2000) include social presence, teacher presence, and cognitive presence. When
these components are not balanced or are lacking in online faculty training, faculty-learners may get the impression that online learning is solely about posting materials, or setting up quizzes, tests, or creating discussion topics (Elliott et al., 2015). An online environment that does not facilitate meaningful collaboration between faculty and learners results in a lack of social presence (Wynants & Dennis, 2018), and this can be detrimental to faculty perceptions about online learning (Good & Schumack, 2013). Providing access to materials online is not enough to create a strong teacher presence; if there is no guidance from an instructor, online learning will not be meaningful (Niculescu et al., 2017).

**Faculty Perceptions about Online Professional Development Programs**

Faculty professional development programs should strengthen faculty’s awareness, confidence levels, and perceptions about how technology can add value to the classroom (Howland & Wedman, 2004). Part-time (adjunct) faculty make up the majority of teaching faculty in higher education (Walton, 2018), so it is especially important to consider the needs of this demographic when designing professional development to provide excellent online education pedagogy (Koozer, 2019). Developments in technology have brought about changes in the roles of faculty and structures of education, so it is important to understand their perceptions of these changes (Clay, 1999).

**Faculty Readiness**

Martin et al. (2019) define faculty readiness to teach online as a state of faculty preparation for online teaching. The researchers distinguish between two components of readiness; attitudes about the importance of teaching online and perceptions about
confidence (ability) to teach online. The first component of readiness is related to faculty attitude about the importance of teaching online. Attitude refers to a person’s point of view about the relevancy of technology and teaching, perspectives about online teaching competencies, such as facilitating interaction (Denis et al., 2004), assessing learning, and perspectives about pedagogical roles of an online instructor. Attitude also refers to managerial aspects of online teaching, such as maintenance of online classes, and current about subject matter taught (Darabi et al., 2006; Denis et al., 2004).

The second aspect of Faculty readiness refers to faculty perceptions about their confidence (ability) to teach online. Instructor ability is defined by Lee and Tsai (2010) as how faculty perceive their own competence using instructional strategies for teaching effectiveness. Studies reveal that faculty have low ability regarding technological resources and high ability regarding course alignment (Northcote et al., 2015; Wallace, 2004). Results from other studies related to perceptions of ability and importance for online competencies related to technology use and online education show that faculty have high perceptions of online teaching competencies but low perceptions of ability regarding the competencies (Aydin, 2005; Northcote et al., 2015).

Methods to Evaluate Faculty Professional Development

This section discusses methods that have been used to design research and collect data about the effectiveness of professional development programs. Faculty perspectives about professional development program design, faculty beliefs about teaching, perspectives about skills gained from faculty development programs, and how skills gained are applied to practice will be discussed. This section also presents how
qualitative, quantitative, and mixed methods have been used to examine faculty perspectives about professional development programs.

In a case study, Borup and Evmenova (2019) contend that the way a course was taught, and the techniques modeled by course instructors were factors that had a greater influence on faculty perspectives about online learning. After completing an 8-week, cohort-based, online faculty development program, faculty expressed confidence in their online teaching skills (Ginzburg et al., 2010). The online professional development program had a positive impact on their perceptions about online teaching (Borup & Evmenova, 2019). Most researchers focus on intentions and beliefs faculty have about teaching, not their beliefs about teaching development. Few studies exist that concentrate on faculty impressions and beliefs towards professional development for teaching (Downing & Dyment, 2013; Pesce, 2015; Scherer, Howard, Tondeur, & Siddiq, 2021; Shreaves, Ching, Uribe-Florez, & Trespalacios, 2020), or its effectiveness and preference of delivery methods for professional development for instructors preparing to teach online (Elliott et al., 2015; Norton & Hathaway, 2015). Faculty perceptions were explored in a study on faculty intentions in teaching, but this study focused on faculty’s reflections on their own teaching efficacy, not about professional development for teaching (Norton, Richardson, Hartley, Newstead, & Mayes, 2005).

A national study of faculty development training for online teachers presents the results of 39 higher education institutions and the types of training offered to train faculty to teach online (Meyer & Murrell, 2014). Brancato (2003) advocates that faculty development programs should be designed in ways that are consistent with Malcolm Knowles’ adult learning theory. As self-directed learners, faculty need useful,
meaningful examples that relate to their teaching. Faculty also need time to reflect and explore their own teaching practices (Knowles, 1980). In a study conducted by Dailey-Herbert, Mandernach, Donnelli-Sallee, and Norris (2014), adjunct faculty shared their preferences to build on intrinsic motivation for professional development by having continual access to materials from training even after the training was completed.

In past studies, qualitative methods have been employed to determine the knowledge and skills the participants gained from the training (Parsons et al., 2019), and to find out how faculty feel about the training materials, content, and delivery of the training. Merriam (1998) describes the interests of qualitative researchers as “Qualitative researchers are interested in understanding the meaning people have constructed, that is, how they make sense of their world and the experiences they have in the world” (p. 6).

For example, reflection journals have been used to examine challenges instructors come up against when learning how to teach online. Perrotta and Bohan (2020) coded personal faculty observations and evaluations to identify emerging themes related to best-practices in teaching for e-learning environments. Storandt, Dossin, and Lacher (2012) collected reflection logs about teacher practices in key areas, such as discussion facilitation, interaction, and community building. Perrotta and Bohan (2020) and Storandt et al. (2012) assert there is a lack of data about unique challenges online faculty face, and that there are only a few studies that supply empirical data about preparing and supporting faculty to teach online. This data is necessary to develop professional development training to ensure high quality online teaching and learning. Both studies contribute to the literature by exploring faculty perspectives about what is needed to
expand and develop high quality faculty professional development programs that contribute to learner success.

Previous studies collected data using online, asynchronous discussions to evaluate an online training course for online instructors. Shattuck and Anderson (2013) designed an online training intervention to address the problem that many college and university adjunct faculty face: a lack of quality, accessible training to support them as they transition to online teaching. Their design-based research study based in an interpretivist paradigm contributes to the literature by identifying practices that will guide trainers who will develop professional development programs for both novice and experienced online instructors.

Face-to-face interviews are another method that has been used to collect data about evidence-based practices for evaluating faculty professional development. Wynants & Denis (2018) conducted a qualitative study that explored the advantages and disadvantages of an online faculty development program. The results of this study indicated that while faculty benefited from ongoing access to training materials and enjoyed the flexibility of an asynchronous training, isolation, and lack of social interaction in discussions were some of the challenges identified through thematic analysis.

Gregory, Rockinson-Szapkiw, and Cook (2020) explored the influence a workshop on applying the Quality Matters rubric had on faculty perceptions about online teaching. Using an explanatory sequential mixed methods study, the researchers collected quantitative data via an online survey first, then followed up with qualitative data that was collected through researcher-designed semi-structured interviews using
maximum variation sampling. Rizzuto (2017) implemented a mixed-methods research
design to examine a self-paced online faculty development course about rubrics. Data
collected through faculty self-reflections and questionnaires indicate that self-paced
online faculty development training should emphasize adult learning principles and
transformative learning through self-reflection.

The study conducted by Rizzuto (2017) is significant because it adds to limited
research about online faculty development and provides convincing evidence that self-
paced online training can be an effective faculty development method. Furthermore, the
researchers’ findings help instructional designers by providing recommendations for
designing similar self-paced online courses. Course design is also researched in the study
conducted by Gregory et al. (2020). Based on the premise that course design not only
influences faculty perceptions about online teaching, but course design also affects
teaching practice and student learning. The researchers state that social influence and
facilitating conditions play a primary role in faculty perceptions about online teaching
and learning.

**Theoretical Framework for Faculty Professional Development**

This section focuses on the theoretical framework for professional development
and examines connections between adult learning theory, constructivism, and faculty
professional development. A brief discussion of the andragogical framework and
constructivism is necessary to situate this study and align it within a theoretical
framework. This section defines andragogy and adult learning theory based on the work
of Knowles, Holton, and Swanson (2005). The section concludes by discussing
constructivism and its connection to andragogy.
Andragogy and Adult Learning Theory

An emphasis on adult learning theory has become a movement in faculty professional development over the years (Denoyelles, Cobb, & Lowe, 2012). Malcolm Knowles (1913 - 1997), the “Father of Andragogy” (Knowles et al., 2005, p. v), introduced the concept of andragogy in 1968 from Europe, where educators had been using it to refer to both the practical aspects of adult teaching and learning and to the academic study of adult education (Merriam, Caffarella, & Baumgartner, 2007). Knowles popularized the term in America, where its use became more widespread in the 1970s. Andragogy is the art and science of helping adults learn, in contrast to pedagogy, which is the art and science of teaching children (Knowles, 1980). Andragogy is a set of five assumptions about adult learning, described in the following section.

One of the first assumptions underlying andragogy is that an adult has an independent self-concept and becomes increasingly self-directed as they learn (Merriam, 2004). As autonomous learners, they prefer to have control over their learning (Gouthro, 2019; Knowles et al., 2005; Merriam, 2004; McGrath, 2009; Robles, 1998).

A second assumption about adult learners is that they are driven more by intrinsic motivation as they mature, rather than by extrinsic motivation (Lanford, 2021; Watts, 2015). Adults need to know what they are going to learn, why they are learning it, and how the content is relevant to their lives. Adult learners need rationale for why they are learning the topic before they start learning about it. When the learners’ level of awareness is raised in this regard, the learner is more likely to be vested in the topic (Cercone, 2008; Tough, as cited in Knowles et al., 2005).
A third assumption about adult learners relates to the prior experiences of the learner, such as on-the-job training or other life experiences that should be used as resources for learning. Adults arrive in higher education classrooms with more life experiences and prior knowledge compared to their traditional counterparts, and this heterogeneity of experience, including work, learning preference, and motivation should be tapped into through experiential teaching techniques (Applefield, Huber, & Mahnaz, 2001; Arghode, Brieger, & McLean, 2017; Watts, 2015). While prior experiences can be positive, negative learning experiences can also be a part of the adult students’ reservoir of experience.

Readiness to learn is the fourth assumption of the andragogical model (Knowles et al., 2005). Adults want to learn to cope with real life situations more effectively, like getting a better job, receiving a raise, or increasing opportunities for growth and development. Orientation to learning, the need for immediate use, and relevance to practical use is important for the adult learner. When approaching learning, adults bring the desire to learn about new interests, and this can make them more successful (Knowles, 1980).

This connects to the fifth tenet of andragogy, which asserts that orientation to learning should be problem-centered and contextual. Knowles maintains that problem-based, collaborative inquiry promotes the value of learning as opposed to learning that is “didactic and imposed” (Bates, 2016, p. 60). Problem-centered or task-centered learning applies to adults, who are life-centered (Frey & Alman, 2003; Knowles et al., 2005; McGrath, 2009).


**Constructivist Learning Theory**

Constructivism is a 20\textsuperscript{th} century learning theory that connects to the andragogical framework. According to constructivist theory, the learner is actively involved with the teacher and peers in constructing meaning. Learners learn through social interaction, experience, and reflection. The role of the learner is to actively create, build, construct, and transform knowledge (Applefield et al., 2001; Harasim, 2012). This approach allows learners to author their own knowledge, and in doing so they revise their understanding, create new understanding, and advance their cognitive structures (Applefield et al., 2001). The learner makes sense of new experiences by relating them to what they already know. In a constructivist lens, students are encouraged to be risk-takers, engage in student-to-student interactions, and engage in problem-solving projects (Applefield et al., 2001). Like andragogy, constructivist learning theory has been widely written about as a theory, methodology, and epistemology (Mertens, 2019). A constructivist perspective places the learner in control of and at the center of the learning environment where they must negotiate meaning, manipulate information, and socially construct reality (Ertmer & Newby, 1993).

**Evaluation Model**

This section focuses on evaluation models for faculty professional development. The section begins by defining evaluation and discusses how formative and summative evaluations inform decision making processes. Following that, a definition of program evaluation is presented. The section concludes by discussing the evaluation model of Kirkpatrick, which has been widely applied to measure effectiveness of faculty professional development training.
As defined by the American Evaluation Society, evaluation is a “systematic process to determine merit, worth, value or significance” (Boykin, 1958). Evaluation is implemented to review and determine if goals and policies need realignment to meet preferred outcomes (Laurian et al., 2004; Stevens, 2013). This study identifies two types of evaluation related to program evaluation of online learning: formative and summative.

Formative evaluation (Alkin & Christie, 2012) refers to the evaluation of educational programs, such as curricula, instructional material, and teaching methods. They generate information to influence immediate decisions about a program, such as improving component parts and processes (Shadish, Cook, & Leviton, 1991). Formative evaluations focus on providing feedback to improve the outcomes of programs or to increase its efficiency (McDavid & Hawthorn, 2006; Guyadeen & Seasons, 2018). Formative evaluation is done during the construction, planning, and implementation of a program or new curriculum designed to improve it (Mertens & Wilson, 2019).

Summative evaluation focuses on outcomes and occurs once a program is complete. Summative evaluations provide information to stakeholders regarding whether a program has achieved its goals or is worthy of continuing (Guayadeen & Seasons, 2018; McDavid & Hawthorn, 2006; Shadish et al., 1991).

Program evaluation refers to the thoughtful process of focusing on questions and topics of concern, collecting appropriate information, and then analyzing and interpreting the information for a specific use and purpose (Taylor-Powell, Steele, & Douglah, 1996). Program evaluation is defined as “a systematic, purposeful process of studying, reviewing, and analyzing data gathered from multiple sources in order to make informed decisions” about a program (Killion, 2017, p. 26). The goal of program evaluation is to
answer questions about the degree to which a program achieves its goals, how it can be improved, and if it should continue. Program evaluators collect and interpret data about what programs are achieving to answer these questions (American Evaluation Association, 2007).

**Kirkpatrick’s Four Levels of Program Evaluation**

As stated by Huber (2011), an increased number of faculty professional development programs in higher education settings need evaluation strategies that can objectively and subjectively measure the effectiveness of their faculty training. Higher education contexts frequently have similar professional development programs (Alsalamah & Callinan, 2021) but lack a unified method to measure these programs. However, one model most frequently used to evaluate educational programs is Donald L. Kirkpatrick’s (1959) model of program evaluation (Table 2.1). While it has been primarily used to evaluate training in business and organizational contexts, his model is adaptable to Higher Education settings (Alsalamah & Callinan, 2021). Kirkpatrick (1959) puts forward four levels for evaluating training in his model: reaction, learning, behavior, and results criteria (Praslova, 2010).

Kirkpatrick’s model has made such significant contributions to the field of evaluation that it has encouraged the evolution of additional program models. It is straightforward, systematic, pragmatic, easily understood, and does not require a significant amount of time to administer. Scholars assert Kirkpatrick’s model is the most well-known and extensively used framework for classifying evaluation (Alsalamah & Callinan, 2021; Bates, 2004; Saad & Mat, 2013; Tamkin, Yarnall, & Kerrin, 2002).
Table 2.1 Kirkpatrick’s Four Levels of Evaluation

<table>
<thead>
<tr>
<th>Evaluation level</th>
<th>Description</th>
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<tbody>
<tr>
<td>1. Participants’ reactions</td>
<td>Measures reactions to the training or intervention. This level is also referred to as smile or happy sheets.</td>
</tr>
<tr>
<td>2. Participants’ learning</td>
<td>Measures the extent to which participants learned the planned knowledge, skills or attitudes related to learning outcomes of the training or intervention.</td>
</tr>
<tr>
<td>3. Participants’ behavior</td>
<td>Measures the degree to which participants changed their behavior in other contexts after completing the training or intervention.</td>
</tr>
<tr>
<td>4. Results</td>
<td>Measures the degree to which the general goals have been achieved because of the training or intervention. The fourth level refers to Return on Expectations (ROE).</td>
</tr>
</tbody>
</table>

*Note.* Table follows Paull, Whitsed, and Girardi, (2016).

Level one (reaction) measures participants’ reactions, impressions, engagement, and the degree to which participants found the training valuable and satisfying (Alsalamah & Callinan, 2021; Przymuszała, Piotrowska, Lipski, Marciniak, & Cerbin-Koczorowska, 2020). Level one is traditionally measured at the end of the course through a questionnaire. Even though many researchers advise against only using reaction ratings to assess programs, level one criteria remain the most used due to its ease of collection (Arthur, Tubré, Paul, & Edens, 2003).

Level two (learning) measures participants’ learning gained through the training, specifically, “the extent to which participants change attitudes, improve knowledge, and/or increase skill as a result of attending the program” (Hauser, Weisweiler, & Frey, 2020, p. 56). Learning outcomes in level two include skill-based, cognitive, and attitudinal indicators (Alsalamah & Callinan, 2021; Kraiger, Ford, & Salas, 1993). Cognitive indicators refer to knowledge acquisition, whereas skill-based outcome focus on motor and technical skills. Attitudinal learning is coupled with the goals, motivation, and attitudes tied to the objectives of the program (Alsalamah & Callinan, 2021). Level one (reaction) and level two (learning) experiences are often called consumptive metrics.
(Coldwell & Simkins, 2011) because they measure results in terms of the learning resources consumed during the experience. Because level one (reaction) and level two (learning) criteria emphasize what transpires within the training program, they are considered internal (Praslova, 2010).

Level three (behavior) evaluates the impact the training had on job performance, and how participants transfer and use recently learned information in their everyday life (Alsalamah & Callinan, 2021). A main focus of evaluation at this level is to determine the degree to which behavior has changed as a result of completing the training (Hahs-Vaughn et al., 2007). Level three measures the application of learning to practice (Steinert et al., 2006), long-term outcome in job related performance (Roos et al.) and is referred to as “transfer criteria” (Praslova, 2010, p. 221).

At level four (results) evaluation is the most helpful and the most complicated. Results can be defined as the “final results that occurred because the participants attended the program” (Kirkpatrick & Kirkpatrick, 2006, p. 25, as cited in Hauser et al., 2020). Level four measures how the training affects the organization and the impact the training has on practice and organizational related benefits (Hauser et al., 2020).

Kennedy, Chyung, and Winiecki (2014) point out that in practice, only 7% of programs measure results (level four). Comparatively speaking, 72% of organizations measure reaction (level one) while 32% measure learning (level two). The practice of measuring participant satisfaction by focusing on reaction (level one) and learning (level two) and not focusing on higher levels of behavior (level three) and results (level four) is likened to smile sheets (Hauser et al., 2020) because feedback elicits participants’ perceptions about quality of content, organization of the training, ratings of the facilitator,
and attitudes about completing a similar training at another time (Hahs-Vaughn et al., 2007).

Level three (behavior) and level four (results) are referred to as external criteria because they focus on changes that take place beyond the scope of the training (Praslova, 2010). Kennedy et al. (2014) claim that lack of knowledge about how to conduct evaluation and the absence of support for evaluation activities at levels three and four may explain why organizations have limited information about program effectiveness. Evaluating at these higher levels on Kirkpatrick’s scale creates measurable data that suggests the value and results delivered by the training (Kennedy et al., 2014).

**Chapter Summary**

As more colleges and universities develop online learning to keep up with the increased demand from students, effective faculty professional development options that train faculty in online methodologies become more vital. Modalities used to deliver trainings include face-to-face, hybrid, and 100% asynchronous online delivery to increase faculty readiness to teach online. Readiness to teach online is defined based on two criteria. The first criterion relates to a person’s attitude about the importance of teaching online and attitudes about the relevancy of technology and teaching. The second criterion is perceptions about confidence (ability) to teach online using instructional strategies for teaching effectiveness. (Denis et al., 2004; Lee & Tsai, 2010; Martin et al., 2019).

The theoretical framework of adult learning theory and constructivism applies to designing effective faculty professional development programs. Within an andragogical framework and according to constructivist theory, the faculty learner is actively involved in constructing meaning that is personal and relevant to their instructional context.
Faculty training programs are typically offered through Centers for Teaching Excellence, and an increased number of faculty professional development programs need evaluation strategies that can measure the effectiveness of faculty training. One well-known and extensively used framework for classifying evaluation is Kirkpatrick’s (1959) four-tiered model of program evaluation. Because it has been widely adapted for Higher Education contexts, its framework will guide this study. Evaluating programs using these models, and especially at the higher levels within each model, creates measurable data that suggests the value and results delivered by the training. This data may guide colleges and universities as they keep up with the demand to deliver an increased amount of quality online classes and programs for 21st century learners.
CHAPTER 3

METHODS

The purpose of this action research was to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College. As a course facilitator in the Online Pedagogy Program and the only Instructional Designer at Midwest Community College, I had direct contact with faculty participants in the study, and was familiar with the work they completed while they were enrolled in the Online Pedagogy Program. Because of my familiarity with the content and context of the Online Pedagogy Program, action research aligned with the purpose of this study. Action research is systematic inquiry to gain insight, develop practice, effect positive change, and improve outcomes in the context in which the research was conducted (Mills, 2018). This study addressed the following research questions.

1. What are Midwest Community College faculty perceptions about the quality of the Online Pedagogy Program?
2. What are Midwest Community College faculty perceptions about their readiness to teach online after completing the Online Pedagogy Program?
3. What are Midwest Community College faculty perceptions about their confidence to teach online after completing the Online Pedagogy Program?
Research Design

This action research study employed a mixed methods design to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College. Action research, as originally coined by Kurt Lewin around 1934 (Mertler, 2020), focuses on carrying out research in a specific context in which a problem exists to arrive at a solution and to initiate change. Action research is a cyclical process of planning, acting, developing and reflecting to improve educational practice and empower educational practitioners (Mertler, 2020). A distinguishable characteristic of action research is its focus on addressing problems in specific contexts to create social change within a practice context (Crul, 2014; Rudestam & Newton, 2007).

By designing an action research study, I was able to investigate the specific phenomenon of the faculty training within my college to improve learning and teaching and empower stakeholders (Mills, 2018). Compared to more traditional forms of theoretical research, action research is the most relevant, authoritative, participatory and persuasive research because it seeks to understand the teaching and learning process in a systematic method of inquiry. It is conducted “by teachers for teachers” (Mertler, 2020, p. 18), and with the support of stakeholders within the institution (Rudestam & Newton, 2007). I used consumptive metrics to evaluate the program at Kirkpatrick’s Level one (reaction) and level two (learning), and participants were able to share their perspectives about confidence and readiness and the degree to which they found the training valuable and satisfying (Coldwell & Simkins, 2011).
Action research encourages collaboration and fosters a method of education that is representative of peoples’ perspectives and interests (Creswell & Guetterman, 2019). This interactive method is also referred to as hermeneutical because when many perspectives are sought, more interpretations of meaning become possible, more contradictory ideas emerge, and this forces the researcher to rethink and re-examine previous positions (Mertens, 2020). Action research emphasizes process and democratizes research by empowering stakeholders to take more control of their own context (Greenwood & Levin, 2007). For example, I conducted interviews with participants, used open-ended questionnaires, and included surveys to investigate faculty perceptions about readiness and confidence to teach after completing the Online Pedagogy Program. A qualitative design allowed the participants the opportunity to express their ideas and opinions about how they consciously experienced the online pedagogy training (Tracy, 2020). The researcher focused on learning the meaning the participants held, and through this interpretive process, multiple voices contributed to creating a more holistic understanding of the topic through the lived experiences of the participants.

