COUNSELOR EDUCATORS' ACCEPTANCE OF IMMERSIVE AND INTERACTIVE VIRTUAL REALITY AS A PEDAGOGICAL TOOL

by

Melissa Ann Smith

Department of Counselor Education and Family Studies

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy in Counselor Education and Supervision

School of Behavioral Sciences

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APPROVED BY:

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Abstract

This study explores the acceptance of immersive and interactive virtual reality (IIVR) among counselor educators in higher education. It aims to identify the factors influencing their intentions to use IIVR as a teaching tool by examining relationships between various predictors and behavioral intention. This representative survey reveals significant positive correlations between behavioral intention and performance expectancy (r =.56), effort expectancy (r = .40), and social influence (r = .55), confirming that these predictive factors play a vital role in IIVR acceptance. Additional analyses indicate that age and gender do not significantly moderate these relationships, suggesting a universal inclination toward adopting IIVR technology across different demographics of counselor educators. The results emphasize the need for enhanced teaching efficiency, ease of use, and organizational support to foster IIVR integration. Developing user-friendly interfaces and comprehensive training are essential for reducing hesitancy and increasing IIVR adoption. Additionally, these tailored IIVR programs must be designed to support counselor educators' needs by enhancing their teaching performance and reducing workload. Addressing these factors can pave the way for effective IIVR integration in counselor education, potentially transforming pedagogical approaches and improving educational outcomes. These insights contribute valuable knowledge to technology adoption in education and highlight critical areas for future research and development.

Keywords: counselor educators, higher education, UTAUT, virtual reality

Dedication

To my beloved father and mother: Though you are no longer with me, your love, support, and guidance continue to inspire and uplift me every day. Your enduring faith in my abilities and the values you instilled in me have been the foundation of my journey. This dissertation is a tribute to your memory and your profound impact on my life.

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I am profoundly grateful to God for His blessings and guidance throughout this journey. His strength and grace have sustained me through every challenge. As it is written in Philippians 4:13, "I can do all things through Christ who strengthens me."

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To my brother, John: Your words of encouragement and wisdom kept me going. Thank you for always knowing how to motivate me and for being a constant source of strength.

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Finally, to everyone who has supported me throughout this journey, your encouragement, patience, and love have been invaluable. This dissertation is as much yours as it is mine. Thank you from the bottom of my heart.

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List of Abbreviations

American Counseling Association (ACA)

Association for Counselor Education and Supervision (ACES)

Behavioral Intention (BI)

Clinical Mental Health Counseling (CMHC)

Counselor Education and Supervision (CES)

Counsel for Accreditation of Counseling and Related Educational Programs (CACREP)

Effort Expectancy (EE)

Facilitating Conditions (FC)

Generalized Anxiety Disorder (GAD)

Head-mounted Displays (HMDs)

Immersive and Interactive Virtual Reality (IIVR)

Institutional Review Board (IRB)

Performance Expectancy (PE)

Post-traumatic Stress Disorder (PTSD)

Social Influence (SI)

Statistical Package for the Social Sciences (SPSS)

Use Behavior (UB)

Unified Theory of Acceptance and Use of Technology (UTAUT)

Virtual Reality Exposure Therapy (VRET)

CHAPTER ONE: INTRODUCTION

As society becomes increasingly dependent on technology, it is essential to scrutinize whether counselor educators keep pace with the digital age and effectively equip counseling students with the dynamic demands of the ever-evolving counseling profession. Extensive research has highlighted the positive impact of integrating immersive and interactive virtual reality (IIVR) as a pedagogical tool, including heightened emotional engagement within the learning environment (Dhiman, 2023), enriched learning experiences (Blair et al., 2021), skill enhancement (Lie et al., 2023), increased content knowledge (Marougkas et al., 2023), and improved student achievement (Ruiz-Cantisani et al., 2020). Nevertheless, a considerable and notable research gap exists, as integrating IIVR into counselor education practices remains largely absent (Sacco-Bene et al., 2022; Wilkinson & Bazile, 2019).