Specifically, the convergent parallel mixed methods research design was used in this action research study (Mills, 2018). This design involved collecting quantitative and qualitative data at approximately the same time, then merging the two forms of data to provide an extensive examination of the research problem (Creswell & Creswell, 2018). Quantitative data from survey instruments and qualitative data from interviews was collected concurrently to see if the findings merge (Mertler, 2020). As the researcher, my intent was to converge multiple data types to enhance and create a more complex
understanding of faculty perceptions about readiness and confidence to teach online (Creswell & Plano Clark, 2018). This research design aligns with constructivist and pragmatic philosophical paradigms in that both forms of data will be compared, contrasted, and integrated to gain a deeper understanding of the research questions. This action research study contributed to the scholarship about the effectiveness of faculty training programs in higher education that is currently underrepresented in the literature. The findings from this research contributed to discipline-grounded scholarship of faculty professional development, centers for teaching and learning and online teaching methodology.

Setting

This study was conducted at the Center for Teaching Excellence at Midwest Community College. The college employs 97 full-time faculty, and 451 adjunct faculty (Office of Research and Institutional Effectiveness, 2021). The Center for Teaching Excellence provides support for all faculty through onsite professional development workshops, face-to-face individual consultations, and online synchronous and asynchronous training.

In order to teach online, faculty must complete two required trainings. The first training is Blackboard Learn, a self-paced training that can take up to 25 hours of instruction and covers the technical aspects of using Blackboard. The Blackboard Learn training consists of three modules. Faculty must earn a score of 90% or better on the final exam in each unit to receive a certificate of completion. The final exam in each unit consists of 25 multiple-choice items, and faculty are permitted to retake the exams until they earn at least 90%. After successfully completing this training, faculty are eligible to
enroll in the second training, referred to as the Online Pedagogy Program. In the following sections, I will first describe Blackboard Learn training. After that, I will describe the Online Pedagogy Program.

**Blackboard Learn Training**

The first module is an introduction to online teaching. It contains six units of instruction, and provides a hands-on introduction to the teaching and learning features of Blackboard Learn. In this first module, faculty learn how to navigate the Blackboard Learn interface, perform common start-up tasks, such as organizing the course menu, customizing the course style, creating announcements, adding calendar events, and setting up discussion forums.

The second module is composed of three units of instruction: Building Courses, Enhancing Communication, and Assessing Learners. In the Building Courses unit, faculty learn the principles and processes involved in building a course from the ground up. In the Enhancing Communication unit, faculty learn how to effectively use Blackboard Learn communication tools to increase student engagement within a course. Faculty also learn strategies for building community amongst students. In the final unit, Assessing Learners, faculty are introduced to the features and functions of the tools used to deliver assignments and assess students in Blackboard Learn.

The third module in Blackboard Learn is composed of three units of instruction: Monitoring Student Performance; Building Online Communities; and Designing Engaging Content. In the first unit, Monitoring Student Performance, faculty gain in-depth knowledge of the tools and features within Blackboard Learn that help monitor and evaluate student performance. Topics include the Grade Center, the Retention Center,
the Performance Dashboard, inline assignment grading, the review status feature, and how to run reports and statistics to better track student progress. Building Online Communities is the second unit in this module. In this module, faculty explore communication and collaboration tools in Blackboard Learn. In the final unit of instruction, Designing Engaging Content, faculty learn strategies for effectively designing and organizing content to increase student engagement within courses. Finally, faculty learn how to adaptively release content to students (see Table 3.1).

Table 3.1 Modules in Blackboard Learn Training

<table>
<thead>
<tr>
<th>Stage</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting Started</td>
<td>First Day Tasks, Blackboard Learn Tools and The Instructor Experience</td>
</tr>
<tr>
<td>Essentials</td>
<td>Building Courses, Enhancing Communication, and Assessing Learners</td>
</tr>
<tr>
<td>Advanced</td>
<td>Monitoring Student Performance, Building Communities, and Designing Content</td>
</tr>
</tbody>
</table>

**Online Pedagogy Program**

To be eligible to enroll in the Online Pedagogy Program, faculty must have successfully completed the Blackboard Learn fundamentals course. The Online Pedagogy Program focuses exclusively on pedagogy in digital learning environments, as opposed to technical aspects covered in the Blackboard Learn prerequisite course.

The Online Pedagogy Program is offered in a cohort model, and there are two cohorts per semester. Each cohort consists of approximately 15 faculty. The training is six weeks in length and totals 33 hours of instruction. Since its inception, 20 cohorts totaling 300 faculty have earned their certificates of completion and have been deemed eligible to teach online by the administration.
To support faculty in the transition to online learning, five Illinois Online Network certified instructors from different schools in the college designed and implemented the Online Pedagogy Program. The Online Pedagogy Program is offered to faculty through the Center for Teaching Excellence and is the second required training faculty must complete before they are approved to teach online.

The goal of the Online Pedagogy Program is to train faculty to teach in a digital environment and to develop a measurable level of knowledge and growth related to delivering distance education. The five modules included in the Online Pedagogy Program are (a) Online Course Design Basics, (b) Enhancing Communication and Collaboration, (c) Engagement Strategies, (d) Assessment and Feedback, and (e) Supporting Learners with Accessible Course Design (see Figure 3.1).

Figure 3.1 Modules in Online Pedagogy Program
The Online Pedagogy Program is offered in a cohort model, and the first cohort completed the training in Summer 2020. Since then 18 cohorts have completed the program, totaling 300 faculty with a successful program completion. The following section describes the components of the units of instruction and instructional objectives for each unit in the Online Pedagogy Program (see Table 3.2).

Table 3.2 Modules in Online Pedagogy Program and Instructional Objectives

<table>
<thead>
<tr>
<th>Module</th>
<th>Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Online Course Design Basics</td>
<td>• Analyze best practices in online course design</td>
</tr>
<tr>
<td></td>
<td>• Identify course information and requirements from a course outline</td>
</tr>
<tr>
<td></td>
<td>• Craft course and module level outcomes that are clear, measurable, and observable</td>
</tr>
<tr>
<td>2: Enhancing Communication and Collaboration</td>
<td>• Identify best practices for designing discussion</td>
</tr>
<tr>
<td></td>
<td>• Create course activities that feature group work</td>
</tr>
<tr>
<td>3: Engagement Strategies</td>
<td>• Identify existing resources to increase student engagement in your online course.</td>
</tr>
<tr>
<td></td>
<td>• Identify new resources that will engage students.</td>
</tr>
<tr>
<td>4: Assessment and Feedback</td>
<td>• Develop formative and summative assessment strategies for your online courses.</td>
</tr>
<tr>
<td></td>
<td>• Determine what type of feedback will best support learning and determine how it can be best implemented in your course</td>
</tr>
<tr>
<td>5: Accessible Course Design</td>
<td>• Evaluate the accessibility of materials in your online course</td>
</tr>
<tr>
<td></td>
<td>• Develop strategies and curate resources that implement Universal Design for Learning (UDL) principles and practices to your course design and learning materials.</td>
</tr>
</tbody>
</table>

In the first module, Online Course Design Basics, faculty develop a road map for building a well-designed online course. First, faculty learn about best practices in designing effective online courses (Gregory et al., 2020; Heap, Thompson, & Fein, 2021; Sanga, 2017). Next, using the principles of backward course design (Kehoe, Schofield, Branigan, & Wilmore, 2018, Martin et al., 2019; Moore, 2015), faculty learn how to align course materials, learning activities, and assessments with the overall course learning
objectives outcomes. Finally, faculty discuss how to craft learning outcomes that are clear, measurable, and observable (Mager, 1997). To successfully pass this module, faculty must create a course map that includes course level outcomes, instructional objectives for all units, instructional materials, learning activities, readings, content or titles of videos, topics of discussions, and assessments that align with the learning objectives. Faculty create the course as they progress through the six-week Online Pedagogy Program, and submit their final course map by the end of the training.

The second module is Enhancing Communication and Collaboration. In this module, faculty learn how to strengthen interactions between students, between the instructor and students, and between the students and course content. Faculty learn how to create discussion topics that facilitate deeper exploration of course concepts through regular and substantive interaction. Faculty also learn how to use collaborative projects, create video and audio posts, and use email and announcements to create an engaged learning community. To successfully pass this module, faculty must create an open-ended, engaging discussion prompt that aligns with an instructional objective from a unit in their course.

In the third module, Engagement Strategies, faculty identify strategies to use to create engaging online courses to increase student learning and retention. Faculty watch six video segments featuring an instructor from the business department. In these videos, the instructor shares techniques she uses to engage students and increase participation in the discussion topic. To successfully pass this module, faculty create an activity and a follow-up assignment that showcases active learning strategies for enhanced student engagement.
In the fourth module, Assessment and Feedback, faculty learn about assessment techniques that are most suitable for online courses. Faculty learn to differentiate between formative and summative assessments, and explore ways to implement assessments into online courses. Faculty also learn how to give constructive feedback in online classes by using rubrics. Faculty are required to watch five short videos called “Assessment and Evaluation in Your Online Course.” To successfully complete this unit, faculty must build an online assessment that they will implement in their course.

The final module, Supporting Learners with Accessible Course Design, covers two units of instruction. In the first unit, faculty discuss issues of accessibility for online learners and identify the guiding principles of Universal Design for Learning (UDL), which provides flexible learning environments for all students, not just those with a need for accommodations. In the second unit, faculty learn how to apply UDL best practices to format course materials, documents, and assessments to ensure accessibility. Faculty are required to watch five short video installments called "Supporting your Learners with Accessible Course Design". To successfully complete this unit, faculty must develop a course activity, assessment, or activity that demonstrates principles of UDL.

Participants

Of all Faculty at Midwest Community College, 75.1% are Caucasian. This demographic is divided into two smaller groups, where white males constitute 41.5% of the teaching population, and white females make up 33.6% of the population. African American faculty represent 8.5% of the teaching population. African American female professors represent the next largest demographic (5%) and African American male
professors are 3.5% of the instructional employees. Hispanic Latino instructors constitute 6.3% of faculty at Midwest Community College (see Table 3.3).

Table 3.3 Gender and Race/Ethnicity Breakdown of Midwest Community College

<table>
<thead>
<tr>
<th>Gender</th>
<th>Race/Ethnicity</th>
<th>Headcount</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Asian</td>
<td>13</td>
<td>2.2%</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>21</td>
<td>3.5%</td>
</tr>
<tr>
<td></td>
<td>Hispanic Latino</td>
<td>19</td>
<td>3.2%</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>250</td>
<td>41.5%</td>
</tr>
<tr>
<td></td>
<td>2 or more</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>16</td>
<td>2.7%</td>
</tr>
<tr>
<td>Total Male</td>
<td></td>
<td>320</td>
<td>53.2%</td>
</tr>
<tr>
<td>Female</td>
<td>Asian</td>
<td>13</td>
<td>2.2%</td>
</tr>
<tr>
<td></td>
<td>Black</td>
<td>30</td>
<td>5.0%</td>
</tr>
<tr>
<td></td>
<td>Hispanic Latino</td>
<td>19</td>
<td>3.2%</td>
</tr>
<tr>
<td></td>
<td>Native American</td>
<td>2</td>
<td>0.3%</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>202</td>
<td>33.6%</td>
</tr>
<tr>
<td></td>
<td>Unknown</td>
<td>16</td>
<td>2.7%</td>
</tr>
<tr>
<td>Total Female</td>
<td></td>
<td>282</td>
<td>46.8%</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>602</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Note. Office of Research and Institutional Effectiveness (2021).*

Criteria for inclusion to participate in this study included (a) actively teaching at Midwest Community College, (b) having completed the Online Pedagogy Program, (c) currently teaching an online course, or (d) having taught an online course since completing the Online Pedagogy program. All faculty who met this criteria were emailed an invitation to participate in the study. After they confirmed they would like to participate and returned a signed consent to participate form, the survey links (except for End-of-Course evaluation) were emailed to the participants.

Maximum variation sampling was used to determine eligibility for participating in research Semi-Structured Individual Interviews. Eight participants who could help to develop a detailed understanding (Creswell & Guterman, 2019) and “best help the researcher understand the problem and the research question” (Creswell, 2014, p. 239) were chosen for the Semi-Structured Individual Interviews, and faculty were individually
selected to align with the demographics of Midwest Community College as best as possible.

**Data Collection and Instruments**

Different types of data were collected using quantitative and qualitative methods to inform the results of this study and can be seen in Table 3.4. Quantitative data was collected using three different instruments. The first quantitative instrument was the Faculty Perception Readiness to Teach Online (FRTO) survey developed by Martin et al., (2019) and can be viewed in Appendix A. The second instrument was the Technological Pedagogical Content Knowledge (TPACK) survey used by Schmidt et al., (2009) and based on the work of Mishra & Koehler (2006), located in Appendix B. The third instrument was the Online Pedagogy Program End-of-Course Evaluation developed by the Office of Research and Institutional Effectiveness at Midwest Community College, which can also be viewed in Appendix C. Qualitative data was collected through one-on-one synchronous Semi-Structured Individual Interviews conducted via Zoom. The interview protocol can be viewed in Appendix D.

Table 3.4 Research Questions and Data Source Alignment
<table>
<thead>
<tr>
<th>Research questions</th>
<th>Data collection sources</th>
</tr>
</thead>
</table>
| RQ 1: What are Midwest Community College faculty perceptions about the quality of the Online Pedagogy Program? | 1. Online Pedagogy Program End-of-Course Evaluation  
2. Semi-Structured Individual Interviews |
| RQ 2: What are Midwest Community College faculty perceptions about their readiness to teach online after completing the Online Pedagogy Program? | 1. Faculty Readiness to Teach Online Survey  
2. Technical Pedagogical Content Knowledge  
3. Semi-Structured Individual Interviews |
| RQ 3: What are Midwest Community College faculty perceptions about their confidence to teach online after completing the Online Pedagogy Program? | 1. Faculty Readiness to Teach Online Survey  
2. Technical Pedagogical Content Knowledge  
3. Semi-Structured Individual Interviews |

First, I will describe the FRTO survey instrument. After that, I will explain the TPACK survey (Schmidt et al., 2009; Mishra & Koehler, 2006). Next, I will explain how these instruments will be adapted for my research purposes. Finally, I will describe the qualitative data collection method and interview protocol.

**Faculty Readiness to Teach Online**

The first instrument I used in this study was the FRTO survey developed by Martin, Budhanri, and Wang (2019) (see Appendix A). The authors referenced the literature (Downing & Dyment, 2013; Gay, 2016; Lichoro, 2015) to establish a framework to measure faculty competencies and perceptions about readiness to teach online. They also reviewed a 20-item readiness instrument from University of Toledo (2017) and a 30-item survey for self-assessment from the Pennsylvania State University (2017). While some items from Pennsylvania State University were incorporated, the authors preferred and used the categorization from the University of Toledo (2017). The final four categories included Course Design (nine items), Course Communication (ten items), Time management (six items), and Technical Competence (7 items). Content
validity was checked by three experts in instructional technology and three additional faculty who teach online.

The finalized FRTO instrument consists of three parts. Part 1 measures faculty perceptions about their readiness (importance) of competencies for online teaching using a 5-point Likert scale range from 1 (not important at all) to 5 (very important). For faculty perceptions about readiness, the Cronbach’s alpha for the subscales were .79 (course design), .82 (course communication), .82 (time management), and .81 (technical competence) (Martin et al., 2019). Part 2 measures faculty confidence about their ability to accomplish the same core competencies as described in Part 1. Part 2 also uses a 5-point Likert scale range from 1 (I cannot do it at all) to 5 (I can do it well). For faculty perceptions about confidence, the Cronbach’s alpha for the subscales were .92 (course design), .86 (course communication), .83 (time management), and .88 (technical competence) (Martin et al., 2019). These two constructs aligned with both of my research questions. Part 3 of FRTO asks faculty to indicate various types of support they feel would have helped them to prepare to teach online. The author granted me permission to use and adapt the instrument for my research purpose.

**Adaptations to Faculty Readiness to Teach Online Instrument**

In both parts one and two, I made the following changes to the original FRTO instrument to align with my research purposes and situational context (see Appendix A). For the Course Communication competencies, under item four, which states respond to students’ questions promptly, I removed 24 to 48 hours. Under item five, provide feedback on assignments, I removed 7 days from submission. Under item six, use synchronous web conferencing tools, I removed Adobe Connect, WebEx, and Skype.
For the Time Management competencies, I removed item one *schedule time to design the course prior to delivery (e.g. a semester before delivery)* because this statement did not align with content covered in the OPP. I also removed *speedgrader* and *calendar* under item three *use features in the learning management system in order to manage time* because they are not features of the learning management system at the research site.

In the *Technical Readiness* competencies section, item two, *navigate within the course in the Learning Management System*, I removed *Moodle* and *Canvas* because neither are used as a learning management system at the research site. I removed item three *use course roster in the Learning Management System to set up teams / groups*, item five *create and edit videos (e.g. iMovie, Movie Maker, Kaltura)*, and item seven *access online help desk / resources or assistance* because none of those items related to the situational context at the research site.

Part 3 of the FRTO instrument asks faculty to indicate which type of support would have helped them while they prepared to teach online. *Type of support* questions did not align with my research purpose; therefore, those two questions were removed.

**Technological Pedagogical Content Knowledge**

The second instrument I used and adapted for this study was the TPACK instrument by Mishra & Koehler (2006) and subsequently adapted by Schmidt et al. (2009). The TPACK instrument builds upon Schulman’s (1986) seminal work and explores the relationship between content and pedagogy of the teacher, labeled pedagogical content knowledge (PCK). At its core, TPACK measures teachers' understanding of technology knowledge (TK), content knowledge (CK), pedagogy
knowledge (PK), and the intersectionality of these three domains to form seven components total; Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPCK) (see Figure 3.2) (Koehler, Mishra, & Cain, 2013). The TPACK is not owned by anyone (tpack.org) and its framework has been widely used and adapted to understand technology use in preservice teacher education (Schmidt et al., 2009), online teaching and learning (Doering, Scharber, Miller, & Veletsianos, 2009), professional development (Trautmann & MaKinster, 2010), learning technology and design (Mishra & Koehler, 2006), and even pedagogical uses of technology in physical education (Juniu, 2011).

The TPACK framework is important because it provides educational technology researchers and practitioners with a standard to measure how technology integration strengthens instructional strategies. It also provides guidance for teacher preparation programs to develop a greater understanding of the connections between technology and pedagogy by modeling technology integration. TPACK offers theoretical guidance for how teacher preparation programs can approach training faculty to use technology in both discipline specific and general ways (Graham, 2011; Martin, 2018).
Figure 3.2 The Components of the TPACK Framework

Note. Reproduced by permission of the publisher, © 2012 by tpack.org.
To develop the instrument, Schmidt et al. (2009) used quantitative methods to establish validity and reliability of the instrument. With three nationally known TPACK experts, the researchers evaluated the original pool of 44 questions for content validity. Each expert rated the degree to which each question measured one of the seven TPACK domains. When descriptive statistics revealed low mean scores for a particular domain, like Technology Knowledge (TK), questions were then reworded to effectively measure the instructors’ knowledge about that particular construct (Schmidt et al., 2009). The researchers also evaluated each TPACK construct for internal consistency using Cronbach’s Alpha. The alpha reliability coefficients range from .75 to .92 for the seven constructs of TPACK, and the researchers state this range is acceptable to excellent, according to George and Mallery (2010). The alpha reliability coefficients are reported in Table 3.5.

TK is the first domain and it contains seven items to measure how instructors use technology. All seven items in the instrument adapted by Schmidt et al. relate to my research and no adaptation is necessary. Schmidt et al. (2009) adapted the second domain, CK, to research Mathematics, Social Studies, Science and Literacy. For each content area, the three statements were repeated to total 12 questions.
Table 3.5 Knowledge Domains, Description, and Reliability of TPACK

<table>
<thead>
<tr>
<th>Knowledge domain</th>
<th>Number of items</th>
<th>Domain description</th>
<th>Cronbach’s alpha value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Knowledge (TK)</td>
<td>7 items</td>
<td>TK refers to working with technology across a continuum of low to high tech tools, and the skills required to use technology to facilitate a learning goal (Mishra &amp; Koehler 2006; Schmidt et al., 2009).</td>
<td>0.82</td>
</tr>
<tr>
<td>Content Knowledge (CK)</td>
<td>3 items in 4 content subsections = 12 items total</td>
<td>CK refers to “knowledge about actual subject matter that is to be learned or taught” (Mishra &amp; Koehler, 2006, p. 1026). Teachers must know about the “content they are going to teach and how the nature of knowledge is different for various content areas” (Schmidt et al., 2009, p. 132).</td>
<td>Math 0.85 Social Studies 0.84 Science 0.82 Literacy 0.75</td>
</tr>
<tr>
<td>Pedagogical Knowledge (PK)</td>
<td>7 items</td>
<td>PK refers to the “methods and processes of teaching and would include fundamental knowledge in classroom management, assessment, lesson plan development, and student learning” (Schmidt et al., 2009, p. 132).</td>
<td>0.84</td>
</tr>
<tr>
<td>Pedagogical Content Knowledge (PCK)</td>
<td>4 items</td>
<td>PCK refers to the content knowledge that deals with the teaching process (Schmidt et al., 2009, p. 132; Shulman, 1986). PCK includes knowledge of what students bring to the learning situation, including their learning strategies combined with teaching approaches to develop better teaching practices in the content areas. (Koehler &amp; Mishra, 2009; Schmidt et al., 2009).</td>
<td>0.85</td>
</tr>
<tr>
<td>Technological Content Knowledge (TCK)</td>
<td>4 items</td>
<td>TCK refers to the reciprocity between technology and content. TCK refers to teachers’ knowledge of their subject matter and “the manner in which the subject matter can be changed by the application of technology” (Koehler &amp; Mishra, 2009, p. 1028). It suggests that by using a specific technology, teachers can “change the way learners understand and practice concepts in a specific content area” (Schmidt et al., 2009, p. 133).</td>
<td>0.80</td>
</tr>
<tr>
<td>Technological Pedagogical Knowledge (TPK)</td>
<td>7 items</td>
<td>TPK refers to the “knowledge of how various technologies can be used in teaching and understanding that using technology may change the way an individual teaches (Schmidt et al., 2009, p. 134)</td>
<td>0.86</td>
</tr>
<tr>
<td>Technological Pedagogical Content Knowledge (TPACK)</td>
<td>8 items</td>
<td>TPACK refers to the knowledge required by teachers for integrating technology into their teaching in any content area. Teachers have “an intuitive understanding of the complex interplay between the three basic components of knowledge (CK, PK, TK) by teaching content using appropriate pedagogical methods and technologies (Schmidt et al., 2009, p. 135).</td>
<td>0.92</td>
</tr>
</tbody>
</table>

*Note: As found in Schmidt et al. (2009).
In this study, I adapted the statements to measure faculty confidence to teach online after completing the Online Pedagogy Program. Statement number two was deleted and only statement one and three were used. PK is the third domain and it refers to strategies to address learners’ needs, assessment, and classroom management. All seven items from PK related to my research and no adaptation was needed. Schmidt et al. also adapted PCK and TCK to research Mathematics, Social Studies, Science and Literacy. For each content area, each statement for both PCK and TCK was repeated four times to total four questions. In my study, I only used the statement one time from both PCK and TCK to measure faculty perceptions about readiness to teach online after completing the Online Pedagogy Program. All five items from the TPK scale related to my research and therefore no adaptation is needed. Lastly, Schmidt et al. again adapted the TPCK subscale to measure Mathematics, Social Studies, Science and Literacy. Only statements two, three and four were appropriate to measure faculty perceptions about readiness to teach online after completing the Online Pedagogy Program. Therefore, statements two, three and four will be adapted to fit my research context. See Appendix B for the revised TPACK Instrument that will be used in this study.

**Online Pedagogy Program End-of-Course Evaluation**

The third primarily quantitative instrument I used to measure faculty perceptions about the quality of the Online Pedagogy Program and their readiness to teach online was the Online Pedagogy Program End-of-Course Evaluation. The Online Pedagogy Program End-of-Course Evaluation was completed by each study participant immediately after they completed the Online Pedagogy Program. This researcher had access to these completed evaluations and the data obtained was used to answer research question one,
the participants' perceptions of the Online Pedagogy Program module content in preparing them to teach online. The Online Pedagogy Program End-of-Course Evaluation instrument consisted of three parts (see Appendix C). The first part consisted of 15 statements where the participants responded using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The second part contained three questions. The first question asked respondents to rate the usefulness of discussions, assignments and virtual lab sessions in the Online Pedagogy Program. The participants responded using a 5-point Likert scale ranging from 1 (not at all useful) to 5 (extremely useful). The second question asked respondents to rate their satisfaction with the training using a 5-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied). The third question asked respondents to rate their satisfaction with course navigability using a 5-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied). Part three of the Online Pedagogy Program End-of-Course Evaluation instruments also collected demographics about the respondents. The OPP is one instrument that assessed attitudes about online teaching readiness and importance. Additionally, the OPP asked faculty to assess how the training was organized, the usefulness of assignments, and the degree to which faculty perceived that the assignments allowed them to demonstrate their understanding of course material.

The Online Pedagogy Program End-of-Course Evaluation has not been tested for content reliability, so it is difficult to determine if the evaluation actually measures faculty readiness to teach online. Additional qualitative instruments to measure faculty readiness to teach online will be used and if they yield similar results, then the Online Pedagogy Program End-of-Course Evaluation may be considered more reliable (Pyrczak
Outcomes of this research will offer recommendations to stakeholders about potential revisions to the End-of-Course Evaluation and additional Online Pedagogy Program adjustments.

**Semi-Structured Individual Interviews**

I collected qualitative data through semi-structured individual interviews. With semi-structured interviews, I focused on the research participants' perceptions about confidence and readiness to teach online as well as their perceptions about the quality of the Online Pedagogy Program. Through this interpretive process (Rubin & Rubin, 1995), faculty participants shared multiple perspectives and contributed to a more holistic understanding of the topic (Creswell & Creswell, 2018). While interviewing participants, interaction remained flexible, iterative and continuous, but also followed a script (see Appendix D) to make sure the same information is gathered from each participant (Rubin & Rubin, 1995). The Semi-Structured Individual Interviews took place synchronously using Zoom and was recorded and transcribed using the features offered within Zoom. See Table 3.6 for the alignment between semi-structured individual interview questions and the research questions of this study.

**Table 3.6 Alignment Table for Research Questions and Semi-Structured Interview**

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Semi-structured interview questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ 1 What are Midwest Community College faculty perceptions about the quality of</td>
<td>Since you completed the Online Pedagogy Program training, what one aspect has stuck with you the most? Please provide an example. Explain as needed.</td>
</tr>
<tr>
<td>the Online Pedagogy Program? (6 questions)</td>
<td>1. Were there any specific pedagogical principles you learned about in the Online Pedagogy Program training that you have applied to your teaching? Please provide an example. Explain as needed.</td>
</tr>
<tr>
<td></td>
<td>2. To what extent did the content in the Online Pedagogy Program model instructional strategies that you could integrate into your online teaching? Please provide an example. Explain as needed.</td>
</tr>
</tbody>
</table>
### Research questions

#### Semi-structured interview questions

3. Were there any specific technological tools you learned about in the Online Pedagogy Program training that you have applied to your teaching? (Share the technological tools components on the Zoom screen as needed).
   a. If not answered thoroughly, ask: Can you identify which tool you applied to your teaching?
   b. How did you apply this tool in your teaching?

4. If there is a change, follow up by asking: What has impacted this change?

5. How do the particular technologies used in a lesson you have taught “fit” with the instructional strategies you used? Please provide an example. Explain.

6. Overall, how would you describe the “value” of the Online Pedagogy Program?

### RQ 2: What are Midwest Community College faculty perceptions about readiness to teach online after completing the Online Pedagogy Program? (3 questions)

1. What specific Online Pedagogy Program content made you feel most ready to teach online?

2. What specific Online Pedagogy Program content did not contribute to your feeling ready to teach online? Please share an example or two.

3. How do the learning goals, instructional strategies, and technologies used in a lesson you have taught all fit together? Please provide an example. Or explain.

### RQ 3: What are Midwest Community College faculty perceptions about their confidence to teach online after completing the Online Pedagogy Program? (4 questions)

1. Which specific Online Pedagogy Program content made you feel most confident to teach online? Please provide an example.

2. Which specific Online Pedagogy Program content made you feel least confident to teach online? Please provide an example.

3. Please share an example or two that contributed to your sense of confidence in teaching online after completing the Online Pedagogy Program training?

4. If your degree of confidence has changed since completing the Online Pedagogy Program training, share your thinking or examples what contributed the most to your increase in confidence.

### Data Analysis

In this section, I will describe the sources of data and methods used to analyze the data in this mixed-methods, action research study. Three different were used to collect data. For each research question, I will describe the data source that answered the question, and the method that was used to analyze the data (see Table 3.7).
Table 3.7 Research Questions, Data Sources, and Analysis Methods Alignment

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Data sources</th>
<th>Analysis methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ 1: What are Midwest Community College faculty perceptions about the quality</td>
<td>1. Online Pedagogy Program End-of-Course Evaluation</td>
<td>1. Descriptive statistics</td>
</tr>
<tr>
<td>of the Online Pedagogy Program?</td>
<td>2. Semi-structured Individual Interviews</td>
<td>2. Inductive analysis</td>
</tr>
<tr>
<td>RQ 2: What are Midwest Community College faculty perceptions about their readiness</td>
<td>1. Faculty Readiness to Teach Online Survey</td>
<td>1. Descriptive statistics</td>
</tr>
<tr>
<td>to teach online after completing the Online Pedagogy Program?</td>
<td>2. Technical Pedagogical Content Knowledge</td>
<td>2. Inductive analysis</td>
</tr>
<tr>
<td></td>
<td>3. Semi-Structured Individual Interviews</td>
<td></td>
</tr>
<tr>
<td>RQ 3: What are Midwest Community College faculty perceptions about their confidence</td>
<td>1. Faculty Readiness to Teach Online Survey</td>
<td>1. Descriptive statistics</td>
</tr>
<tr>
<td>to teach online after completing the Online Pedagogy Program?</td>
<td>2. Technical Pedagogical Content Knowledge</td>
<td>2. Inductive analysis</td>
</tr>
<tr>
<td></td>
<td>3. Semi-Structured Individual Interviews</td>
<td></td>
</tr>
</tbody>
</table>

**Quantitative Data Analysis**

To collect the quantitative data, I used three different surveys. The first one was the FRTO. The second one was the TPACK, and the third one was the Online Pedagogy Program End-of-Course Evaluation. I calculated descriptive statistics to analyze the results of each data source. Descriptive statistics and analysis typically include the calculation of mean and standard deviation (Creswell, 2014). Descriptive statistics are also used to analyze the results of a survey to describe characteristics common to the entire sample (Mertens, 2020).

**Qualitative Data Analysis**

Qualitative data from the two open-ended questions in the Online Pedagogy Program End-of-Course instrument and the semi-structured individual interviews were analyzed using inductive analysis; meaning that the common themes of the data were extracted from the “bottom-up” (Lodico, Spalding, & Voegtle, 2006, p. 5). Specifically,
inductive reasoning follows an approach where the researcher collects data, investigates
the data to find themes, and then provides an overview of the themes and patterns in the
data (Lodico et al., 2006; Thomas, 2006). During qualitative data analysis, it is typical to
collect and analyze data from multiple sources (Creswell, 2014). It is also important to
note that in qualitative data analysis, this does not happen in a linear motion, but instead a
spiral motion for continuous improvement and change (Creswell, 2017).

Semi-structured individual interviews were recorded and transcribed using Zoom
automatic transcription and saved to the cloud. Once the recording was transcribed, the
transcript was imported into Microsoft Word and checked for accuracy. The
transcriptions of the semi-structured individual interviews and the End-of-Course open-ended
question responses were combined into one document. To reduce the large
amounts of data, the data was coded; a process of cleaning the data by assigning a word
that represents a category (Creswell & Creswell, 2018). I used Delve data analysis
software to code and categorize. I first completed a round of in-vivo coding to best
represent the participants voices out of the data. Next, I conduct a round of process
coding followed by descriptive coding to offer simple descriptive nouns to multiple
aspects of the data. The last round of coding was structural coding. After the data was
coded and categorized, patterns and themes were identified. Next, data was interpreted to
identify aspects that answer the research questions or challenge the research questions
(Mertler, 2020). Finally, qualitative findings were interpreted in reference to
participants’ interpretations and by examining the contextual meaning of their behaviors
(Tracy, 2020). By analyzing contextual meaning that is unique to the researched group, a
“complex and expansionistic depiction” (p. 275) was described thematically and compared to current literature that is grounded in research.

**Procedures and Timeline**

This action research started in the fall semester, 2022, and continued throughout the summer semester, 2023. It consisted of four phases: consent, data collection, data analysis, and sharing of findings. In Phase 1, approval from the Institutional Review Board was obtained and consent from participants was collected. In Phase 2, Data Collection took place. Phase 3 was the Data Analysis phase, and Phase 4 includes sharing of findings with interested stakeholders. Table 3.9 summarizes the timeline for each research phase.

Phase 1 began during the spring semester 2022 and continued throughout the summer. During this phase, I obtained approval from both the University of South Carolina and Midwest Community College’s Institutional Review Boards. Once the study was approved, I emailed and invited potential faculty to participate in the study. After faculty agreed to participate in the study, I explained the research purpose and process, and then I distributed and collected participant consent forms.

Phase 2 took place during the fall semester, 2022. During this phase, participants answered survey questions distributed via Google forms. Additionally, I scheduled and conducted individual interviews, which were conducted remotely via Zoom video conferencing.

Phase 3 lasted from winter, 2022 to spring, 2023. In Phase 3, quantitative and qualitative data were analyzed. Quantitative data was analyzed and summarized using descriptive statistics. Qualitative data was transcribed and coded. After the qualitative
data was coded, themes were identified. Member checking was used to ensure trustworthiness of qualitative data. Finally, I combined quantitative and qualitative data sources to answer the research questions regarding evaluating faculty perceptions about readiness and confidence to teach online courses after completing the Midwest Community College Online Pedagogy Program.

Table 3.8 Action Research Procedures and Timeline

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Month</th>
<th>Researcher activity</th>
<th>Participant activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: IRB Approval</td>
<td>June</td>
<td>Obtained approval from University of South Carolina and Midwest Community College</td>
<td></td>
</tr>
<tr>
<td>(Summer 2022)</td>
<td></td>
<td>Institutional Review Boards (IRB)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>July</td>
<td>Procured list of eligible participants</td>
<td></td>
</tr>
<tr>
<td>Phase 2: Consent and Data Collection (Fall 2022)</td>
<td>August</td>
<td>Invited eligible participants via email</td>
<td>Acknowledged email and confirm participation</td>
</tr>
<tr>
<td></td>
<td>September</td>
<td>Compiled list of interested participants Distribute and collect consent forms</td>
<td>Provided written consent of participation</td>
</tr>
<tr>
<td>Created a spreadsheet with consenting participants:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date consent returned</td>
<td></td>
<td>Distributed email invitation to participate with consent</td>
<td>Returned by Sept. 12th</td>
</tr>
<tr>
<td>Date when took OPP</td>
<td></td>
<td>Reminder email to participate</td>
<td>Returned by Sept. 12th</td>
</tr>
<tr>
<td>Date when taught first online course for Midwest Community College.</td>
<td></td>
<td>One last plea to participate (IF NEEDED)</td>
<td>Returned by Sept. 18th</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distributed adapted Perceived Technology Integration Knowledge of Teachers (TPCK: adapted) survey via Google forms</td>
<td>Completed TPCK Survey - Returned by Oct. 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distributed Faculty Perception Readiness to Teach Online (FRTO) survey via Google forms</td>
<td>Completed FRTO Survey - Returned by Oct. 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reminder email to return forms</td>
<td>Returned by Oct. 3</td>
</tr>
<tr>
<td></td>
<td>October</td>
<td>Ran cursory data outcomes on surveys.</td>
<td>Oct. 5: met with Dr. Kolski and Dr. Ari to review cursory info.</td>
</tr>
<tr>
<td>Timeline</td>
<td>Month</td>
<td>Researcher activity</td>
<td>Participant activity</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------</td>
<td>----------------------------------------------------------</td>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>Phase 3: Data Analysis</td>
<td></td>
<td>Conducted Individual interviews (6-8)</td>
<td>Participated in interviews</td>
</tr>
<tr>
<td>(Spring 2023)</td>
<td></td>
<td>Conducted qualitative and quantitative data analysis</td>
<td>Reviewed transcripts for accuracy as well as data analysis outcomes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Member checking</td>
<td></td>
</tr>
<tr>
<td>Phase 4: Sharing</td>
<td>July</td>
<td>Successfully completed final defense of dissertation research</td>
<td>Shared outcomes with stakeholders at Midwest Community College</td>
</tr>
<tr>
<td>(Summer and Fall 2023)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Shared with professionals in the field</td>
</tr>
</tbody>
</table>

After Phase 3 ended, Phase 4 commenced and lasted from Spring 2023 to Summer, 2023. In Phase 4, I shared the results of the study with stakeholders at Midwest Community College. Finally, I presented the results of the study at The Online Learning Consortium national conference. Other professional organizations include International Society for Technology in Education, the Professional Organization of Developers and the Association for Educational Communications and Technology. I will also plan to share the research findings by publishing them in the Journal of Digital Learning in Higher Education, the American Journal of Distance Education, the Professional Organization of Developer’s journal (POD) or the Community College Journal.

**Rigor and Trustworthiness**

To ensure rigor and trustworthiness of this mixed-methods study, I used three methods, triangulation, member checking, and peer debriefing (Mertler, 2020; Shenton, 2004). Triangulation of data is a key characteristic of mixed-methods research design. By using many different types of data sources and different methods to collect and analyze data, I reduced researcher bias and made sure data was dependable and credible.
(Shenton, 2004; Tracy, 2020). For example, semi-structured interviews served as a qualitative data source. To corroborate qualitative data results, descriptive statistics were used to offer a statistical representation about what the participants’ responses revealed. By combining qualitative and quantitative data, I used different methods and processes to develop a study that was accurate, reliable, and produced thick, rich descriptions (Creswell & Guetterman, 2019; Tracy, 2020).

Member checking, where the researcher asks for verification from the respondent group (Mertens, 2020), also allowed participants to read the transcript, review the accuracy of the data, and confirm that major findings, themes and interpretations “ensure the truth value of the data” (Creswell & Creswell, 2018, p. 208). Member checking opportunities were provided after the transcripts were processed, so participants could review their transcriptions for accuracy. Participants had another opportunity to confirm accuracy of interview data after it was analyzed, coded and categorized. By continually checking with participants, I made sure my perceptions were aligned with participants’ ideas (Glesne, 2006, as cited in Tracy, 2020).

Peer debriefing is another method that was used to ensure rigor and trustworthiness of this study. Mertler (2020) defines peer debriefing as “the act of using other professionals (perhaps a colleague or a critical friend) who can help you reflect on the research by reviewing and critiquing your process of data collection, analysis, and interpretation” (p. 143). I shared findings with colleagues in the Center for Teaching Excellence, the Office of Research and Institutional Effectiveness, and the Vice-President of Academic Affairs and other interested stakeholders within my college to better understand the complexities that arose in my study. They asked questions, offered
critical analysis, feedback and perspective to add rigor and trustworthiness to my research (Creswell & Creswell, 2018). Additionally, my dissertation committee chair and committee members at the University of South Carolina reviewed the research project throughout its duration. In addition to my dissertation committee chair and committee members, my cohort members also offered fresh perspectives, helped me by challenging my assumptions, and encouraged me to view the project with detachment so that I could strengthen the research according to their feedback (Shenton, 2004).

**Plan for Sharing and Communicating Findings**

It was important to share and communicate findings from this action research study to not only contribute to limited scholarship about online faculty development (Haras et al., 2017; Rizzuto, 2017; Webb et al., 2013), but also to provide recommendations for instructional designers and administrators at centers for teaching and learning to design self-paced, online trainings for pre- and in-service faculty. Only 14% of Centers for Teaching and Learning share their evaluation findings with other institutions (Kolomitro & Anstey, 2017), so sharing findings from this study added to a limited body of work represented in the literature. Research results informed the implications for practice by contributing to discipline-grounded scholarship for designing effective self-paced professional development about online teaching methodology (Gachago et al., 2017; Moore, et al., 2016). Findings were shared with stakeholders at Midwest Community College and at regional educational technology and faculty development conferences, and were published in journals related to faculty development and digital teaching and learning.
Locally, findings were presented to colleagues at Midwest Community College. I delivered a presentation in the Center for Teaching Excellence and I invited all faculty, colleagues from the Center for Teaching Excellence, staff from the Office of Research and Institutional Effectiveness, and the Vice-President of Academic Affairs to attend. Additional stakeholders, such as departmental faculty who originally designed the Online Pedagogy Program and faculty who participated as research subjects were also invited to attend. All names of faculty who participated in the study were changed to pseudonyms to protect confidentiality. All other instructional and non-instructional staff were invited to learn more about the results of this study, and to discuss the implications the findings have for the Online Pedagogy Program. I also presented at the Online Learning Consortium conference. Other professional organizations include the International Society for Technology in Education or the Professional Organization for Developers (POD) conference. I will share the research findings by publishing them in the International Society for Technology in Education’s (ISTE) Journal of Digital Learning in Higher Education, the American Journal of Distance Education, or the Community College Journal.
CHAPTER 4
ANALYSIS AND FINDINGS

The purpose of this action research was to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College. Quantitative data from the FRTO survey, the TPACK survey, and the Online Pedagogy Program End-of-Course Evaluation survey and qualitative data from semi-structured individual interviews was based on the following three research questions:

1. What are Midwest Community College faculty perceptions about the quality of the Online Pedagogy Program?
2. What are Midwest Community College faculty perceptions about their readiness to teach online after completing the Online Pedagogy Program?
3. What are Midwest Community College faculty perceptions about their confidence to teach online after completing the Online Pedagogy Program?

This study has three quantitative data sources: (a) FRTO survey, (b) the TPACK survey, and (c) the Online Pedagogy Program End-of-Course Evaluation survey. This study also had three qualitative data sources: (a) two open-ended questions on the Online Pedagogy Program End-of-Course Evaluation survey, (b) two open-ended questions on the FRTO survey, and (c) eight semi-structured individual interviews. The results of the quantitative data will be offered first, followed by the results of the qualitative data.
Quantitative Findings

The three quantitative data collection sources were the (a) FRTO survey, (b) the TPACK survey, and (c) the Online Pedagogy Program End-of-Course Evaluation survey. This section will report descriptive statistics, including the mean and standard deviation for all three quantitative data sources. Reliability outcomes will also be reported for FRTO. JASP and Excel were used for running all of the quantitative analysis.

Faculty Readiness to Teach Online Survey

The first quantitative data source in this study was the FRTO survey, developed by Martin et al. (2019). The purpose of this two-part survey was to measure faculty confidence and readiness. Part 1 measures faculty perceptions about their readiness (importance) of competencies for online teaching using a 5-point Likert scale response range from 1 (not important at all) to 5 (very important). Part 2 measures faculty confidence about their ability to accomplish the same core competencies as described in Part 1. Part 2 also used a 5-point Likert scale response range from 1 (I cannot do it at all) to 5 (I can do it well). Within each section, statements are oriented under four constructs: Course Design (9 questions), Course Communication (10 questions), Time Management (6 questions), and Technical (7 questions). All 19 participants of this study completed the FRTO survey that was uploaded to Google Forms for distribution and digital responding.

Reliability. Reliability refers to the internal consistency and dependency of a test. When used repeatedly, it should produce the same results time after time (Ravid, 2015). Internal consistency is an important aspect of reliability in research and is necessary to
ensure that the items on a test measure only one dimension, construct, or area of interest. If the items in a test are not internally consistent, it may lead to inaccurate or inconsistent results and could undermine the validity of the test (Salkind & Frey, 2020). In order to assess the reliability, or internal consistency of this instrument items, I calculated the Cronbach’s alpha for the full FRTO and then each subscale (see Table 4.1; Tavakol & Dennick, 2011). For the full FRTO, there showed to be excellent internal consistency among the participant responses \( (a = 0.93) \). For the Confidence section of FRTO, there showed to be excellent internal consistency among the participant responses \( (a = 0.92) \). For the Readiness section of FRTO, there showed to be excellent internal consistency among the participant responses \( (a = 0.90) \).

**Descriptive statistics.** I used descriptive statistics to describe and analyze characteristics of these datasets and condense them into meaningful numbers (Gissane, 1998). Calculating the mean score is important because it describes the average value in a data set (Salkind & Frey, 2020). The standard deviation indicates a more concentrated distribution of responses around this mean score (Ravid, 2015). See Table 4.1 for the descriptive statistics for the full FRTO and for each subscale, Confidence and Readiness.

<table>
<thead>
<tr>
<th>Faculty Readiness to Teach Online</th>
<th>M</th>
<th>SD</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full</td>
<td>4.42</td>
<td>0.73</td>
<td>0.93</td>
</tr>
<tr>
<td>Confidence</td>
<td>4.44</td>
<td>0.60</td>
<td>0.92</td>
</tr>
<tr>
<td>Readiness</td>
<td>4.40</td>
<td>0.73</td>
<td>0.90</td>
</tr>
</tbody>
</table>

The faculty responses to the full FRTO survey produced a mean score of 4.42 \( (SD = 0.73) \). The faculty responses to the Confidence section of the FRTO survey produced a mean score of 4.44 \( (SD = 0.60) \). The statement where the faculty response offered the strongest agreement was “Respond to students questions promptly” with a mean score of
4.89 ($SD = 0.32$). The mean score of 4.89 out of 5 reflects that faculty see responding to students questions promptly to be very important. The statement where the faculty response produced the lowest mean score ($M = 3.37$, $SD = 0.90$) was “Use of online collaborate tools (e.g. Google Drive, Dropbox).” The mean score of 3.37 out of 5 reflects that faculty have a neutral opinion regarding their confidence in using online collaborative tools. The faculty responses to the Readiness section of the FRTO survey produced a mean score of 4.40 ($SD = 0.73$). The statement where the faculty response offered the strongest agreement was “Send announcements/email reminders to course participants” which had a mean score of 4.95 ($SD = 0.23$). The mean score of 4.95 out of 5 reflects that faculty find it to be very important to send announcements/email reminders to course participants. There were four statements where the faculty response produced the lowest mean score ($M = 4.11$, $SD = 0.74$). These four statements were: “Communicate expectations about student behavior,” “Use facilitation strategies to manage time spent on course,” “Allocate time to learn about new strategies,” and “Share open educational resources.” The mean score of 4.11 out of 5 reflects that the faculty agree regarding their readiness to communicate expectations, use facilitation strategies, allocate time to learning new strategies, and sharing open educational resources when teaching online. Overall, these results show that faculty responded in agreement that they felt both confident and ready to teach an online course after completing the Online Pedagogy Program training.