This study addresses a gap in the existing scholarly literature by examining the relationship between four key constructs of the Unified Theory of Acceptance and Use of Technology (UTAUT; Venkatesh et al., 2003) and the behavioral intention (BI) of counselor educators to embrace IIVR as a pedagogical tool in counselor education. This study applied a quantitative, cross-sectional, correlational research design with multiple moderated moderation analyses to achieve this objective. This approach aimed to identify and understand the factors that significantly influence the acceptance of IIVR among professors specializing in counseling education.

In the opening sections of this chapter, the contextual background presents the concept of IIVR pertinent to the study context. In addition, a review of the background of this study provides the historical, theoretical, and social contexts of counselor education and its evolving relationship with technology. Furthermore, this chapter provides a comprehensive overview,

introduces the problem statement supporting the study's necessity, purpose, significance, research questions, and essential definitions, and concludes with a summary. This foundational chapter lays the groundwork to support the need to explore the technological acceptance of IIVR in counselor education.

Background of the Problem

A few years ago, virtual reality seemed like a science fiction novel for most people. However, the arrival of the first virtual reality headset shattered the perception of what was possible. In just a decade, a shift in communication occurred as individuals transitioned from relying on home phones and pagers to entering a virtual reality world through head-mounted devices. This shift enabled people to connect with friends and escape to places seemingly far away from the comfort of their homes. The rapid evolution of technology has significantly altered lives, with virtual reality emerging as a leading example of this extraordinary progress.

Virtual reality is a computer-generated representation of a three-dimensional environment in which individuals can authentically or tangibly engage by utilizing specific digital devices, including headgear with built-in screens or gloves equipped with sensors (Zhang et al., 2018). The inclusion of components of visualization and interaction in virtual reality software has become increasingly attractive to the academic community, as it increases imagination and provides an advantage for students in higher education (Ding & Li, 2022). Additionally, the interaction component creates dynamic user engagement facilitated by computers, which instantly recognize user inputs and initiate succeeding actions in response (Huang et al., 2010). IIVR has proven beneficial for personal and professional use, such as supporting businesses and innovative educational practices.

As virtual reality technology continues to advance, capturing the imagination of the academic community with its immersive capabilities has become increasingly crucial to explore how this innovation can elevate teaching and offer experiential learning opportunities within the field of counselor education (Sacco-Bene et al., 2022). While research studies explicitly focusing on the integration of IIVR in counselor education are yet to be conducted, a substantial body of research across various disciplines attests to its effectiveness due to its experiential nature (Cooper et al., 2017; Murphy et al., 2019; Sacco-Bene et al., 2022; Wilkinson & Bazile, 2019). Virtual reality provides a dynamic platform conducive to experiential learning, a foundation for teaching that enhances counselor development (Sacco-Bene et al., 2022).

As technology continues to increase accessibility and enhance learning, teaching, and administration, integration into higher education has become a significant push for most educational institutions (Svinicki & McKeachie 2011). Instructors influence the decision to use technology based on course delivery, course goals, students' readiness, sensitive and confidential course materials, and disciplinary values (Kalkan, 2020). Therefore, it is imperative to study counselor educators' behavioral intentions to use IIVR. The upcoming sections of this chapter will expand IIVR and counselor education across historical, empirical, and social contexts.

Historical Context

Technology has played a vital role in developing proficient counselors and advancing counseling for fifty years, enhancing counseling skills from using machines in assessment administration to integrating computers as teaching tools (Granello, 2000; Hayes, 2008; Kalkan, 2020). In the latter part of the 1960s, inventors created a natural language processing program designed to imitate the reflective comments of a person-centered therapist (Hayes, 2008). By the 1970s, counselors and computers had extended their relationships with instructional computer

programs (Granello, 2000). The 1980s witnessed computers taking on more complex roles to support the development of counselors through instructional computer programs (Granello, 2000). The invention of the microcomputer catapulted computer-administered assessment instruments into the counseling field (Baggerly, 2002). Personality testing and vocational guidance assessments can be administered and scored digitally (Granello, 2000). Shortly after, the 1990s introduced the World Wide Web, and distance online learning emerged (Granello, 2000). In response, counselor education programs began to use websites for course management and conducted videotaping sessions in observation laboratories to reinforce key counseling concepts (Baggerly, 2002; Kalkan, 2020).