**Technological Pedagogical Content Knowledge**

The second quantitative data source in this study was the TPACK survey developed by Schmidt et al. (2009) and based on the work of Mishra & Koehler (2006).
TPACK explores the relationship between content and pedagogy of the teacher, labeled as pedagogical content knowledge (PCK). At its core, TPACK measures teachers' understanding of technology knowledge (TK), content knowledge (CK), pedagogy knowledge (PK), and the intersectionality of these four domains (Pedagogical Content Knowledge [PCK], Technological Content Knowledge [TCK], Technological Pedagogical Knowledge [TPK], and Technological Pedagogical Content Knowledge [TPACK]) to form a total of seven components (Koehler et al., 2013). The TPACK survey uses a 5-point Likert scale response range from 1 (strongly disagree) to 5 (strongly agree). Eighteen out of the nineteen participants completed this survey.

**Reliability.** Internal consistency is an important aspect of reliability in research and is necessary to ensure that the items on a test measure only one dimension, construct, or area of interest. If the items in a test are not internally consistent, it may lead to inaccurate or inconsistent results and could undermine the validity of the test (Salkind & Frey, 2020). In order to assess the reliability, or internal consistency of this instrument items, I calculated the Cronbach’s alpha (Tavakol & Dennick, 2011) for the full TPACK and then the reliability for five of the subscales. Cronbach’s Alpha could not be calculated for two of the subscales, PCK and TCK, because these subscales contained only one question. The full TPACK Cronbach Alpha was 0.90, which demonstrates excellent internal consistency. The TK subscale had a Cronbach Alpha of 0.79, which demonstrates reliable internal consistency. The CK subscale had a Cronbach’s Alpha of 0.66, which demonstrates acceptable internal consistency. The PK subscale had a Cronbach’s Alpha of 0.79, which demonstrates reliable internal consistency. The TPK subscale had a Cronbach’s Alpha of 0.75, which demonstrates
acceptable internal consistency. The TPCK subsection has a Cronbach’s Alpha of 0.89, which demonstrates excellent internal consistency.

**Descriptive statistics.** The most common form of descriptive statistics include mean and standard deviation (Ravid, 2015). Used in conjunction with mean scores, the standard deviation is calculated to show how far the values in a dataset are spread out from the average or mean value (Ravid, 2015). In the following section, I will report the descriptive statistics for each subscale of the TPACK and then conclude by reporting the descriptive statistics of the full TPACK. See Table 4.2 for the descriptive statistics of the full TPACK and each subscale.

Table 4.2 Descriptive Statistics for Technological Pedagogical Content Knowledge Survey (N=18)

<table>
<thead>
<tr>
<th>Technological Pedagogical Content Knowledge Survey Subscale</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Content</td>
<td>3.82</td>
<td>0.76</td>
</tr>
<tr>
<td>Content Knowledge</td>
<td>3.97</td>
<td>0.61</td>
</tr>
<tr>
<td>Pedagogical Knowledge</td>
<td>4.13</td>
<td>0.64</td>
</tr>
<tr>
<td>Pedagogical Content Knowledge</td>
<td>3.83</td>
<td>0.71</td>
</tr>
<tr>
<td>Technological Content Knowledge</td>
<td>3.83</td>
<td>0.71</td>
</tr>
<tr>
<td>Technological Pedagogical Knowledge</td>
<td>4.07</td>
<td>0.68</td>
</tr>
<tr>
<td>Technological Pedagogical Content Knowledge</td>
<td>4.04</td>
<td>0.58</td>
</tr>
<tr>
<td>Full Survey</td>
<td>3.99</td>
<td>0.66</td>
</tr>
</tbody>
</table>

**Technology Knowledge**

TK is the first domain and it contains seven items to measure how faculty use technology across a continuum of low to high tech tools, and the skills required to use technology to facilitate a learning goal (Schmidt et al., 2009). The mean and standard deviation of each question can be found in Table 4.3. The second statement, “I can learn technology easily” produced the strongest mean score of 4.17 ($SD = 0.71$). “I know about a lot of different technologies” was statement five, and also had the weakest mean score of 3.28 ($SD = 0.67$). The mean score of the TK subscale was 3.82 ($SD = 0.76$).
Overall, faculty responses regarding technology knowledge indicate that while they feel they can learn technology easily, they do not know a lot about different technologies.

Table 4.3 Descriptive Statistics for Each Technology Knowledge Subscale Item (N=18)

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.72</td>
<td>0.96</td>
</tr>
<tr>
<td>2</td>
<td>4.17</td>
<td>0.71</td>
</tr>
<tr>
<td>3</td>
<td>3.89</td>
<td>0.47</td>
</tr>
<tr>
<td>4</td>
<td>3.78</td>
<td>1.0</td>
</tr>
<tr>
<td>5</td>
<td>3.28</td>
<td>0.67</td>
</tr>
<tr>
<td>6</td>
<td>4.0</td>
<td>0.59</td>
</tr>
<tr>
<td>7</td>
<td>3.89</td>
<td>0.58</td>
</tr>
</tbody>
</table>

**Content Knowledge**

Content Knowledge (CK) is the second domain and it contained two items to measure what faculty learned about online teaching as a result of completing the Online Pedagogy Program. The mean and standard deviation of each question can be found in Table 4.4. The eighth item, “I have sufficient knowledge about online teaching” produced a mean score of 4.06 (SD = 0.64). The mean score of 4.06 out of 5 reflects that faculty agree regarding having sufficient knowledge for teaching online. The ninth item, “I have various ways and strategies of developing my understanding of online teaching” produced a mean score of 3.89 (SD = .58). The mean score of 3.89 out of 5 reflects that faculty are mostly in agreement regarding strategies they use to develop their understanding of online teaching. The mean score of the CK subscale was 3.97 (SD = 0.61). Overall, regarding content knowledge, faculty responses indicate they are more strongly in agreement about have sufficient knowledge for online teaching, and are less in agreement regarding strategies they use to develop their understanding of online teaching.

Table 4.4 Descriptive Statistics for Content Knowledge Subscale Items (N=18)

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>4.06</td>
<td>0.64</td>
</tr>
<tr>
<td>9</td>
<td>3.89</td>
<td>0.58</td>
</tr>
</tbody>
</table>
Pedagogical Knowledge

Pedagogical Knowledge (PK) is the third domain and it contained seven items to measure the methods and processes of teaching and knowledge about assessment, student learning, and classroom management in online classes. The mean and standard deviation of each question can be found in Table 4.5. The 13th item, “I can assess online student learning in multiple ways” produced the strongest mean score of 4.33 (SD = 0.69). The 15th item, “I am familiar with common student misunderstandings and misconceptions about online learning” produced the weakest mean score of 3.78 (SD = 0.81). The mean score of the PK subscale was 4.13 (SD = 0.64). Overall, regarding content knowledge, responses indicate stronger faculty agreement about their ability to assess their online students using different methods, and less agreement regarding students’ misunderstandings about online learning.

Table 4.5. Descriptive Statistics for Each Pedagogical Knowledge Subscale Item (N=18)

<table>
<thead>
<tr>
<th>Item 10</th>
<th>Item 11</th>
<th>Item 12</th>
<th>Item 13</th>
<th>Item 14</th>
<th>Item 15</th>
<th>Item 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.22</td>
<td>4.28</td>
<td>4.22</td>
<td>4.33</td>
<td>3.94</td>
<td>3.78</td>
</tr>
<tr>
<td>Std. Dev</td>
<td>0.55</td>
<td>0.46</td>
<td>0.55</td>
<td>0.69</td>
<td>0.73</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Pedagogical Content Knowledge

Pedagogical Content Knowledge (PCK) is the fourth domain and it contained one item to measure faculty knowledge of what students bring to the learning situation, including their learning strategies combined with teaching approaches to develop better teaching practices in the content areas (Koehler & Mishra, 2009; Schmidt et al., 2009). The 17th item, “I know how to select effective teaching approaches to guide student thinking and learning when teaching online” produced a mean score of 3.83 (SD = 0.71).
This reflects that faculty were mostly in agreement that they could select effective teaching approaches to guide student thinking and learning when teaching online.

**Technological Content Knowledge**

Technological Content Knowledge (TPK) is the fifth domain and it contained one item to measure faculty knowledge about technologies that could be used for understanding online teaching and learning. Item 18, “I know about technologies that I can use for understanding online teaching and learning” produced a mean score of 3.83 ($SD = 0.71$). This score is consistent with Pedagogical Content Knowledge score and reflects that faculty mostly agreed that they know about technologies for understanding online teaching and learning.

**Technological Pedagogical Knowledge**

Technological Pedagogical Knowledge (TPK) is the sixth domain and it contained five items to measure “knowledge of how various technologies can be used in teaching and understanding that using technology may change the way an instructor teaches” (Schmidt et al., 2009, p. 134). Item 22, “I am thinking critically about how to use technology in my online classes” produced the strongest mean score of 4.28 ($SD = 0.57$). The mean score of the TPK subscale was 4.07 ($SD = 0.68$). The mean and standard deviation of each question can be found in Table 4.6. Two items produced the weakest mean scores. Item 19, “I can choose technologies that enhance the teaching approaches for a lesson” produced a mean score of 3.94 ($SD = 0.54$) and item 20, “I can choose technologies that enhance students’ learning for a lesson” also produced a mean score of 3.94 ($SD = 0.64$). Overall, regarding technological pedagogical knowledge, faculty responses indicate that while they are more in agreement about thinking critically about
technology integration in their online classes, they are less in agreement regarding technologies that enhance the teaching approaches to strengthen students learning.

Table 4.6 Descriptive Statistics for each Technological Pedagogical Knowledge Subscale Items (N=18)

<table>
<thead>
<tr>
<th></th>
<th>Item 19</th>
<th>Item 20</th>
<th>Item 21</th>
<th>Item 22</th>
<th>Item 23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.94</td>
<td>3.94</td>
<td>4.00</td>
<td>4.28</td>
<td>4.17</td>
</tr>
<tr>
<td>Std. Dev</td>
<td>0.54</td>
<td>0.64</td>
<td>0.97</td>
<td>0.57</td>
<td>0.62</td>
</tr>
</tbody>
</table>

**Technological Pedagogical Content Knowledge**

Technological Pedagogical Content Knowledge (TPCK) is the seventh domain and it contained three items to measure the knowledge required by faculty for integrating technology into their teaching using appropriate pedagogical methods and technologies.

The mean and standard deviation of each question can be found in Table 4.7. Two questions, items 24 and 26, produced the strongest mean scores 4.06 (SD = 0.54). The first item, “I can use strategies that combine content, technologies, and teaching approaches that I learned about in the Online Pedagogy Program in my online classroom” reflect faculty responses are in agreement regarding ability to combine content, technologies, and teaching approaches they learned about in the Online Pedagogy Program. Item 26, “I can choose technologies to use in my online classroom that enhance what I teach, how I teach, and what students learn,”, reflect faculty responses are in agreement about their ability to integrate technology to enhance teaching and learning. Item 25, “I can choose technologies that enhance the content for a lesson” produced a slightly weaker mean score of 4.00 (SD = 0.59). Faculty responses indicate agreement regarding the ability to choose technologies to enhance lesson content. The mean score of the TPCK subscale was 4.04 (SD = 0.58). Overall, regarding technological
pedagogical content knowledge, faculty responses indicate agreement regarding ability to combine content, technologies, and teaching approaches that enhance teaching and learning.

Table 4.7 Descriptive Statistics for Technological Pedagogical Content Knowledge Subscale Items (N=18)

<table>
<thead>
<tr>
<th></th>
<th>Item 24</th>
<th>Item 25</th>
<th>Item 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>4.06</td>
<td>4.00</td>
<td>4.06</td>
</tr>
<tr>
<td>Std. Dev</td>
<td>0.54</td>
<td>0.59</td>
<td>0.64</td>
</tr>
</tbody>
</table>

The mean score of the faculty responses to the full TPACK was 3.99 (SD = 0.66) and is a very strong indicator of faculty perceptions about readiness and confidence to integrate technology into their teaching practices.

**Online Pedagogy Program End-of-Course Evaluation**

The third data source in this study was the Online Pedagogy Program End-of-Course Evaluation. This instrument measured faculty’s pedagogical knowledge related to the delivery of a distance education course. Data were analyzed from four different cohorts starting with faculty who completed the Online Pedagogy Program during the Summer 2021 and ending with the faculty who completed the Online Pedagogy Program during the Summer 2022. The Online Pedagogy Program End-of-Course Evaluation instrument consisted of four quantitative analysis sections (see Appendix C). The first section of the instrument, Training Quality, consisted of 15 questions about their overall perceptions of the quality of the training, and asked participants to respond using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The second section of the instrument, Training Elements, contained four questions and asked participants “How useful were the following four training elements?” and assessed
perceptions about videos, discussions, assignments and virtual lab sessions. Participants responded using a 5-point Likert scale ranging from 1 (not at all useful) to 5 (extremely useful). The third section, Learning Experience, contained only one question and asked participants, “Overall, how would you rate this training as a learning experience?” Participants responded using a 5-point Likert scale ranging from 1 (extremely poor) to 5 (excellent). The final quantitative section, Overall Satisfaction, contained two questions and asked participants “Overall, how satisfied were you with how this training met your needs for pedagogy for online teaching?” and “Overall, how satisfied were you with the course navigability?”. Participants responded to both questions using a 5-point Likert scale ranging from 1 (very dissatisfied) to 5 (very satisfied). All of the 5-point Likert scale quantitative data was calculated together.

**Reliability.** Reliability in a study means that the scores from an instrument are stable and consistent (Creswell & Guetterman, 2019). The Cronbach’s Alpha score for the total Online Pedagogy Program End-of-Course Evaluation was 0.95, which demonstrates excellent internal consistency.

**Descriptive statistics.** Descriptive statistics, such as mean and standard deviation, allow a researcher to describe a phenomenon and summarize characteristics and perspectives of a population based on the overall average and the amount of variability of the scores to the mean (Mertens & Wilson, 2019). The mean scores and standard deviations for the full Online Pedagogy Program End-of-Course Evaluation as well as by each cohort can be found in Table 4.8. The mean score of the full Online Pedagogy Program End-of-Course Evaluation was 4.15 ($SD = 1.00$). The mean score for Summer 2021 cohort was 4.08 ($SD = 1.09$). For the Fall 2021 cohort, the mean score was
4.14 ($SD = 0.94$). The Spring 2022 cohort yielded a mean score of 4.45 ($SD = 0.64$). The Summer 2022 cohort produced a mean score of 4.36 ($SD = 0.82$).

Table 4.8 Descriptive Statistics for the Online Pedagogy Program End-of-Course Evaluation (N=54)

<table>
<thead>
<tr>
<th>Cohort</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 2021</td>
<td>29</td>
<td>4.08</td>
<td>1.09</td>
</tr>
<tr>
<td>Fall 2021</td>
<td>16</td>
<td>4.14</td>
<td>0.94</td>
</tr>
<tr>
<td>Spring 2022</td>
<td>4</td>
<td>4.45</td>
<td>0.64</td>
</tr>
<tr>
<td>Summer 2022</td>
<td>5</td>
<td>4.36</td>
<td>0.82</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>4.15</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Overall, the item, “How useful were the following training elements? Assignments” received the highest mean score of 4.42 ($SD = 0.94$). The mean score of 4.42 out of 5 reflects that faculty are in strong agreement that the Assignments used in the Online Pedagogy Program training to be useful. The item, “Online discussions were valuable in helping me appreciate different perspectives” resulted in the lowest mean score of 3.92 ($SD = 1.11$). The mean score of 3.92 out of 5 reflects that faculty were nearly in agreement that online discussions were valuable in helping them appreciate different perspectives.

**Summer 2021 cohort.** The Summer cohort consisted of 29 participants, which continued the trend of high enrollment numbers in the online pedagogy program due to the requirement that all faculty must be trained in online teaching as a result of the COVID-19 pandemic. The item, “Overall, how satisfied were you with course navigability?” produced the highest mean score of 4.45 ($SD = 0.57$). This score reflects faculty perspectives that the training was easy to navigate. The item, “The training was challenging” produced the lowest mean score of 3.75 ($SD = 1.21$). This reflects faculty
perspectives that the training was not difficult and the largest dispersion of data around the mean score.

**Fall 2021 cohort.** With 16 participants, the Fall cohort signaled a decline in enrollment in the Online Pedagogy Program. In contrast to the Summer 2021 cohort, the item, “The training was challenging” produced the highest mean score 4.69 ($SD = 0.48$). This score reflects that faculty strongly agreed that the training was challenging, and the standard deviation reflects a more closely aligned dispersion around the mean score. The item, “The course instructions were clear” produced the lowest mean score of 3.69 ($SD = 0.94$). This indicates that faculty had lower perceptions about the clarity of assignments, and their responses were more widely dispersed around the mean score.

**Spring 2022 cohort.** The Spring 2022 cohort, consisting of four participants, continued to see a smaller cohort size when compared to earlier cohorts in the Online Pedagogy Program. The three items that produced the highest mean scores of 4.75 ($SD = 0.50$) were “The training developed my ability to think critically about online teaching”, and “How useful were the following training elements? Assignments”, and “How useful were the following training elements? Virtual lab sessions”. This indicates that faculty felt very strongly that these items were beneficial and the lower standard deviation demonstrates their responses were more closely centered about the mean score. The item that produced the lowest mean score of 3.75 ($SD = 1.26$) was “How useful were the following training elements? Discussions.” This indicates that faculty perceived the discussions as less useful and the larger standard deviation shows the greatest dispersion of responses around the mean score.
Summer 2022 cohort. The Summer 2022 cohort had five participants. The highest scoring items were, “The training provided guidance on how to become a competent online instructor” and “How useful were the following training elements: Assignments”. Both items produced a mean score of 4.80 ($SD = 0.44$). The mean score of 4.80 out of 5 reflects that faculty found the assignments and the training very useful in helping them develop their online teaching competencies. The item, “How useful were the following training elements? Virtual lab sessions produced the lowest mean score of 3.75 ($SD = 1.20$). The mean score of 3.75 out of 5 reflects that faculty did not find virtual lab sessions to be very helpful. The standard deviation score reflects a larger distribution of responses around the mean score.
Chapter Summary

As this was a mixed-methods action research study, both quantitative and qualitative data were collected and analyzed. The three quantitative data sources were the (a) FRTO survey, (b) the TPACK survey, and (c) the Online Pedagogy Program End-of-Course Evaluation survey and each were analyzed using descriptive statistics.

Overall, the analysis of the data from the FRTO showed that faculty to have the strongest confidence in their responding to students’ questions, but had a more neutral response regarding their confidence to use online collaborate tools. Regarding the faculty’s perceptions of their readiness to teach, the statement where the faculty response offered the strongest agreement was “Send announcements/email reminders to course participants” reflecting that faculty find it to be very important to send announcements/email reminders to their course participants. Overall, the FRTO data showed that faculty felt both confident and ready to teach an online course after completing the Online Pedagogy Program training.

The second data source was the TPACK survey. All seven sections of the TPACK were reported separately, and the statement “I can assess online student learning in multiple ways,” found in the Pedagogical Knowledge subsection, produced the strongest mean score. “I know about a lot of different technologies” from the Technology Knowledge subsection produced the lowest mean score. Overall analysis of the TPACK showed faculty perceptions about their readiness and confidence to integrate technology into their teaching practices to be strong.
The third data source in this study was the Online Pedagogy Program End-of-Course Evaluation and it measured faculty perceptions about the quality of the Online Pedagogy Program. The mean score and standard deviations were reported for four different cohorts. The Spring 2022 cohort produced the highest mean score and the Summer 2021 cohort produced the lowest mean score. The overall mean score on the Online Pedagogy Program End-of-Course Evaluation revealed the faculty were mostly in agreement about the quality of the Online Pedagogy Program.

**Qualitative Findings & Interpretations**

A qualitative design allowed the participants the opportunity to express their ideas and opinions about how they experienced the online pedagogy training. The researcher focused on learning about Faculty perspectives, and through this interpretive process, their voices contributed to creating a more holistic understanding of the topic through their lived experiences (Tracy, 2020). Qualitative data from one open-ended question in FRTO, two open-ended questions in the OPP EOC, and the semi-structured individual interviews were analyzed using inductive analysis; meaning that the common themes of the data were extracted from the “bottom-up” (Lodico, Spalding, & Voegtle, 2006, p. 5). Specifically, inductive analysis followed an approach where the researcher collected data, investigated the data to find themes, and then provided an overview of the themes and patterns in the data (Lodico et al., 2006; Thomas, 2006). Conducting four rounds of first cycle coding (In Vivo Coding, Descriptive Coding, Process Coding and Structural Coding) produced 1182 codes with many codes duplicated throughout the coding process. For example, the code improvements to training was tagged 61 times, and the code strengths of training was tagged 57 times. However, when counted as an
unduplicated code, each code was only included once in the data analyzed. Therefore, 611 unduplicated codes were generated and included in the analysis process (see Table 4.10). Pattern coding took place for second cycle coding which produced 11 categories and eventually three themes emerged.

Table 4.9 Summary of Qualitative Data Sources

<table>
<thead>
<tr>
<th>Qualitative Data Source</th>
<th>Number of Sources</th>
<th>Number of Unduplicated Codes Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Readiness Teach Online Survey</td>
<td>1 Open-ended question</td>
<td>8</td>
</tr>
<tr>
<td>Online Pedagogy Program End-of-Course Evaluation</td>
<td>2 Open-ended questions</td>
<td>250</td>
</tr>
<tr>
<td>Semi-structured individual interviews</td>
<td>8 interviews</td>
<td>353</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>611</td>
</tr>
</tbody>
</table>

Before I began first cycle coding, I used Zoom to transcribe the semi-structured individual interviews, then I reviewed the transcripts to ensure consistency with the audio recording, and finally I corrected word form and grammatical errors found in the transcript. I removed identifying information about the participants and assigned pseudonyms to protect their anonymity and privacy in the qualitative data report. I then used Delve, a CAQDAS software program, to code the data. A sentence-by-sentence unit of analysis took place of all of the qualitative data for each round of coding.

**First Cycle Coding**

I began to analyze my semi-structured individual interview transcript data with In Vivo Coding, also referred to as verbatim coding (Saldaña, 2021) to assign codes to data based on the words or phrases that were used by the participants themselves. The goal of In Vivo Coding was to create a code or label that accurately reflects the meaning and context of those words or phrases as closely as possible, and to stay close to the participants’ voices (Saldaña, 2021). I used this method to identify the key concepts or themes that were present in the data, and to understand how participants talked about,
interpreted and made sense of their experiences. For example, in the semi-structured individual interview, Arlo stated “There’s a few other things that comes to mind, like how I can create an announcement in it”. I coded this sentence as “I can create an announcement” to use the words Arlo used and stay close to the original meaning (see Table 4.11). Other examples of In Vivo codes produced were “piqued my interest”, “online pedagogy was interesting”, “unprepared for online pedagogy”, and “making sure material is accessible”. Upon completing the In Vivo method of coding, 120 codes were generated.

Table 4.10 Example of In Vivo Coding

<table>
<thead>
<tr>
<th>Semi-Structured Individual Interview Transcript</th>
<th>Coding Examples</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arlo: There’s a few other things that come to my mind, like how I can create an announcement</td>
<td>hands-on training how to be consistent with information how to motivate students i can create an announcement i can use some of it i will use training for both onsite and online</td>
<td>“I can create an announcement”</td>
</tr>
</tbody>
</table>

Next, I used Descriptive Coding, or topic coding, to organize and categorize data to describe the content, the topic of a passage, and the substance of the data (Saldaña, 2021). The codes generated through Descriptive Coding were used to identify key themes, patterns, and relationships within the data. This process helped to develop a deeper understanding of the research questions. For example, in the semi-structured individual interview, Oakley said, “So, I think if I had to choose, I think every single one of them brought me something, but the assessment was the least influential on my being ready”. I coded this statement as assessment least influential on readiness because it demonstrated a clear concept that was related to RQ #2 (see Table 4.12). Other examples of Descriptive codes produced were alt text description, Bloom’s taxonomy, different
approaches to communication, organize online class and virtual labs are a good thing.

Upon completing the Descriptive Coding, 275 codes were generated.

Table 4.11 Example of Descriptive Coding

<table>
<thead>
<tr>
<th>Semi-Structured Individual Interview Transcript</th>
<th>Coding Examples</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oakley: So, I think if I had to choose, I think every single one of them brought me something, but the assessment was the least influential on my being ready</td>
<td>articulating outcomes assess people before instructing assessing learners’ needs assessment least influential on readiness assessment strategies capstone project tied everything together different methods of testing students</td>
<td>assessment least influential on readiness</td>
</tr>
</tbody>
</table>

Next, I used Process Coding to analyze data and identify action in the data (Saldaña, 2021). I organized and categorized data that focused on understanding the process or sequence of events within the data, and used gerunds exclusively when generating a code (Saldaña, 2021). For example, in the semi-structured individual interview, Genevieve said, “Uh, that is one of the ways I can show up for students in the sense of inclusiveness and diversity”. I coded this statement as showing up for diversity and inclusivity to imply actions that emerged in particular sequences (see Table 4.13).

Additional examples of Process codes produced were adding links, building a course, having a support system, increasing confidence, and using Universal Design. Upon completing the Process Coding method, 212 codes were generated.

Table 4.12 Example of Process Coding in Delve

<table>
<thead>
<tr>
<th>Semi-Structured Individual Interview Transcript</th>
<th>Coding Examples</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genevieve: Uh, that is one of the ways I can show up for students in the sense of inclusiveness and diversity</td>
<td>adding links building a course collaborating between people having a support system showing up for diversity and inclusivity increasing confidence using Universal Design</td>
<td>Showing up for diversity and inclusivity</td>
</tr>
</tbody>
</table>

89
Finally, I used *Structural Coding* to organize and categorize data in a systematic and consistent way. *Structural Coding* was especially appropriate for semi-structured individual interview transcripts, and analyzing the research questions that framed the interview (Saldaña, 2021). For example, in the semi-structured individual interview, Bob said, “Presenting those uh [other programs you could embed in Blackboard, like Flipgrid to get students involved] with that material to me, showing what's available to me to get students involved definitely makes me feel more confident to teach online”. From this data, the *Structural code RQ #3 Confidence* was generated as what Bob was stating related to Research Question #3 of this study (see Table 4.14). Other examples of *Structural codes* produced were *RQ #1 Positive, RQ #1 Negative, RQ #2 Readiness, and RQ #3 Confidence*. Upon completing the *Structural Coding* method, four codes were generated
## Table 4.13 Example of Structural Coding in Delve

<table>
<thead>
<tr>
<th>Participant’s Words</th>
<th>Source</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>The training was clear and concise.</td>
<td>OPP EOC Evaluation</td>
<td>RQ #1 Positive</td>
</tr>
<tr>
<td>The only suggestion I have would be to have deadlines for each module’s assignments, rather than the end-of-the-training deadline.</td>
<td>OPP EOC Evaluation</td>
<td>RQ #1 Negative</td>
</tr>
<tr>
<td>The videos helped to gain the knowledge, discussion boards helped to have a look into other instructors thought process and assignments were good self-assessment tool for me.</td>
<td>OPP EOC Evaluation</td>
<td>RQ #2 Readiness</td>
</tr>
<tr>
<td>So, I think, presenting those uh [other programs you could embed in Blackboard, like Flipgrid to get students involved] with that material to me, showing what’s available to me to get students involved definitely makes me feel more confident to teach online.</td>
<td>Semi-Structured Individual Interview Transcripts</td>
<td>RQ #3 Confidence</td>
</tr>
</tbody>
</table>

## Code Mapping

To better manage and organize the corpus of codes generated from the four rounds of first cycle coding, I used code mapping to visually represent the relationships between different codes and enhance the trustworthiness of the analysis (Saldaña, 2021). Prior to starting code mapping, I exported all of the codes generated in Delve into an Excel spreadsheet. To review and collaborate with my dissertation co-chair, the Excel spreadsheet was then uploaded into a Google Sheet. Next, I merged redundant codes and combined similar codes together, then used colors to identify subgroups that were inherently developing (see Figure 4.1). Through code mapping, the corpus of 611 unduplicated codes was reduced down to 23 subgroupings of codes.
After I completed code mapping I used the second cycle coding method of pattern coding to discover patterns, categories, and emerging themes (Saldaña, 2016). In qualitative studies, pattern coding is comparable to statistical factor analysis used in quantitative studies (Saldaña, 2021). Pattern coding consolidated first cycle codes and the subgroupings into even more closely related units of analysis. For example, seeing a pattern about presence from the subgroupings of social presence, collaborating and communicating, discussing with cohorts, and teaching presence led to the category teaching and social presence (CoI). Through pattern coding and the inductive analysis 11 categories were developed: (a) teaching and social presence (CoI), (b) assignments, assessment and feedback, (c) online pedagogy novices, (d) accessibility and inclusivity,
(e) dissatisfaction, (f) recommendations, (g) satisfaction, (h) ability to “do”, (i) tech tools, (j) confidence, and (k) applying theory.

**Teaching and Social Presence (CoI).** The first category, teaching and social presence (CoI), was created out of 77 codes and subsumed four subgroups of codes (social presence, collaborating and communicating, discussing with cohorts, teaching presence). Examples of codes included *group discussions, collaborating between people, interaction component, and instructor presence* (see Figure 4.2). Analysis of these codes revealed in online teaching, a strong teaching and social presence is important for faculty and students. Key components of the Community of Inquiry framework (Garrison et al., 2000) include social presence, teacher presence, and cognitive presence. Garrison et al., (2000) explain that connecting social presence to teaching and learning is important because students are more likely to demonstrate cognitive presence when social presence is established. Furthermore, students are more likely to establish social presence when instructors demonstrate teaching presence by designing and facilitating cognitive and social processes (Anderson, Rourke, Garrison, & Archer, 2001). When these components are not balanced or are lacking in online faculty training, faculty learners may get the impression that online learning is solely about posting materials, setting up quizzes or tests, or creating discussion topics (Elliott et al., 2015). The *In Vivo code, “allowing students to express themselves”* identified social presence, which when combined with the *Process code of collaborating between people*, supported the pattern in the data about social presence. For example, from the semi-structured interviews,

*Henry:* Allowing my students to express themselves in different ways.
*Oakley:* I think the collaboration between people who took the course was one of the things that increased my sureness.
Another pattern that was seen in the data was teaching presence. Again, the In Vivo code, “more instructor availability” identified a desire for more interaction with instructors, which when combined with the Process code of increasing instructor presence supported the pattern in the data about teaching presence. This could be seen in an anonymous comment from the OPP EOC evaluation, “I was disappointed that there wasn't more interaction or feedback between the instructors and the students” and the semi-structured interview response of Alex, “More hands-on engagement and interaction with colleagues would have been more helpful.” These comments further reinforce the need for teacher presence in building a strong community of learners.

Figure 4.2 Codes and Subgroups Subsumed into the Category Teaching and Social Presence (CoI)

Assignments, assessment and feedback. The second category, assignments, assessment and feedback, was created out of 58 codes and subsumed three subgroups of codes (feedback, assignments, examples). Examples of codes included assessment strategies, simplifying directions, “assignment instructions”, “grade assignments promptly”, and give examples (see Figure 4.3). Analysis of these codes aligned with the
findings of Rienties et al. (2013), having revealed assignments and assessments need clarity, rubrics, exemplar examples, and timely feedback. The In Vivo code, “assignment instructions” identified a need to clarify instructions, which when combined with the Process code of providing examples supported the pattern in the data about assignments. Another pattern that was seen in the data from two qualitative sources was feedback. The In Vivo code, “grade assignments promptly” identified feedback, which when combined with the Process code of wondering about accuracy of assignments supported the pattern in the data about assignments, assessments and feedback. For example, three faculty responded on the OPP EOC evaluation response:

Anonymous: The assignment instructions could have been simplified.
Anonymous: I would like an example of what was required for the assignment for clarity. I think more examples could help with future classes as I found myself a little confused after watching the videos and reading the material on what was required for some assignments.
Anonymous: I submitted assignments long before they were due and it took a long time for them to be graded. I was uncertain for a long time if I had done the assignments correctly.

The semi-structured interview response of Henry, “Let students express themselves in different ways when doing assignments. Think outside the box when you’re asking your students to do assignments,” demonstrates his understanding of the importance of assignment instructions and providing examples when training faculty to teach online. Analysis of these codes further support the faculty perspective on the need for clarity in assignment instructions, providing examples, and grading assignments promptly.
The third category, online pedagogy novices, was created out of 27 codes and subsumed two subgroups of codes (new to online pedagogy, never taken/taught online before). Examples of codes included “I had never taken an online course before”, navigating an online class, lecturing online, unprepared for online pedagogy, and “never taught an online class” (see Figure 4.4). Combined, these comments reveal faculty need training to teach online. Analysis of these codes revealed findings that aligned with what Rienties et al. (2013) found, faculty were novice about teaching online, and taking an online class from a student perspective was beneficial for them. From Mary’s semi-structured individual interview response, “I had never taken an online course before. I never taught an online class,” the In Vivo code, “never taken an online course before” identified how faculty were inexperienced with online learning from the perspective of a student. When combined with the Process code of training for online teaching supported the pattern in the data about faculty being unfamiliar with online pedagogy. Another pattern that was seen in the data was that faculty were still elementary in teaching online courses. For example, the In Vivo code, generated from an
OPP EOC evaluation response, “never taught an online course” supported the pattern in the data about faculty being online pedagogy novices.

Figure 4.4 Codes to Online Pedagogy Novices Category

Accessibility and inclusivity. The fourth category, accessibility and inclusivity, was created out of 48 codes that subsumed two subgroups of codes (accessibility/inclusivity, UDL). Examples of codes included “important to reach everyone,” “accessibility topic was very helpful”, using universal design, inclusiveness and diversity, and increasing accessibility (see Figure 4.5). Consistent with the findings of Burgstahler (2020), analysis of these codes revealed the importance of creating inclusive and diverse learning environments, in both face-to-face as well as online courses. Mary commented in the semi-structured individual interview “I think the one thing that really stands out to me now, since I have developed an online course, is how important it is to reach everyone”. From this response the In Vivo code, “important to reach everyone” when combined with the Process code of enjoying the learning about UDL supported the pattern in the data about increasing accessibility. A descriptive code, make everyone feel comfortable regardless of ability, was created out of Alex’s comment during the semi-structured individual interview, “and again, the goal is to make everyone
students feel comfortable, being online regardless, they have a disabilities or not” to support the pattern in the OPP EOC evaluation responses to reflect faculty perspective about the importance of designing instruction for all learners. For example, an anonymous OPP EOC evaluation response, “making online learning accessible”. Another pattern that was seen in the data was about the importance of reaching all learners. For example, an In Vivo code, “point of universal design” was generated from Gabbro’s semi-structured individual interview response “That’s the point of Universal Design, right? It’s for all students, not just those that maybe have certain disabilities”, and when combined with the OPP EOC evaluation responses, the Process code of using universal design was created which supported the pattern in the data about accessibility and inclusivity. Structural coding for RQ #1 POSITIVE was added to the comment “excited about UDL” from an anonymous OPP EOC evaluation response.

<table>
<thead>
<tr>
<th>Accessibility and Inclusivity</th>
<th>UDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>accessibility checker</td>
<td>backwards design</td>
</tr>
<tr>
<td>accessibility of documents</td>
<td>Blooms taxonomy</td>
</tr>
<tr>
<td>accessibility topic was very helpful</td>
<td>different modes of presenting information</td>
</tr>
<tr>
<td>accessible closed captioning</td>
<td>excited about UDL</td>
</tr>
<tr>
<td>accessible for all learners</td>
<td>important to reach everyone</td>
</tr>
<tr>
<td>checking accessibility</td>
<td>inclusiveness and diversity</td>
</tr>
<tr>
<td>comfortable and accessible</td>
<td>incorporating UDL</td>
</tr>
<tr>
<td>documents are readable</td>
<td>make everyone feel comfortable regardless of ability</td>
</tr>
<tr>
<td>ensuring accessibility</td>
<td>mentally impaired student</td>
</tr>
<tr>
<td>increasing accessibility</td>
<td>showing up for diversity and inclusiveness</td>
</tr>
<tr>
<td>make online learning accessible</td>
<td>teaching differently abled students</td>
</tr>
<tr>
<td>making classes inclusive</td>
<td>UDL assignment</td>
</tr>
<tr>
<td>making content accessible</td>
<td>Universal Design for Learning</td>
</tr>
<tr>
<td>making documents accessible</td>
<td>using instructional design</td>
</tr>
<tr>
<td>making our classes more inclusive</td>
<td>using universal design</td>
</tr>
</tbody>
</table>

Figure 4.5 Examples of Codes Subsumed into the Accessibility and Inclusivity Category

**Dissatisfaction.** The fifth category, dissatisfaction, was created out of 26 codes and subsumed one subgroup of codes (dislike/not helpful/dissatisfaction). Examples of
codes included *lacking interaction, “a lot I will never use”, felt very stressed, and could have been much better* (see Figure 4.6). Consistent with other scholarly findings of program evaluation (Gregory et al., 2020; Rizzuto, 2017), analysis of these codes revealed faculty expressed dissatisfaction with some aspects of OPP. One point of dissatisfaction was lacking interaction between instructor and students. For example, an anonymous comment from the OPP open-ended question response was “I was disappointed that there wasn’t more interaction or feedback between the instructors and the students. It appeared that they were not modeling what we were teaching”. Henry’s response from the semi-structured individual interviews “lacking interaction between instructor and students” also expresses dissatisfaction. The *In Vivo code* generated, “*not modeling what we were teaching*” identified that faculty learners in the OPP felt a disconnect to the course facilitators, and also experienced a disconnect between pedagogy and their experience in the training. When combined with the *Process code of lacking interaction* that was also generated from another semi-structured individual interview response, supported the pattern in the data about the OPP training “could have been much better.”
Recommendations. The sixth category, recommendations, was created out of 83 codes and subsumed four subgroups of codes (suggestions/ recommendations, feedback, clarifications, students’ perspectives). Examples of codes included clarifying assignments, making the training more discipline specific, more evening webinars, needing feedback sooner, considering students’ perspective, and expanding training (see Figure 4.7). Analysis of these codes aligned with the outcomes of Rizzuto (2017) and Maina et al. (2015) which also revealed recommendations offered to OPP course designers & facilitators regarding the design and delivery of future OPP courses. As found in the OPP EOC evaluation, “I would like an example of what was required for the assignment for clarity” supported the recommendation to clarify assignments. From that response, the In Vivo code, “example of what was required” was created. Identifying the need for modeling assignments was another recommendation faculty offered in their OPP EOC evaluation. For example, “clarify what was expected”. From that a Descriptive code of clarify deliverables was generated, which when combined with the Process code
of improving directions supported the pattern in the data about recommendations for changes to be made to the OPP. Another perspective offered in the OPP EOC evaluation was “I’d suggest more evening webinars versus morning or late afternoon due to my schedule” from which the code of more evening webinars was generated. A different example of data that turned into a code was also from the OPP EOC evaluation, “I would prefer examples of Geo-physics, Astronomy, and Climatology” supported the Process code making the training more discipline specific. Finally, the statement “I think that the training should be expanded” supported the Descriptive code expand the training.

| clarifying assignments       |
| communicating objectives more clearly |
| expanding assignment guidelines |
| expanding training           |
| explaining how technology will be used for learning faster response |
| example of what was required |
| feedback on homework         |
| getting feedback faster      |
| lacking timley feedback      |
| clarify deliverables         |
| clarify what was expected    |
| clarifying assignments       |
| best ability in students     |
| considering students’ perspectives |
| elderly students             |
| experiencing an online class as a students |
| getting the best potential from students |
| considering the students perspective |

Figure 4.7 Examples of Codes Subsumed into the Recommendation’s Category

**Satisfaction.** The seventh category, satisfaction, was created out of 99 codes and subsumed three subgroups of codes (happy/helpful, enjoy/excitement, opened my
eyes/desire to learn). Examples of codes included training is very beneficial, great value, enjoying the modules, and “open my eyes to online only” (see Figure 4.8). Analysis of these codes aligned with the findings of Downing and Dyment (2013) and Parsons et al. (2019) revealing that faculty saw the value in participating in the OPP. As found in Genevieve’s semi-structured individual interview response, “I consider it very, very valuable” that resulted in the In Vivo code, “very valuable”, they identified satisfaction after having completed the OPP.

Another comment by Alex in their semi-structured individual interview, “The training is very beneficial. It opened my eyes to online teaching” supported the In Vivo code, “very valuable” When combined with the Process code of learning so much that was created from an OPP EOC open-ended response, “I learned a lot from the videos, the deliverable, the virtual labs and the readings” the pattern found in the data about the OPP training being very beneficial was supported. Another pattern that was seen in the data was learning new perspectives about online teaching. For example, the anonymous OPP EOC open-ended response of “opening my eyes to an online-only educational world” led to the development of the In Vivo code, “opening my eyes” which when combined with the Process code of learning experience I am excited about based on Alex’s response from the semi-structured individual interview “It was a learning experience I am excited about” supported the pattern in the data about having learned new aspects of online teaching, further supporting the faculty’s perception of satisfaction upon completing the OPP.
The eighth category, ability to “do,” was created out of 37 codes and subsumed two subgroups of codes (create something, ID support). Examples of codes included “feel very comfortable developing an online class,” build modules, instructional designer was invaluable, and create videos (see Figure 4.9). Analysis of these codes revealed an outcome consistent with Viberg et al. (2019), the faculty expressed confidence in their abilities to develop and teach an online class that integrates technology. For example, the In Vivo code, “create an announcement” was developed from an anonymous OPP EOC open-ended response, “I can create an announcement” and identified the faculty members confidence and comfort level in developing this aspect of the online course. When combined with Gabbro’s response from the semi-structured individual interview “More technical aspects of fully building a course” resulted in the creation of a Process code building online course and supported the pattern in the data.
about faculty’s confidence in developing an online class after having completed the OPP. Another pattern that was seen in the data was integrating technology to develop and teach an online class. As supported by Bob’s semi-structured individual interview response “Embedding video links on the blackboard, cause it's a big part of what I learned about in online learning and it's very helpful to create videos,” from which the In Vivo code, “create videos” was generated. When combined with the Process code of embedding video links supported the pattern in the data about their ability to integrate technology.

Figure 4.9 Examples of Codes Subsumed into the Ability to “Do” Category

**Tech tools.** The ninth category, tech tools, was created out of 85 codes and subsumed two subgroups of codes (tech tools, Bb tools only). Example of a Process code included, knowing the tools in Blackboard, which was generated from Bob’s semi-structured individual interview “I think using the different options that are available to you online, whether it's using discussion boards [in Blackboard] or tools like Flipgrid”
and Henry’s semi-structured individual interview “My ability to know the technical tools to create and to moderate and to grade...I feel good there” created the codes tech tools to create and moderate, and knowing technological tools. Analysis of these codes revealed the OPP offered faculty to use nontraditional elements of Blackboard as well as other technology tools. Consistent with the outcomes of Martin (2018), this gave them a sense of confidence with resources available for creating stronger instructional strategies. For example, the In Vivo code, “tech tools to create and moderate” identified Henry’s confidence with using tools. When combined with a FRTO open-ended response of “using technology to give feedback,” which resulted in the creation of the Process code, knowing technological tools, supported the pattern in the data about faculty confidence using Blackboard and technological tools to create stronger instructional strategies. See Figure 4.10 for examples of codes found within the Tech Tools category.

Figure 4.10 Examples of Codes Subsumed into the Tech Tools Category
**Confidence.** The tenth category, confidence, was created out of 40 codes and subsumed one subgroup of codes (confidence without definition/description of). Examples of codes included “increasing my confidence,” “training gave me confidence,” prepared, and looking forward to developing an online class (see Figure 4.11). Analysis of these codes aligned with the research of Hromalik et al. (2019) who also identified how the faculty’s confidence increased in teaching an online course after completing an online teaching program. For example, an OPP EOC open-ended response was “Going into the program, I was struggling to develop engaging online activities for my students. After the program, I had a number of new options in my toolbox and am very confident with the information presented” which resulted in the creation of the In Vivo code, “am very confident.” When combined with Genevieve’s semi-structured individual interview response of “I think the overall um pedagogy program did help increase my confidence,” which resulted in the Process code of increasing in confidence, supported the pattern in the data about faculty’s increased sense of confidence after completing the OPP. Another pattern that was seen in the data was confidence in developing an online class. For example, the In Vivo code, “looking forward to developing an online class” was created out of Alex’s semi-structured individual interview response of “I’m eagerly looking forward to developing another online course.” When combined with the Process code of giving me confidence as found in Arlo’s semi-structured individual interview response, “Through this training, I feel more confident in handling topics online,” supported the pattern in the data about faculty’s increased confidence in developing an online class.
Applying theory. The eleventh category, applying theory to best practices in OL pedagogy, was created out of 28 codes and subsumed one subgroup of codes of the same name (applying theory). Examples of codes included applying theory to practice, putting concepts into practice, and implementing strategies (see Figure 4.12). For example, Arlo’s comment from the semi-structured individual interview “Before that training I had never told the students to form a group and that is something that I have started implementing after completing the training” resulted in the code implementing strategies being formed. Analysis of these codes revealed that upon completing the OPP, faculty were able to apply theory to best practices in online pedagogy. This aligns with the work of Harasim (2012) who also found when training was effective and their participants were also able to apply theory to best online pedagogy practices. The applications of theory were found in a FRTO open-ended question response, “The trainings, peer-mentor, one-on-one time were all very helpful in applying topics to my class,” that led to the development of the In Vivo code, “theory to practice”.

Figure 4.11 Examples of Codes Subsumed into the Confidence Category
When combined with the Process code of putting concepts into practice, which was based on Arlo’s response from the semi-structured individual interview “I am incorporating a lot of online concepts,” supported the pattern in the data about applying knowledge and theory directly into their pedagogy. Another pattern that was seen in the data was implementing strategies. As found in an anonymous OPP EOC evaluation “strategies for making teaching more effective” from which the In Vivo code, “strategies for making teaching more effective” was developed. When combined with the Process code of applying skills directly as found in an anonymous comment from the OPP EOC evaluation, “applying knowledge directly”, supported the pattern in the data about faculty implementing strategies that align with best practices in online teaching.

| activities to keep students engaged |
| applications I could use           |
| applying ideas                    |
| applying knowledge directly       |
| applying skills directly          |
| applying theory to practice       |
| implementing strategies           |
| improving my course               |
| organize and structure online class |
| putting concepts into practice    |
| theory to practice                |
| practical applications            |
| presenting information clearly    |
| putting concepts into practice    |
| showing me tools                  |
| strategies for making teaching more effective |
| liking the ease of use            |

Figure 4.12 Examples of Codes Subsumed into the Applying Theory Category

**Themes and Findings**

Following an iterative process of analyzing the three qualitative data sources, the researcher examined and coded the data to begin categorizing key words and phrases to
group them into themes (Mills, 2018). Themes are statements that explain words or phrases offered by the interviewees, and are built up from concepts that reflect underlying ideas in the data (Rubin & Rubin, 1995). By examining the data obtained from the semi-structured individual interview transcripts and open-ended questions from the surveys, inductive analysis allowed the researcher to gain a deeper understanding of the perspectives of the researched and allowed patterns in meaning in data to be discovered (Mills, 2018). Throughout the iterative first and second cycle coding processes, the researcher engaged in peer debriefing with his dissertation chair to share findings with an expert colleague to improve the quality, validity, and trustworthiness of the research (Mertler, 2020). The dissertation chair offered suggestions and feedback throughout the coding cycles, and helped the researcher to interpret data, which helped see the themes that emerged. From this process, three themes emerged: 1) Faculty experiencing the online pedagogy training from a student perspective accentuated their awareness in creating inclusive and community strong courses; 2) While acknowledging the value in the OPP training, faculty also expressed recommendations based on their dissatisfaction, and 3) Having a stronger understanding of integrating educational technology tools in addition to Blackboard fostered faculty member's confidence and readiness to teach online.

**Theme One: Faculty experiencing the online pedagogy training from a student perspective accentuated their awareness in creating inclusive and community strong courses.** An advantage of online professional development programs that train faculty in online teaching practices is that they provide teachers with the experience of being a student in an online class (Meyer, 2014, as cited in Leary et al.,
Bearing in mind that a great number of faculty members are subject matter experts and lack professional development regarding online teaching, they may not have the skills to create the most successful online learning environments (Meskill & Anthony, 2007). Higher education faculty are comfortable with being subject matter experts in their field, but by experiencing the role of a student in online learning, faculty develop a new perspective in relation to teaching (Niculescu, Rees, & Gash, 2017). Findings from a recent study in faculty online teaching practices noted that the “experience of being an online learner can help them understand the frustrations that students can experience” (Martin et al., 2019, p. 199), and the best online teaching programs allowed faculty to experience high quality online learning from the perspective of being a student (Elliott et al., 2015; Ginzburg et al., 2010). Faculty are inclined to teach in the same way that they were taught, and because many instructors who teach online have never taken an online class, they do not have a point of reference for online teaching (Redmond et al., 2018). Teacher readiness programs have not been able to keep up with the increased need, and few preservice faculty complete courses that will train them to become effective online teachers. Therefore, the experience of being a student in an online class helps faculty better understand the importance of creating courses based on the CoI framework. This theme subsumed the categories (1) teaching and social presence (CoI) (2) assignments, assessments and feedback, (3) online pedagogy novice, (4) accessibility and inclusivity. Table 4.6 below provides a visualization of how theme one emerged.
Table 4.14 Categories Subsumed Within Theme One

<table>
<thead>
<tr>
<th>Qualitative</th>
<th>Code</th>
<th>Category</th>
<th>Theme One</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoyed the interaction on the discussion board (Alex)</td>
<td>Enjoyed interaction on discussion board</td>
<td>Teaching and social presence (CoI)</td>
<td></td>
</tr>
<tr>
<td>The assignment instructions could be simplified (Anonymous); Better to give direct examples (Anonymous); Grading of assignments could have been more prompt. (Anonymous)</td>
<td>“Instructions could be simplified”; Give examples; Grade assignments promptly</td>
<td>Assignments, assessment, and feedback.</td>
<td>Faculty experiencing the online pedagogy training from a student perspective accentuated their awareness in creating inclusive and community strong courses.</td>
</tr>
<tr>
<td>I had never taken an online course. I’ve never taught an online course. (Mary); One has to quickly navigate (Arlo); I was unprepared for online pedagogy, either as a teacher, a developer of a class, and as a participant. (Mary)</td>
<td>“Never taken an online course”; “Never taught an online class”; navigating an online class; “unprepared for online pedagogy”</td>
<td>Online pedagogy novice</td>
<td></td>
</tr>
<tr>
<td>Introduction to making our classes more inclusive. (Genevieve) I think I really zoned in on accessibility, making more documents, PowerPoints accessible. (Gabbro)</td>
<td>“Making our classes more inclusive”; making content accessible; increasing accessibility</td>
<td>Accessibility and inclusivity</td>
<td></td>
</tr>
</tbody>
</table>

Multiple faculty members expressed in their semi-structured individual interview, the benefit of viewing an online course from the perspective of a student and how doing so accentuated their awareness for creating diverse, inclusive, accessible, and community strong courses.

**Genevieve:** I feel the program is very valuable and useful … it felt good to do it with your fellow coworkers, right? I like the discussion boards where we got to answer the question and share how we applied it … it was a nice learning experience.

**Mary:** I was unprepared for online pedagogy, either as a teacher or as a developer or as a student. I had never taken an online course before, so I was really starting from ground zero when I began the online pedagogy program.

**Gabbro:** It is the whole point of Universal Design, right? It’s for all students, not just those that maybe have certain disabilities.

**Arlo:** The right reference is what I think is more rewarding, and better for understanding, especially in pedagogy, because the value is being an instructor as well as a student in that training.

Especially when speaking about their readiness to teach an online course, faculty spoke about the need for both a teaching presence as well as a social presence. Many faculty
also reflected on the online pedagogy strategies introduced in the OPP (for example topic choices and venues for using the discussion board feature, or use of video) for building both teacher presence and social presence. An online environment that does not facilitate meaningful collaboration between faculty and learners results in a lack of social presence (Wynants & Dennis, 2018), and this can be detrimental to faculty perceptions about online learning (Good & Schumack, 2013). Providing access to materials online is not enough to create a strong teacher presence; if there is no guidance from an instructor, online learning will not be meaningful (Niculescu et al., 2017).

**Theme Two: While acknowledging the value in the Online Pedagogy Program, faculty also expressed recommendations based on their dissatisfaction.**

This theme means that notwithstanding the perception that there was value to the Online Pedagogy program, faculty also expressed their dissatisfaction with it. If faculty deem the Online Pedagogy training to be disconnected to their needs and express dissatisfaction, they may negatively affect and limit their ability to support distant learners (Grabowski, Beaudoin & Koszalka, 2016). Faculty also expressed their desire to have learning outcomes that are clearly stated, and assignments that align with learning outcomes. Finally, faculty also perceived the importance of strong communication to make sure students do not feel lost in an online course. This was another important aspect of designing training that supports faculty to teach online (Lackey, 2011). This theme subsumed the categories (1) dissatisfaction, (2) satisfaction, and (3) recommendations. Table 4.7 below provides a visualization of how theme two emerged.
Table 4.15 Categories Subsumed Within Theme Two

<table>
<thead>
<tr>
<th>Qualitative Data</th>
<th>Code</th>
<th>Category</th>
<th>Theme Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lot I will never use this stuff again (Anonymous)</td>
<td>“Never use”</td>
<td>Dissatisfaction</td>
<td>While acknowledging the value in the Online Pedagogy Program training, faculty also expressed recommendations based on their dissatisfaction.</td>
</tr>
<tr>
<td>I found the directions to be confusing. (Anonymous)</td>
<td>Confusing directions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I learned so much (Anonymous); The strength of the training was being more informed about UDL. (Anonymous); I enjoyed that the most as I actually learned something (Anonymous); Opening my eyes to an online only educational world (Alex); The training opened my way of thinking and experiencing an online class as a student (Arlo).</td>
<td>“Learned so much”</td>
<td>Satisfaction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enjoying learning about UDL</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Training opened way of thinking”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think the training should be expanded. (Anonymous); I would recommend you assess people before giving them instruction (Anonymous); Grading of assignments could have been more prompt. (Anonymous)</td>
<td>Improvements to training</td>
<td>Recommendations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focus on what learner needs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grading assignments faster</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple faculty members expressed in their OPP EOC evaluation, regarding the strengths of the OPP training, that it was “well-conceived” and “useful”. Also, multiple faculty members expressed in their OPP EOC evaluation, regarding aspects of the training they thought could be improved, such as the “assignment directions”, and “making the assignments more relevant to their needs”. When offering recommendations
from program evaluation, as conducted in this research, it is important to integrate both strengths as well as weaknesses (Mertens & Wilson, 2019).

Theme Three: Having a stronger understanding of integrating educational technology tools in addition to Blackboard fostered faculty member’s confidence and readiness to teach online. From the data, faculty reported that they felt more confident to teach online when they learned how to use educational technology tools in addition to Blackboard’s tools. Faculty professional development programs should strengthen faculty’s awareness, confidence levels, and perceptions about how technology can add value to the classroom (Howland & Wedman, 2004). Part-time (adjunct) faculty make up the majority of teaching faculty in higher education (Walton, 2018) as well as at Midwest Community College, so it is especially important to consider the needs of this demographic when designing professional development to provide excellent online education pedagogy (Koozer, 2019). Developments in technology have brought about changes in the roles of faculty and structures of education, so it is important to understand their perceptions of these changes (Clay, 1999). This theme subsumed the categories (1) ability to “do”, (2) tech tools, (3) confidence, and (4) applying theory. Table 4.8 below provides a visualization of how theme three emerged.
Table 4.16 Categories Subsumed within Theme Three

<table>
<thead>
<tr>
<th>Qualitative Data</th>
<th>Code</th>
<th>Category</th>
<th>Theme Three</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would say my ability to know the technical tools to create and moderate and grade, and I feel good there. (Henry)</td>
<td>RQ #2</td>
<td>Ability to “do”</td>
<td>Having a stronger understanding of integrating educational technology tools in addition to Blackboard fostered faculty members' readiness and confidence to teach online.</td>
</tr>
<tr>
<td>It provided great value to me, especially for somebody who was very familiar with technologies. (Bob)</td>
<td>“Very familiar with technologies”</td>
<td>Tech tools</td>
<td></td>
</tr>
<tr>
<td>So, the video, using recordings, whether its Zoom, Blackboard or WebEx-all those tools helped me record video as far as instructional strategies. (Bob)</td>
<td>RQ #3 Confidence</td>
<td>Confidence</td>
<td></td>
</tr>
<tr>
<td>Theory to practice making one a competent online instructor (Anonymous)</td>
<td>Applying theory to practice</td>
<td>Applying theory</td>
<td></td>
</tr>
</tbody>
</table>

Multiple faculty members expressed in their semi-structured individual interview that having completed the OPP course introduced them to features of Blackboard that they were unaware of. Additionally, they learned how different technology tools could be integrated into the Blackboard LMS and used in their own courses. For example,

*Bob:* The technology enables me to present the materials to students in a way they can understand it. It allows me to record my lectures and present the problems to them like I would in an actual classroom.

*Henry:* My ability to know the technological tools to create, moderate, and to grade. I feel good there … posting videos online, creating tests, exams and discussion boards. I know I am able to build the content that I think is going to be meaningful.

There was also a consensus among the faculty qualitative data responses that their confidence in teaching an online course improved upon completing the OPP. For example, Arlo and Oakley shared in their semi-structured interview response,

*Arlo:* I feel more and more confident, I mean in my desire through online teaching. I feel more confident in handling topics online.
Oakley: Oh yeah, it [confidence] has increased, increased my sureness that I am doing something good and participating. I think collaboration between people who took the Online Pedagogy Program … I ask them questions, they showed me Blackboard tools so I can research by myself and do it, so, it helped me one hundred and fifty percent. I feel much better about content and I can help students with all the tools I am providing them with.

As Scherer, Howard, Tondeur and Siddiq’s (2021) research found, when faculty feel confident in their abilities to teach online, their end-of-course evaluation comments, student retention, overall student satisfaction with their learning experience is reported. The same can be stated regarding faculty feeling ready to teach an online course (Perrotta & Bohan, 2020). As a participant offered in their semi-structured individual interview response “This course broadened my horizons and gave me a better understanding of what must take place during an online class, different ideas and theories to keep students engaged and motivated”. Or as found in two FRTO open-ended responses, “Theory to practice making one a competent online instructor”, and “Putting concepts into practice”.

It was intentional in the wording of theme three, having a stronger understanding of integrating educational technology tools, to identify in addition to Blackboard features, how technology integration fostered Midwest Community College faculty member’s confidence and readiness to teach online courses.

Chapter Summary

As this was a mixed-methods action research study, both quantitative and qualitative data were collected and analyzed. Quantitative data was collected using the FRTO survey, the TPACK survey, and the OPP EOC Evaluation survey. The analysis of the data from the FRTO showed that faculty had the strongest confidence in their responding to students’ questions, but had a more neutral response regarding their confidence to use online collaborate tools. Overall analysis of the TPACK showed
faculty perceptions about their readiness and confidence to integrate technology into their teaching practices to be strong. The third data source in this study was the Online Pedagogy Program End-of-Course Evaluation and it measured faculty perceptions about the quality of the Online Pedagogy Program. The overall mean score on the Online Pedagogy Program End-of-Course Evaluation revealed the faculty were mostly in agreement about the quality of the Online Pedagogy Program.

Qualitative data was collected from one open-ended question on the OPP EOC survey, two open-ended questions on the FRTO survey, and eight semi-structured individual interviews. Three themes emerged from the qualitative data: (1) Faculty experiencing the online pedagogy training from a student perspective accentuated their awareness in creating inclusive and community strong courses; (2) while acknowledging the value in the OPP training, faculty also expressed recommendations based on their dissatisfaction; and (3) having a stronger understanding of integrating educational technology tools in addition to Blackboard fostered faculty member's confidence and readiness to teach online.
CHAPTER 5
DISCUSSION, IMPLICATIONS, AND LIMITATIONS

This chapter integrates the findings from this study with that of existing literature and research. The purpose of this action research was to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College. The research questions were: (1) What are Midwest Community College faculty perceptions about the quality of the Online Pedagogy Program? (2) What are Midwest Community College faculty perceptions about their readiness to teach online after completing the Online Pedagogy Program? (3) What are Midwest Community College faculty perceptions about their confidence to teach online after completing the Online Pedagogy Program? Qualitative and quantitative data were collected and analyzed to interpret the findings. This chapter will present (a) a discussion, (b) limitations, (c) implications, and (d) recommendations for Midwest Community College administration.

Discussion

It is important to contextualize the findings of this research on a professional development program that prepared faculty to teach online within the existing literature on faculty readiness and confidence for teaching online. Faculty preparedness for online teaching is important for ensuring the success of online courses, higher education programs, institutional reputation, and providing a high-quality learning experience for students (Loizzo, Rampold, Bunch, Weisberg, & Jordi, 2020; Neubauer & Zipp, 2023).
The results of this study align with previous research showing instructor pedagogical readiness is important for a successful online teaching experience (Neubauer & Pinto-Zipp, 2023; Loizzo et al., 2020; Scherer et al., 2020). Research further indicates that faculty confidence increases after participating in faculty training workshops, and this may motivate teachers to create positive changes in teaching practice, resulting in an increase in students’ learning (Borup & Evmenova, 2019; Moore et al., 2016; Piryani et al., 2018). Additionally, a study by Lim (2022) confirms that online teaching readiness is significantly correlated with instructor satisfaction and confidence in online teaching. Applying the Community of Inquiry principles that model evidence-based practices for online teaching underpinned the OPP training as well as this evaluation. Participants in this study offered their perspectives that align with the CoI research of Garrison et al. (2000) and Anderson et al. (2001). The discussion below is organized by the research questions of this study.

**Research Question #1: What are Midwest Community College Faculty Perceptions About the Quality of the Online Pedagogy Program?**

For this research question, I wanted to know faculty thoughts and opinions about the quality, or value, of the OPP training. Both quantitative and qualitative data revealed that faculty were midway between being satisfied and very satisfied with the quality of the OPP training. For example, an anonymous comment offered on the OPP EOC short answer survey were “The course provided exemplary examples of different methods for teaching online from instructors with various perspectives and real-life experiences.
within the virtual classroom environment.” This perspective is supported by the research of Coswatte, Mohr, and Shelton (2017) regarding best practices for providing professional development for faculty teaching online. Additional anonymous comments offered on the OPP EOC short answer survey such as “[the course materials were] valuable” and “[the training] opened my eyes to online only” further suggested that faculty saw value in the training in terms of helping them develop their ability to think critically about online teaching. The importance of successfully integrating course materials about digital teaching and learning into programs that train faculty to teach online is substantiated in the research of Georgina and Hosford (2009), Rizzuto (2017), and Scott, Bruno, Gokita, and Thoma (2022).

From the OPP EOC evaluations and semi-structured Interview questions, qualitative data show faculty liked the different approaches to discourse facilitation and communication through the OPP discussion boards and the live virtual labs. In a study conducted by Stephens and Coryell (2021), faculty reported that different approaches to discourse facilitation in an online course informed their perspectives about teaching online. Both approaches offered faculty the opportunity to meet and interact with each other to discuss key concepts covered in the training, and to receive additional guidance from the course facilitators (Stephens & Coryell, 2021). Continuing this perspective on the use of live discussion boards and use of live virtual labs in this study, anonymous comments from the OPP EOC evaluation such as “I found the virtual lab sessions extremely helpful” and “[The] webinars gave me the opportunity to ask questions” both
demonstrate faculty perceptions about different approaches used to facilitate discourse in the OPP. The research of Bolliger and Halupa (2021) confirmed that facilitating discussions, and encouraging communication and interaction in online discussions are all important competencies for faculty who teach online.

In the following section, specific aspects of the OPP that the faculty perceived to be of value will be addressed, (a) discussions, (b) course design, and (c) communication.

**Discussions.** While quantitative data showed faculty were in mutual agreement regarding the degree to which discussions were helpful, qualitative data revealed contradictory perspectives about the value of the discussions. For example, anonymous comments offered from the OPP EOC open-ended questions such as “[I] enjoyed [the] interaction on discussion board” revealed a positive experience, whereas another anonymous comment, “lacking interaction between instructor and students” revealed a negative experience. Faculty perspectives about how teaching presence in online courses is established in the research of Garrison, Cleveland-Innes, and Fung (2010) and Moore (2015). The dissatisfaction with discussions is important to note because not only does it affect perspectives about discussions in online courses, but it also reveals a disconnect between the faculty learners and faculty course facilitators. Perspectives about participation and engagement to create cohesive learning communities is validated in the research of Tsiotakis and Jimoyiannis (2016). Additional perspectives offered by faculty who completed the OPP EOC evaluation are corroborated by research of Lee and Martin (2017) and Steiner (2016).
Course design. Faculty also found value in the topics such as Universal Design for Learning, accessibility and engagement strategies, and overall course organization of the training. These findings are supported by the research of Reinhardt, Robertson, and Johnson (2021). For example, anonymous comments from the OPP EOC evaluation such as “I knew nothing about UDL prior to this course, so it was great to learn more and practice using UDL in a graded activity,” “The training highlighted important aspects of online teaching” and “The modules were carefully crafted” demonstrate faculty perceptions about how the instructional design and organization of the training align with the CoI framework as promoted by Anderson et al. (2001).

Faculty agreed that the assignments portion of the OPP training were also useful in furthering their knowledge of online pedagogy. This perspective is affirmed by the research of Brinkley-Etzkorn (2018). For example, an anonymous comment from the OPP EOC evaluation offered the following perspective, “The videos and assignments were the best resource of learning along with the virtual live sessions.” Pollanen’s (2007) research corroborates the importance of carefully constructed online assignments and their ability to motivate online learners. For example, another anonymous comment from the OPP EOC evaluation stated, “I liked working on the course concept map & I did that for 2 other courses.” This quote demonstrated the effect a carefully crafted assignment had on motivating the faculty learner to apply the skills from the course concept map assignment to additional courses beyond what the OPP offered as a concept mapping assignment. Pollanen’s (2007) research demonstrates how faculty can be motivated by
well-crafted assignments, and this example shows how a participant who completed the OPP was motivated to apply concepts to other assignments, which aligns with Pollanen’s findings.

**Communication.** Faculty agreed, communicating course expectations and using different facilitation strategies to promote open dialogue between students and the instructor was needed. Specifically, the quantitative data from this study about faculty perspectives regarding the importance of sending announcements/email reminders to course participants aligns with the findings of Lim (2022) who reported that faculty satisfaction with online teaching is correlated with communication expectations. Qualitative data from the semi-structured interviews of this study also revealed that faculty identified the value of open communication with their students, and agreed about inviting students to regularly communicate in the online environment. For example, Mary’s comment from the semi-structured interview “[What I] remember the most [about the pedagogy training] was communication between teachers and students” and Gabbro’s comment, also from the semi-structured interviews, “I think the thing that I remember the most from the pedagogy training was this: focus on having communication between students and not just one on one between faculty and student” demonstrate their understanding of the importance of increasing interaction and discourse facilitation in online classes. Increasing interaction in professional development settings between different stakeholders is supported by the findings of Sancar, Atal, and Deryakulu (2021).
Research Question #2: What are Midwest Community College faculty perceptions about their readiness to teach online after completing the Online Pedagogy Program?

For this research question, I wanted to know if the faculty felt ready to teach online after completing the OPP training. Two components of readiness were distinguished in defining instructor readiness. The first component of readiness is faculty attitude about the importance of teaching online, including perspectives about the relevancy of technology and teaching (Neubauer & Pinto-Zipp, 2023). Readiness is also faculty attitude about the importance of online teaching competencies, such as facilitating interaction (Denis, Watland, Pirotte, & Verday, 2004), assessing learning, and perspectives about the pedagogical roles of an online instructor. The second component of faculty readiness is the state of preparation for online teaching (Martin, Budhrani, Kumar, & Ritzhaupt, 2019). Spector (2001) underscores the importance of professional preparation to teach online because of the continual changes that take place in the field of online education. Quantitative data of this study showed excellent internal consistency among the participant responses to readiness which further supported the qualitative data and the faculty’s perceptions about feeling prepared to teach online after completing the OPP. For example, Gabbro’s comment from the semi-structured interview “I know that module sort of got me excited about [UDL] like, hey, I think I could do this. I am ready to try doing this!” Other anonymous comments from the OPP EOC evaluation such as “The support I received helped me to teach online,” and “I’ll be so good at this” indicated
faculty readiness to teach online after completing the Online Pedagogy Program. These comments demonstrate intellectual courage and a willingness to “try new ways of thinking and acting” (Redmond, 2015, pp. 107–108).

When converging the outcomes of the quantitative and qualitative data sources, an overarching answer to RQ2 was that faculty identified feeling ready to teach an online course after completing the OPP training. Researchers Hosny et al. (2021) and Schmid et al. (2021) also reported that faculty felt more prepared to teach after completing a professional development program. Midwest Community College Faculty perceptions about their readiness to integrate technology into their teaching practices were strong. Yet, at the same time, faculty also wanted to learn more about how to integrate technology into their online pedagogy to benefit students learning in the online environment. According to Ertmer and Ottenbreit-Leftwich (2010), instructor knowledge and pedagogical beliefs about how to leverage technology to facilitate learning are important variables related to teachers’ readiness to change. As found in the anonymous comments from the OPP EOC survey such as “explaining how technology will be used for learning” and “more hands-on engagement” revealed faculty perspectives about wanting more practice integrating technology into online instruction to strengthen their readiness to teach online. Being ready to integrate technology while simultaneously wanting to learn more about technology integration revealed an emphasis on the continual learning process that goes hand-in-hand with technologies that are rapidly changing, a finding that is supported in studies conducted by Hixon, Barczyk,
Buckenmeyer, and Feldman (2011); Li, Odhiambo, and Ocansey (2023); and Lichoro, 2015. OPP faculty perspectives about ongoing faculty development regarding technology integration while simultaneously feeling ready to teach online are supported by the research of Viberg et al. (2019) and Martin (2018).

**Research Question #3: What are Midwest Community College faculty perceptions about their confidence to teach online after completing the Online Pedagogy Program?**

For this research question, I wanted to explore faculty perceptions about their confidence (ability) to teach online after completing the OPP training. Lee and Tsai (2010) define confidence to teach online as how faculty perceive their own competence using instructional strategies for teaching effectiveness. Quantitative data of this study suggested faculty perceptions were strongest regarding their confidence to integrate technology into their teaching practices but were least confident about their ability to use a variety of technologies to enhance their digital forms of instruction. Similar quantitative findings were reported in the research of Gomez, Trespalacios, Hsu, and Yang (2022) who reported that faculty had fair levels of confidence, not high levels of confidence using and integrating technology into instructional practices. Qualitative data evidence of this can be seen in Henry’s comment from the semi-structured interview, “How can I leverage other technologies out there and make it fruitful or, you know, impactful. I gotta work on that.” While qualitative data identified faculty as having developed their understanding of Blackboard tools, comments like Henry’s focus more
on the desire to strengthen one's ability to integrate outside educational technology tools into instructional practice. Henry’s comment also reveals a need to have ongoing technology integration support and training to develop his confidence. Successful professional development programs that have done this recognize that faculty need ongoing practice leveraging technological tools to strengthen their confidence to teach online (Bandura, 1997; Koehler & Mishra, 2009; Mishra & Koehler, 2006; Sadaf, Newby, & Ertmer, 2016).

The findings about faculty perceptions of their abilities and importance for competencies related to technology use in online education is supported by Aydin (2005) and Northcote et al. (2015). While quantitative data from this study showed that faculty may be less confident with technology integration, they identified being ready for technology integration and want more practice using a variety of tech tools to support student learning. The research of Spector (2016), Reiser and Dempsey (2018), and Wallace (2004) have revealed that faculty have low ability regarding technological resources and suggest that faculty need more opportunities to learn about which technological tools that are most appropriate for teaching their subject matter and need more experience using these tools in digital learning environments.
Limitations

This study contained limitations that were unique to the nature of a mixed methods action research study. Reporting limitations of a study is important to establish transparency (Mills, 2018) by identifying the boundaries of research design and to identify areas that can be expanded or refined in future studies (Mertler, 2020). The limitations of this study included lack of generalizability, subjectivity and bias, response rate, and institutional support.

Action researchers gather data to improve systems and ways organizations operate in specific settings (Creswell & Guetterman, 2019). As a result, action research is not generalizable to a broader population or different settings. The results obtained from this particular action research study may not be applicable or valid in other contexts (Mertler, 2020; Mills, 2018) because the intent was to improve the Online Pedagogy Program which is specific to Midwest Community College.

Action research involves active participation by the researcher, and I am a stakeholder as well as a part of the community being studied. While I have taken measures to remain cognizant of my biases (e.g., keeping a researcher’s journal, engaging in peer debriefing and member checking) my proximity to the research site and research group may have introduced biases and subjectivity into the research process, potentially affecting the objectivity of the findings (Mills, 2018).

240 faculty were invited to participate in study, but only 19, or a 7.92% response rate, completed the surveys of this study. Low response rates are not uncommon,
especially for online surveys, which yield on average 11% to 12% lower than mail delivery methods (Shiyab, Ferguson, Rolls, & Halcomb, 2023). With such a low participation rate compared to the reported the average rate of 36% for online surveys (Daikeler, Bosnjak, & Manfreda, 2020), responses may not be representative of the intended survey population and may introduce nonresponse bias and potential data quality concerns (Office of Management and Data Quality, 2016; Wu, Zhao, & Fils-Aime, 2022). If the response rate had been higher, the findings of this study would be more indicative of a larger population and data quality concerns would be improved. As is, readers should take caution and not generalize these findings to other contexts.

The instruments used in this study did not assess faculty perceptions regarding institutional support and institutional infrastructure and how each impacts faculty members’ readiness and confidence to teach online. For example, a question like the one used in Lichoro’s (2015) research, “What institutional support have you received since beginning to teach online courses?” (p. 117) would have been a good question to better understand faculty perspectives about the institutional resources needed to facilitate a smooth transition to online instruction and provide the necessary support for teaching in a virtual environment. According to previous studies, faculty perceptions of how the institution values online education and the technological resources and the professional assistance an institution provides influences faculty readiness and confidence to teach online (Allen & Seaman, 2013; Bolliger & Wasilik, 2009; Haras et al., 2017). After
reviewing qualitative and quantitative data from my study, I have determined a design limitation is the lack of questioning about the influence of institutional support.
Implications

This research has implications for administrators, Faculty Developers, Instructional Designers, and staff in Centers for Teaching and Learning who design and oversee programs to train faculty to teach online. This study contributes to emerging scholarship about evaluating faculty training programs that prepare faculty to teach online (Brown, 2016; Martin, 2018; Moore, 2015). Three different types of implications are considered: (a) personal implications, (b) professional implications, and (c) implications for future research.

Personal Implications

Prior to collecting data for this study, anecdotal stories about how faculty disliked the OPP shaped my initial impressions of the program. To ensure the study included a variety of perspectives, I invited 300 faculty who had completed the OPP to participate in my research. While the OPP EOC responses remained anonymous, I am aware of at least one instructor who openly expressed dissatisfaction about the OPP being included as a participant in this study. Therefore, I was not expecting to receive such positive quantitative and qualitative responses from the 19 faculty who participated in this study. The reality of this study demonstrates how faculty valued the training, and while faculty did make recommendations, the anecdotal stories of overall discontent that shaped my initial impressions of the program were not supported by the data.

I am glad to have conducted an action research, mixed methods study and am a better researcher due to the rigor of combining quantitative and qualitative data to better
understand the faculty’s perceptions of the OPP. Having had limited training in qualitative data analysis, it was valuable for me as a novice researcher to follow Saldaña’s (2021) teachings about various cycles of coding methods. Using Delve coding software to help with creating and managing the findings within the qualitative data was also a valuable learning experience.

**Professional Implications**

This study has implications for administrators in Centers for Teaching and Learning, Faculty Developers, and Instructional Designers. To increase the perceived value of an online professional development training to teach online, it is important to clarify and align course learning outcomes with assignments, establish firm deadlines, provide prompt feedback on assessments, and have strong instructor presence in the course; the latter being especially relevant and important in asynchronous discussion forums (Garrison et al., 2000; Gurley, 2018; Thomas, West, & Borup, 2017). So, faculty could experience online learning from a student’s point of view, it was important to apply the Community of Inquiry principles to model online pedagogical practices and course design standards based on instructional design frameworks and principles. For example, the principles of andragogy, constructivist theory, and Gagne’s nine events of instruction support the Communities of Inquiry and learner-centered instruction (Harasim, 2012; Hromalik et al., 2020; McMurty, 2013; Rizzuto, 2017).
Implications for Future Research

This study did not address faculty perspectives about institutional or administrative readiness and support for online teaching and learning. Previous studies show that institutional support and department leadership need to be considered because they are important factors that influence faculty satisfaction and online teaching readiness (Bolliger & Wasilik, 2009; Orr, Williams & Pennington, 2009). As shown in the research of Stickney, Bento, Aggarwal, and Adlakha (2019), when institutional policies support efforts for online teaching, faculty reported increased satisfaction. Future researchers might want to consider integrating questions about institutional readiness and confidence regarding online teaching, learning, and programming when designing research instruments.

Recommendations for Midwest Community College Administration

As a manner of expressing the faculty’s dissatisfaction with the OPP, they were also expressing recommendations for how the OPP training could be improved. These recommendations are compiled out of the quantitative and qualitative data outcomes where Midwest Community College faculty who completed the OPP between Summer 2021 and Fall 2022 shared their response via open-ended questions on the OPP EOC evaluation and the semi-structured individual interviews. The three areas where faculty offered OPP recommendations were: (a) technology integration, (b) course learning outcomes, and (c) creating community strong courses. From the perspective of this researcher, this section ends with some unexpected findings of this study.
Technology Integration

To be confident online instructors, faculty need support in how to use the tools of the learning management system in place as well as use additional web-based tools (Brown, 2016; Machajewski, Steffen, Romero Fuerte, & Rivera, 2019; Grover, Walters, & Turner, 2016). This recommendation stems from quantitative data of this study that showed faculty to have a neutral opinion regarding their confidence in using online collaborative tools; they are less aware of technology integration practices and have less confidence in using additional web-based technological tools. The faculty having a neutral opinion may be due to the possibility that teachers see themselves as less technologically capable than their students, which is supported in the research of Madden, Ford, Miller, and Levy (2005); Lacka and Wong (2021); and Rashid and Asghar (2016).

An additional reason for faculty reporting a neutral opinion regarding their technology integration confidence may be due to a lack of institutional support for ongoing professional development regarding technology integration occurring (Bond, Zawacki-Richter, & Nichols, 2019). This is important because today’s students are digital natives (Lacka & Wong, 2021) and faculty need to be confident in their ability to integrate technology to meet the learning needs of students who expect technology integration in digital classrooms (Bantas-Andrade, Casillas-Martín, Cabezas-González, Naranjo-Toro, & Guerra-Reyes, 2022).
To increase faculty perceptions of their readiness and confidence to teach online, it is recommended that future iterations of the OPP provide more opportunities for faculty to practice using a greater variety of tools throughout the training. Lee and Jung (2021) confirmed that instructional change, particularly regarding technology use, is strongly associated with institutional support. This suggests that instructors adopt and employ technology more easily when institutions provide relevant support to ensure the quality of instruction. As confirmed in the research of Lee and Jung (2021) and Phillipson et al. (2021) institutional policies that govern e-learning and technology support affect online instructor satisfaction.

Course Learning Outcomes

Course learning outcomes steer course content and guide the design of the course curriculum (Mager, 1997; Merrill, 2020). Course learning outcomes also guide instructional strategies, assignments, activities and assessment, and ensure that the course is designed to support educational objectives and contribute to the desired learning outcomes of the program (Hines, 2017; Horton, 2012; Mertens & Wilson, 2019; Wiggins & McTighe, 2005). Without alignment, the course is out of balance. For example, in regard to instructional objectives and alignment with assignments, anonymous faculty comments from the OPP EOC open-ended questions such as “instructional objectives [are] not clear” and “communicate objectives more clearly” revealed faculty perspectives about these important course components not being aligned. Faculty perspectives about the importance of assignments being aligned with instructional objectives that support
clearly stated course learning outcomes is validated in numerous studies (Haras et al., 2017; Lackey, 2011; Martin, 2018; Vaill & Testori, 2012). While faculty agreed in their responses to quantitative data sources that the assignments portion of the OPP training were useful in furthering their online pedagogy, their anonymous comments from the OPP EOC open-ended question responses showed that there were unclear instructional objectives. Examples of unclear instructional objectives and its impact on their completing assignments were offered in the anonymous OPP EOC open-ended question responses, “confusing directions” and “confusing requirements”. Thus, revealing faculty awareness about the misalignment between these critical aspects of course design. This awareness also demonstrates faculty’s understanding of the value and importance of alignment between course learning outcomes and educational objectives and view it as a tool to help improve course organization and clarity. These perspectives align with the research of Gregory, Rockinson-Szapkiw, and Cook (2020) who examined community college faculty perceptions about factors that make up quality assurance including course design, content, delivery, and institutional support, as well as infrastructure in relationship to professional development impact on teaching practice.

Course learning outcomes also play a significant role in program evaluation and improvement. By assessing performance against the stated program outcomes, institutions can gather data to evaluate the effectiveness of the program and make informed decisions about curriculum design, instructional strategies, and resource allocation (Dick, Carey, & Carey, 2009; Mertens, 2020). The current goal of the training
is to provide faculty with additional skills and digital competencies beyond BB Learn training modules to successfully teach asynchronous courses. What is perceived to be lacking in the existing training evaluation is the methodology for measuring how program outcomes are being met, or not. Therefore, it is recommended that clear and measurable course learning outcomes are incorporated into the OPP to measure and evaluate course performance and participants satisfaction with their OPP experience. In future interactions of the OPP, a recommendation of including a pre-test to establish baseline skills and a post-test to determine what measurable growth occurred, if any, as aligned with course learning outcomes.

Creating Community Strong Courses

Faculty need training to learn how to facilitate a course to foster a sense of community, and to design courses to engage all learners (Berry, 2018; Chen et al., 2017; Martin et al., 2018; McGee et al., 2017). How online courses are facilitated plays a role in faculty perceptions about online teaching and learning (Gregory et al., 2020). Findings from the OPP EOC anonymous open-ended question responses revealed faculty disappointment about the lack of interaction between faculty as learners and the lead OPP instructors. This perspective is revealed through the following anonymous OPP EOC open-ended question response, “[I was] disappointed there wasn't more interaction between faculty and students”. Faculty who facilitate the OPP should strongly consider participating in the discussions on a regular and substantive basis to model engagement strategies for novice faculty learners in the program, and to develop teaching and social
presence for all participants in the course (Garrison & Arbaugh, 2007; Garrison et al., 2000, Martin et al., 2022; Shea et al., 2014; Wynants & Dennis, 2018).

**Program Evaluation**

The following recommendation comes from the perspective of this researcher regarding the findings of the converged data sources. The unexpected findings from this study stem from faculty perceptions about unclear assignment directions and instructional objectives. These perspectives can be better understood when considering the research of Hines (2017), who identified primary obstacles for Contextualized Teaching and Learning regarding program evaluation.

The goal of program evaluation is to answer questions about the degree to which a program achieves its goals, how it can be improved, and if the program should continue (American Evaluation Association, 2007). At the time of this study, the goal of the OPP was to develop a measurable level of knowledge and growth related to delivering distance education. Faculty perspectives about unclear instructional objectives and unclear assignment directions suggest possible misalignment between course learning objectives (program goals) and instructional activities. An absence of program goals and or ill-defined goals and ill-conceived evaluation frameworks conducted without the use of sound evaluation frameworks, contribute to the use of superficial evaluation (Hines, 2011, 2015; Kucsera & Svinicki, 2010).

A suggestion is that the CTE at Midwest Community College may want to consider adopting a program evaluation model. One model worth considering is the
American Council on Education and Professional and Organizational Development Network (2019) Learning Matrix. It was developed to evaluate the effectiveness of Centers for Teaching and Learning and the programs they offer, similar to that of the Online Pedagogy Program. The Four-Phase Program Evaluation Model (Hines, 2017) aligns with the Kirkpatrick program evaluation model, but extends Kirkpatrick four levels of evaluation by creating six evaluation models, effectively adding in (1) change in student learning, and (2) institutional change as additional criteria to extend Kirkpatrick’s model. The CTE at Midwest Community College may want to consider measuring change in practice after completing the OPP to evaluate its effectiveness while combining the evaluation models of Kirkpatrick and the Professional and Organizational Development Center for Teaching and Learning Matrix.

**Conclusion**

This action research study employed a mixed method design to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College. This study also had three quantitative instruments: (a) the FRTO survey, (b) the Technological Pedagogical Content Knowledge (TPACK) survey, and (c) the Online Pedagogy Program End-of-Course Evaluation. This study also had three qualitative data sources: (a) two open-ended questions on the Online Pedagogy Program End-of-Course Evaluation survey, (b) two open-ended questions on the FRTO survey, and (c) eight semi-structured individual
interviews. The convergence of quantitative and qualitative findings allowed for a more complex understanding of the research questions to emerge.

Three key findings about the OPP training were found. First, faculty desire to learn more about integrating educational technology tools into their course design. Having a stronger understanding of integrating educational technology tools, in addition to the existing Blackboard features, fostered Midwest Community College faculty member's confidence and readiness to teach online courses. Second, while acknowledging the value in the OPP training, faculty also expressed recommendations based on their dissatisfaction. The final key finding that emerged was experiencing the online pedagogy training from a student perspective accentuated the faculty’s awareness in creating inclusive and community strong courses. An additional aim of this research was to evaluate the quality of the OPP and to offer recommendations to Midwest Community College administrators for future iterations of the training. Considering the key findings and the open, varied, and diverse perspectives of faculty who have completed the OPP training, recommendations for changes to clarify program learning outcomes, increase facilitator presence in discussions, and provide increased opportunity for training and support regarding technology integration in the OPP program have been offered.
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doi:10.1007/s11092-010-9098-7


doi:10.1177/2158244020947432


https://doi.org/10.1016/j.chb.2017.02.001

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https://www.utdl.edu/lv/assessments/faculty_readiness.html


APPENDIX A:

ORIGINAL AND REVISED FACULTY READINESS TO TEACH ONLINE (FRTO) INSTRUMENT
Rate how **important these competencies are for online teaching** in your opinion. Use the following scale to answer these questions accordingly.

<table>
<thead>
<tr>
<th>Not important at all</th>
<th>Not Important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very Important</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Original</strong></td>
<td><strong>Revised</strong></td>
<td><strong>Rationale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Course Design</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create an online course orientation (e.g., introduction, getting started)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write measurable learning objectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design learning activities that provide students opportunities for interaction (e.g., discussion forums, wikis)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organize instructional materials into modules or units.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create instructional videos (e.g., lecture video, demonstrations, video tutorials)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use different teaching methods in the online environment (e.g., brainstorming, collaborative activities, discussions, presentations)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create online quizzes and tests</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create online assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Course Communication</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Send announcements / email reminders to course participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create and moderate discussion forums</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use email to communicate with the learners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respond to student questions promptly (e.g., 24 to 48 hours)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide feedback on assignments (e.g., 7 days from submission)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use synchronous web conferencing tools (e.g., Adobe Connect, WebEx, Blackboard Collaborate, Skype)</td>
<td>Use synchronous web conferencing tools (e.g., Blackboard Collaborate)</td>
<td>Removed Adobe Connect, WebEx, and Skype because Blackboard Collaborate is the only tool used at Midwest Community College for web conferencing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicate expectations about student behavior (e.g., netiquette)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicate compliance regarding academic integrity policies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply copyright law and Fair Use guidelines when using copyrighted materials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Apply accessibility policies to accommodate student needs

<table>
<thead>
<tr>
<th><strong>Time Management</strong></th>
<th><strong>Revised</strong></th>
<th><strong>Rationale</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule time to design the course prior to delivery (e.g. a semester before delivery)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schedule weekly hours to facilitate the online course</td>
<td>Use features in Learning Management System in order to manage time (e.g. online grading, rubrics)</td>
<td>Revised because speedgrader is not a feature of the LMS at Midwest Community College, and the calendar was not a tool discussed in the Online Pedagogy Program.</td>
</tr>
<tr>
<td>Use facilitation strategies to manage time spent on course (e.g. discussion board moderators, collective feedback, grading scales)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spend weekly hours to grade assignments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allocate time to learn about new strategies or tools</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Technical</strong></th>
<th><strong>Revised</strong></th>
<th><strong>Rationale</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete basic computer operations (e.g. creating and editing documents, managing files and folders)</td>
<td>Navigate within the course in the Learning Management System (e.g., Blackboard).</td>
<td>Removed Moodle and Canvas because Blackboard is the LMS at Midwest Community College.</td>
</tr>
<tr>
<td>Navigate within the course in the Learning Management System (e.g. Moodle, Canvas, Blackboard etc.)</td>
<td>Navigate within the course in the Learning Management System (e.g., Blackboard).</td>
<td>Removed Moodle and Canvas because Blackboard is the LMS at Midwest Community College.</td>
</tr>
<tr>
<td>Use course roster in the Learning Management System to set up teams/groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use online collaborative tools (e.g. Google Drive, Dropbox)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create and edit videos (e.g. iMovie, Movie Maker, Kaltura)</td>
<td>Removed item completely</td>
<td>Removed create and edit videos (e.g. iMovie, Movie Maker, Kaltura) because not relevant to situational context</td>
</tr>
</tbody>
</table>

Share open educational resources (e.g. learning websites, web resources, games and simulations)

Access online help desk/resources for assistance

Rate **how well you are able to accomplish the following competencies**. Use the following scale to answer these questions accordingly.

<table>
<thead>
<tr>
<th>I cannot do it at all</th>
<th>I cannot do it</th>
<th>Maybe I can do it</th>
<th>I can do it</th>
<th>I can do it well</th>
</tr>
</thead>
</table>

182
<table>
<thead>
<tr>
<th>Original</th>
<th>Revised</th>
<th>Rationale</th>
</tr>
</thead>
</table>

**Course Design**

Create an online course orientation (e.g. introduction, getting started)

Write measurable learning objectives

Design learning activities that provide students opportunities for interaction (e.g. discussion forums, wikis).

Organize instructional materials into modules or units.

Create instructional videos (e.g. lecture video, demonstrations, video tutorials)

Use different teaching methods in the online environment (e.g. brainstorming, collaborative activities, discussions, presentations)

Create online quizzes and tests

Create online assignments

Manage grades online

**Course Communication**

Send announcements / email reminders to course participants

Create and moderate discussion forums

Use email to communicate with the learners

Respond to student questions promptly (e.g. 24 to 48 hours)

Provide feedback on assignments (e.g. 7 days from submission)

Use synchronous web conferencing tools (e.g. Adobe Connect, WebEx, Blackboard Collaborate, Skype)

Use synchronous web conferencing tools (e.g., Blackboard Collaborate)

Removed Adobe Connect, WebEx, and Skype because Blackboard Collaborate is the only tool used at Midwest Community College for web conferencing.

Communicate expectations about student behavior (e.g. netiquette)

Communicate compliance regarding academic integrity policies

Apply copyright law and Fair Use guidelines when using copyrighted materials

Apply accessibility policies to accommodate student needs

**Time Management**

Schedule time to design the course prior to delivery (e.g. a semester before delivery)

Schedule weekly hours to facilitate the online course

Use features in Learning Management System in order to

Use features in Learning Management System in order

Revised because speedgrader is not a feature of the LMS at
<table>
<thead>
<tr>
<th>Original</th>
<th>Revised</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>manage time (e.g. online grading, rubrics, speedgrader, calendar)</td>
<td>to manage time (e.g. online grading, rubrics)</td>
<td>Midwest Community College, and calendar was not a tool discussed in the Online Pedagogy Program.</td>
</tr>
</tbody>
</table>

Use facilitation strategies to manage time spent on course (e.g. discussion board moderators, collective feedback, grading scales)

Spend weekly hours to grade assignments

Allocate time to learn about new strategies or tools

**Technical**

Complete basic computer operations (e.g. creating and editing documents, managing files and folders)

Navigate within the course in the Learning Management System (e.g. Moodle, Canvas, Blackboard etc.)

Navigate within the course in the Learning Management System (e.g., Blackboard).

Removed Moodle and Canvas because Blackboard is the LMS at Midwest Community College.

Use course roster in the Learning Management System to set up teams/groups

Use online collaborative tools (e.g. Google Drive, Dropbox)

Create and edit videos (e.g. iMovie, Movie Maker, Kaltura)

Removed item completely

Removed create and edit videos (e.g. iMovie, Movie Maker, Kaltura) because not relevant to situational context

Share open educational resources (e.g. learning websites, web resources, games and simulations)

Access online help desk/resources for assistance

**Which types of support helped you while preparing to teach online? (Check all that apply)**

Professional development workshops / training / webinars

One-on-one consultation with instructional designers

Seeking advice from online learning experts

Faculty / peer mentoring

Accessing web resources or tutorials for teaching online

Using instructional videos or other documentation (handbook) on the learning platform

Using instructional videos or other documentation on the learning platform

Removed handbook because Midwest Community College does not have a Blackboard handbook for faculty

Online help-desk or support

Student teaching assistants

Removed item completely

Removed because Midwest Community College does not have teaching assistants

Other
<table>
<thead>
<tr>
<th>Original</th>
<th>Revised</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>What type of support would you have liked to have while preparing to teach online?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Demographics**

<table>
<thead>
<tr>
<th>Gender</th>
<th>What is your gender identity?</th>
<th>Revised to be more gender inclusive.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Non-binary</td>
<td>Revised to be more gender inclusive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>What is your age range?</td>
<td>Revised to make participants feel more comfortable</td>
</tr>
<tr>
<td>Age in Years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20–30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31–40</td>
<td></td>
<td></td>
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<tr>
<td>41–50</td>
<td></td>
<td></td>
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<tr>
<td>51–60</td>
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<tr>
<td>61–70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70 and beyond</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**University/College**

<table>
<thead>
<tr>
<th>Country</th>
<th>Removed item completely</th>
<th>Irrelevant to study</th>
</tr>
</thead>
</table>

**Academic Discipline**

| Agriculture/Natural Resources | | |
| Arts | | |
| Sciences | | |
| Business | | |
| Education | | |
| Engineering/Applied Science | | |
| Health Sciences | | |
| Law | | |
| Medicine | | |
| Architecture | | |

<table>
<thead>
<tr>
<th>Years of Teaching</th>
<th>How many years have you been teaching in a face-to-face classroom?</th>
<th>Revised for clarity and to distinguish between online and onsite teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Less than one</td>
<td>Revised to allow faculty who have only taught one semester online to be included</td>
</tr>
<tr>
<td>1–5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6–10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11–15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years of teaching online</th>
<th>How many years have you been teaching online?</th>
<th>Rephrased for clarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Less than one</td>
<td>Revised to allow faculty who have only taught one semester online to be included</td>
</tr>
<tr>
<td>1–5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6–10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11–15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original</td>
<td>Revised</td>
<td>Rationale</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>More than 15</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does your university/college require you to complete an online training before you teach an online course?</td>
<td>Removed item completely</td>
<td>This study focused on the required training, so the question is irrelevant</td>
</tr>
<tr>
<td><strong>Academic Rank</strong></td>
<td>What is your academic rank?</td>
<td>Rephased item to fit situational context</td>
</tr>
<tr>
<td>Full Professor</td>
<td>Full time</td>
<td></td>
</tr>
<tr>
<td>Associate Professor</td>
<td>Adjunct</td>
<td></td>
</tr>
<tr>
<td>Assistant Professor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full time Lecturer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part time Lecturer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Faculty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visiting Faculty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructor</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Primary Online Method of Teaching</strong></td>
<td>Removed item completely</td>
<td>Removed because this study focused on training for asynchronous teaching only and synchronous online teaching is not an option at Midwest Community College</td>
</tr>
<tr>
<td>Asynchronous Online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Synchronous Online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid/Blended</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face to face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>At what level do you teach?</strong></td>
<td>Removed item completely</td>
<td>Removed because Midwest Community College only serves lower division undergraduate college students</td>
</tr>
<tr>
<td>Undergraduate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctorate</td>
<td>When did you complete the Online Pedagogy Program at Midwest Community College?</td>
<td>Added item to collect more specific details about participants</td>
</tr>
<tr>
<td></td>
<td>Summer 2020</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fall 2020</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spring 2021</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Summer 2021</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fall 2021</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spring 2022</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Summer 2022</td>
<td></td>
</tr>
<tr>
<td>Since completing the Online Pedagogy Program, have you taught an online class at Midwest Community College?</td>
<td>Added item to collect more specific details about participants</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you have taught an online class at Midwest Community College since completing the</td>
<td>Added item to collect more specific details about participants</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Online Pedagogy Program, when did you teach it? Check all that apply.
- Fall 2020
- Spring 2021
- Summer 2021
- Fall 2021
- Spring 2022
- Summer 2022
- Fall 2022

Since completing the Online Pedagogy Program, how many online classes have you taught at Midwest Community College?
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- More than 10

Since completing the Online Pedagogy Program, have you built an online class at Midwest Community College?
- Yes
- No

*Note.* Table adapted from Martin et al. (2019).
APPENDIX B:

ORIGINAL AND REVISED TPACK INSTRUMENT
<table>
<thead>
<tr>
<th>Original</th>
<th>Revised</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK (Technology Knowledge)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I know how to solve my own technical problems.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>2. I can learn technology easily.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>3. I keep up with important new technologies.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>4. I frequently play around the technology.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>5. I know about a lot of different technologies.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>6. I have the technical skills I need to use technology.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>7. I have had sufficient opportunities to work with different technologies.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>CK (Content Knowledge)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I have sufficient knowledge about mathematics.</td>
<td>I have sufficient knowledge about online teaching.</td>
<td>This study focuses on Online teaching readiness, not mathematics</td>
</tr>
<tr>
<td>9. I can use a mathematical way of thinking.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>10. I have various ways and strategies of developing my understanding of mathematics.</td>
<td>I have various ways and strategies of developing my understanding of online teaching.</td>
<td>Irrelevant to this study</td>
</tr>
<tr>
<td>Social Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. I have sufficient knowledge about social studies.</td>
<td>Deleted this section about Social Studies</td>
<td>Irrelevant to this study</td>
</tr>
<tr>
<td>12. I can use a historical way of thinking.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>13. I have various ways and strategies of developing my understanding of social studies.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>Original</td>
<td>Revised</td>
<td>Rationale</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------------------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td><strong>Science</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. I have sufficient knowledge about science.</td>
<td>Deleted this section about Science</td>
<td>Irrelevant to this study</td>
</tr>
<tr>
<td>15. I can use a scientific way of thinking.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>16. I have various ways and strategies of developing my understanding of science.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td><strong>Literacy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. I have sufficient knowledge about literacy.</td>
<td>Deleted this section about literacy</td>
<td>Irrelevant to this study</td>
</tr>
<tr>
<td>18. I can use a literary way of thinking.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>19. I have various ways and strategies of developing my understanding of literacy.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td><strong>PK (Pedagogical Knowledge)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. I know how to assess student performance in a classroom.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>21. I can adapt my teaching based-upon what students currently understand or do not understand.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>22. I can adapt my teaching style to different learners.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>23. I can assess student learning in multiple ways.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>24. I can use a wide range of teaching approaches in a classroom setting.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>25. I am familiar with common student understandings and misconceptions.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>26. I know how to organize and maintain classroom management.</td>
<td>No change</td>
<td></td>
</tr>
</tbody>
</table>

PCK (Pedagogical Content Knowledge)
<table>
<thead>
<tr>
<th>Original</th>
<th>Revised</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. I can select effective teaching approaches to guide student thinking and learning in mathematics.</td>
<td>I know how to select effective teaching approaches to guide student thinking and learning when teaching online.</td>
<td>The content in the training is online teaching, not mathematics.</td>
</tr>
<tr>
<td>28. I can select effective teaching approaches to guide student thinking and learning in literacy.</td>
<td>Deleted this question</td>
<td>Irrelevant to this study</td>
</tr>
<tr>
<td>29. I can select effective teaching approaches to guide student thinking and learning in science.</td>
<td>Deleted this question</td>
<td>Irrelevant to this study</td>
</tr>
<tr>
<td>30. I can select effective teaching approaches to guide student thinking and learning in social studies.</td>
<td>Deleted this question</td>
<td>Irrelevant to this study</td>
</tr>
</tbody>
</table>

TCK (Technological Content Knowledge)

<table>
<thead>
<tr>
<th>Original</th>
<th>Revised</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>31. I know about technologies that I can use for understanding and doing mathematics.</td>
<td>I know about technologies that I can use for understanding online teaching and learning</td>
<td>Adapted to fit content of this study</td>
</tr>
<tr>
<td>32. I know about technologies that I can use for understanding and doing literacy.</td>
<td>Deleted</td>
<td>Irrelevant to this study</td>
</tr>
<tr>
<td>33. I know about technologies that I can use for understanding and doing science.</td>
<td>Deleted</td>
<td>Irrelevant to this study</td>
</tr>
<tr>
<td>34. I know about technologies that I can use for understanding and doing social studies.</td>
<td>Deleted</td>
<td>Irrelevant to this study</td>
</tr>
</tbody>
</table>

TPK (Technological Pedagogical Knowledge)

<table>
<thead>
<tr>
<th>Original</th>
<th>Revised</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>35. I can choose technologies that enhance the teaching approaches for a lesson.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>36. I can choose technologies that enhance students' learning for a lesson.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>37. My teacher education program has caused me to think more deeply about how technology could influence the teaching approaches I use in my classroom.</td>
<td>The Online Pedagogy Program has caused me to think more deeply about how technology could influence the teaching approaches I use in my classroom.</td>
<td>Adapted to identify the Online Pedagogy Program at Midwest Community College specifically.</td>
</tr>
<tr>
<td>38. I am thinking critically about how to use technology in my classroom.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>39. I can adapt the use of the technologies that am learning about to different teaching activities.</td>
<td>No change</td>
<td></td>
</tr>
</tbody>
</table>

TPACK (Technology Pedagogy and Content Knowledge)
<table>
<thead>
<tr>
<th>Original</th>
<th>Revised</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>40. I can teach lessons that appropriately combine mathematics, technologies and teaching approaches.</td>
<td>Deleted</td>
<td></td>
</tr>
<tr>
<td>41. I can teach lessons that appropriately combine literacy, technologies and teaching approaches.</td>
<td>Deleted</td>
<td></td>
</tr>
<tr>
<td>42. I can teach lessons that appropriately combine science, technologies and teaching approaches.</td>
<td>Deleted</td>
<td></td>
</tr>
<tr>
<td>43. I can teach lessons that appropriately combine social studies, technologies and teaching approaches.</td>
<td>Deleted</td>
<td></td>
</tr>
<tr>
<td>44. I can select technologies to use in my classroom that enhance what I teach, how I teach and what students learn.</td>
<td>No change</td>
<td></td>
</tr>
<tr>
<td>45. I can use strategies that combine content, technologies and teaching approaches that I learned about in my coursework in my classroom.</td>
<td>I can use strategies that combine content, technologies, and teaching approaches that I learned about in the Online Pedagogy Program in my online classroom.</td>
<td>Adapted to specifically state Online Pedagogy Program at Midwest Community College</td>
</tr>
<tr>
<td>46. I can provide leadership in helping others to coordinate the use of content, technologies and teaching approaches at my school and/or district.</td>
<td>Deleted</td>
<td>This question doesn’t answer research questions for this study</td>
</tr>
<tr>
<td>47. I can choose technologies that enhance the content for a lesson.</td>
<td>No change</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C:

ONLINE PEDAGOGY PROGRAM END-OF-COURSE EVALUATION
Based on the rating scale, indicate your agreement with the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral / Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe that what I am being asked to learn in this training is important.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The training provided an appropriate balance between instruction and practice.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The training was organized in a way that helped me learn.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The course instructions were clear.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The training helped me understand concepts more clearly.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The assignments facilitate my learning.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The projects / assignments measured my knowledge of course material.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Course activities piqued my curiosity.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Online discussions were valuable in helping me appreciate different perspectives.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>Learning activities helped me construct explanations / solutions.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>I can describe ways to test and apply the knowledge created in this training.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The training was challenging.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The training provided guidance in how to become a competent online instructor.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The training developed my ability to apply theory to practice.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>The training developed my ability to think critically about online teaching.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

3. How useful were the following training elements?

<table>
<thead>
<tr>
<th>Element</th>
<th>Not at all useful</th>
<th>Slightly useful</th>
<th>Moderately useful</th>
<th>Somewhat useful</th>
<th>Extremely useful</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Videos</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>N/A</td>
</tr>
<tr>
<td>Discussions</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>N/A</td>
</tr>
<tr>
<td>Assignments</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral / Undecided</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td>N/A</td>
</tr>
</tbody>
</table>
4. Identify what you consider to be the strengths of the training. (Open-ended)

5. Identify area(s) where you think the training could be improved. (Open-ended)

6. Overall, how would you rate this training as a learning experience?

<table>
<thead>
<tr>
<th>Extremely poor</th>
<th>Below Average</th>
<th>Average</th>
<th>Above Average</th>
<th>Excellent</th>
</tr>
</thead>
</table>

7. Overall, how satisfied were you with how this training met your needs for pedagogy for online teaching?

<table>
<thead>
<tr>
<th>Very dissatisfied</th>
<th>Dissatisfied</th>
<th>Neither satisfied nor dissatisfied</th>
<th>Satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
</table>

8. Overall, how satisfied were you with the course navigability?

<table>
<thead>
<tr>
<th>Very dissatisfied</th>
<th>Dissatisfied</th>
<th>Neither satisfied nor dissatisfied</th>
<th>Satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
</table>
Thank you so much for participating in this study on faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College.

I will ask you questions about the degree to which the modules in the Online Pedagogy Program prepared you to teach online. I will also ask you questions about your confidence to teach online after you completed the Online Pedagogy Program.

This interview will take approximately thirty minutes, and your answers will be recorded using zoom audio recording and transcription services. Your identity will remain anonymous, and you can opt out of the interview at any time you wish. Let’s get started.

Purpose Statement:

The purpose of this action research is to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program at Midwest Community College.

---

**Interview Questions**

1. Since you completed the Online Pedagogy Program training, what one aspect has stuck with you the most? Please provide an example. Explain as needed.

2. Were there any specific pedagogical principles you learned about in the Online Pedagogy Program training that you have applied to your teaching? Please provide an example. Explain as needed.

3. To what extent did the content in the Online Pedagogy Program model instructional strategies that you could integrate into your online teaching? Please provide an example. Explain as needed.

4. Were there any specific technological tools you learned about in the Online Pedagogy Program training that you have applied to your teaching? (Share the technological tools components on the Zoom screen as needed).
   a. If not answered thoroughly, ask: Can you identify which tool you applied to your teaching?
   b. How did you apply this tool in your teaching?
      If there is a change, follow up by asking: What has impacted this change?
<table>
<thead>
<tr>
<th>Interview Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. How do the particular technologies used in a lesson you have taught “fit” with the instructional strategies you used? Please provide an example. Explain.</td>
</tr>
<tr>
<td>6. Overall, how would you describe the “value” of the Online Pedagogy Program?</td>
</tr>
<tr>
<td>7. What specific Online Pedagogy Program content made you feel most ready to teach online?</td>
</tr>
<tr>
<td>8. What specific Online Pedagogy Program content did not contribute to your feeling ready to teach online? Please share an example or two.</td>
</tr>
<tr>
<td>9. How do the learning goals, instructional strategies, and technologies used in a lesson you have taught all fit together? Please provide an example. Or explain.</td>
</tr>
<tr>
<td>10. Which specific Online Pedagogy Program content made you feel most confident to teach online? Please provide an example.</td>
</tr>
<tr>
<td>11. Which specific Online Pedagogy Program content made you feel least confident to teach online? Please provide an example.</td>
</tr>
<tr>
<td>12. Please share an example or two that contributed to your sense of confidence in teaching online after completing the Online Pedagogy Program training?</td>
</tr>
<tr>
<td>13. If your degree of confidence has changed since completing the Online Pedagogy Program training, share your thinking or examples what contributed the most to your increase in confidence.</td>
</tr>
</tbody>
</table>

Conclusion to the interview:

Thank you very much for your participation in this interview. Your responses will help my research on faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program. I appreciate that you took time to answer these questions!
APPENDIX E:

PARTICIPANT CONSENT FORM
UNIVERSITY OF SOUTH CAROLINA

CONSENT TO BE A RESEARCH SUBJECT

FACULTY PERCEPTIONS OF READINESS AND CONFIDENCE FOR TEACHING ONLINE: AN EVALUATION OF ONLINE PROFESSIONAL DEVELOPMENT

KEY INFORMATION ABOUT THIS RESEARCH STUDY:
You are invited to volunteer for a research study conducted by Kevin Brent Forman. I am a doctoral candidate in the Department of Education at the University of South Carolina. The University of South Carolina, Department of Education is sponsoring this research study. The purpose of this study is to evaluate faculty perceptions about readiness and confidence to teach online courses after completing the Online Pedagogy Program. You are being asked to participate in this study because you have completed the Online Pedagogy Program. This study is being done at Midwest Community College and will involve approximately 20 volunteers.

The following is a short summary of this study to help you decide whether to be a part of this study. More detailed information is listed later in this form.

PROCEDURES:
If you agree to participate in this study, you will do the following:
1. Complete a survey about Faculty Readiness to Teach Online.
2. Complete a survey about Technological Pedagogical Content Knowledge.
3. A small number of faculty will be selected for semi-structured individual interviews about readiness to teach online after completing the Online Pedagogy Program.
4. Have your discussion/interview recorded via Zoom in order to ensure the details that you provide are accurately captured.

DURATION:
Participation in the study will begin in September 2022 and will end in December 2022.

RISKS/DISCOMFORTS:

Semi-Structured Interviews:
A small number of faculty will be selected for semi-structured individual interviews that will be recorded using zoom. The researchers cannot guarantee what you say will remain completely private. Data collected will remain anonymous and confidential and personally identifying information will not be disclosed.

Loss of Confidentiality:
There is the risk of a breach of confidentiality, despite the steps that will be taken to protect your identity. Specific safeguards to protect confidentiality are described in a separate section of this document.

**BENEFITS:**
Taking part in this study is not likely to benefit you personally. However, this research may help researchers understand design of online pedagogy programs to prepare faculty to teach online.

**COSTS:**
There will be no costs to you for participating in this study other than possible costs related to transportation to and from the research site.

**PAYMENT TO PARTICIPANTS:**
You will not be paid for participating in this study.

**CONFIDENTIALITY OF RECORDS:**
Information obtained about you during this research may be published, but you will not be identified. Information that is obtained concerning this research that can be identified with you will remain confidential to the extent possible within State and Federal law. The investigators associated with this study, the sponsor, and the Institutional Review Board will have access to identifying information. All records in South Carolina are subject to subpoena by a court of law. Study information will be securely stored in locked files and on password-protected computers.

**VOLUNTARY PARTICIPATION:**
Participation in this research study is voluntary. You are free not to participate, or to stop participating at any time, for any reason without negative consequences. In the event that you do withdraw from this study, the information you have already provided will be kept in a confidential manner. If you wish to withdraw from the study, please call or email the principal investigator listed on this form.

I have been given a chance to ask questions about this research study. These questions have been answered to my satisfaction. **If I have any more questions about my participation in this study, or a study related injury, I am to contact Kevin Brent Forman at [kevinforman@midwestcommunitycollege.edu](mailto:kevinforman@midwestcommunitycollege.edu).**

Concerns about your rights as a research subject are to be directed to [Lisa Johnson, Assistant Director, Office of Research Compliance, University of South Carolina, 1600 Hampton Street, Suite 414D, Columbia, SC 29208, phone: (803) 777-6670, email: LisaJ@mailbox.sc.edu](mailto:LisaJ@mailbox.sc.edu).**

I agree to participate in this study. I have been given a copy of this form for my own records.
If you wish to participate, you should sign below.

----------------------------------------  
Signature of Subject / Participant       Date

----------------------------------------  
Signature of Qualified Person Obtaining Consent  Date
APPENDIX F:

PERMISSION TO USE FACULTY READINESS TO TEACH ONLINE INSTRUMENT
Re: [EXTERNAL] consent to adapt Faculty Perception of Their Readiness to Teach Online instrument

Mon 24-Jan-22 4:03 PM

To:

Forman, Kevin <Florence.Martin@uncc.edu>

Dear Kevin,

Good to hear that you are considering extending our work on faculty readiness for teaching online. You have my permission to use and adapt the instrument for your research as long as we are cited and credited appropriately in the publication. Here is the link to the instrument - https://webpages.uncc.edu/fmartin3/site2018/instruments/FacultyReadiness_OnlineLearning.docx

And good luck with your study.

-----------------------------------------------------------------

Florence Martin, Ph.D.
Professor, Learning, Design and Technology
Program Director, Post-Master's Certificate in University and College Teaching
Department of Educational Leadership, Cato College of Education
279, UNC Charlotte 9201 University City Blvd, Charlotte, NC 28223, Phone: (704) 687-8869

Past-President, Multimedia Production Division, 2011–2014
Past-President, Division of Distance Learning, 2018–2019
Association for Educational Communications and Technology
Principal Investigator, Digital Citizenship NSF Project, Digital Safety NSF Project

Director-at-Large, International Board of Standards for Training, Performance and Instruction
Associate Editor, Online Learning Journal

On Mon, Jan 24, 2022 at 4:54 PM Forman, Kevin <Florence.Martin@uncc.edu> wrote:

[Caution: Email from External Sender. Do not click or open links or attachments unless you know this sender.]

Good afternoon,

I am a doctoral candidate conducting research on faculty perceptions about readiness to teach online after completing an online pedagogy training program, and I came across
your study in the Online Learning Journal from September 2019. I was so pleased to read your research.

I am currently designing an instrument and noticed the instrument you created, based on instruments used at other universities, aligns very closely with the variables I am measuring. I am writing to ask for your consent.

1. Is the research instrument copyrighted?
2. If not, do I have your permission to adapt it to my study? If I may adapt it, I would remove the technical competence section because it doesn't align with my study, as well as a few other questions from other sections.

Thank you very much for your consideration.

Best Regards,

Kevin Brent Forman
Doctoral Candidate
Palmetto Prime Cohort
University of South Carolina
Educational Practice & Innovation
Learning Design & Technologies (LD & T)