Since the dawn of the 21st century, there has been a positive shift towards incorporating technology into counselor education, providing vast opportunities for advanced learning. Continuous technological advancements have led to the integration of numerous tools and applications to enhance student learning in higher education because of the ongoing progression of technology (Kalkan, 2020; Wood et al., 2018). Role-playing, a favored pedagogical approach among counselor educators to hone and expand clinical competencies, has witnessed a transformative journey owing to these technological innovations. Role-playing has transitioned from traditional in-class enactments to videotaping with expensive, bulky equipment (Baggerly, 2002; Kalkan, 2020), to more compact pocket camcorder technology (Walter & Thanasiu, 2011), and online role-playing interactions through platforms such as Microsoft Teams or Zoom during distance education courses.

Whether offered residentially or online, present-day counselor education programs benefit from the availability and affordability of applications that support their instructional goals. Learning platforms such as BlackBoard or Canvas help establish an online infrastructure

and are often used to distribute syllabi, organize courses, make announcements, provide assignments, conduct assessments, display grades, and facilitate communication (Snow et al., 2018). In conjunction with learning platforms, reliable videoconferencing products, such as Zoom, WebEx, and Microsoft Teams, are beneficial and promote interaction among students and faculty (Snow et al., 2018). Videoconferencing can connect a residential student to a counselor educator for a meeting during virtual office hours or reduce the distance for a distance education learner. When used for distance learning, these platforms enable users to share PowerPoints and educational videos, break into groups for small discussions, and utilize group and private chat features to mimic in-person learning (Snow et al., 2018). With these platforms, counselor educators can teach and evaluate students' clinical competencies regardless of location (Snow et al., 2018).

Over the last two decades, technology within counseling programs has progressed from theory to practice, influenced teaching methods, and developed additional pedagogical tools for counselor educators' disposal. These tools have proven integral to improving teaching modalities and increasing learning capacities, which has assisted in conducting the research necessary to expand knowledge within counseling (Hayes, 2008). As technology advances, it becomes essential to advance counselor education.

Empirical Context

As the academic community has increased attention to virtual reality technology, comprehensive overviews and research have emerged on the application of virtual reality in education (Ding & Li, 2022). Extensive research on the application of virtual reality in education has revealed its efficacy as a reliable teaching tool (Papanastasiou et al., 2019). This technology has been shown to positively impact students’ emotional responses to the learning environment

(Dhiman, 2023), increase student engagement (Ruiz-Cantisani et al., 2020), enrich their learning experience (Blair et al., 2021), enhance skill acquisition (Lie et al., 2923), increase content knowledge (Marougkas et al., 2023), and improve overall learning outcomes in higher education (Makransky et al., 2019). Virtual reality can enhance teaching and learning across multiple academic disciplines (Dommett, 2018).

However, several issues persist in research conducted by various scholars. The first and most significant concern is the need for consensus among scholars regarding the definition of virtual reality, as they often amalgamate virtual reality, augmented reality, and mixed reality when investigating their applications in education (Al-Ansi et al., 2023; Ding & Li, 2022; Hamilton et al., 2020). Additionally, a substantial portion of research on integrating immersive virtual reality technology in higher education has been initiated from a theoretical position that primarily examines the potential application of virtual reality within specific disciplines in higher education (Cooper et al., 2017; Ding & Li, 2022). There is a notable lack of empirical studies on integrating immersive virtual reality into counselor education, a gap that necessitates exploration in this field.

Theoretical Context

The theoretical framework for this study is the Unified Theory of Acceptance and Use of Technology (UTAUT) formulated by Venkatesh et al. (2003). Their research suggested that there are four direct determinants of user acceptance and usage behavior: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC). Using the above-mentioned determinants allowed the researcher to understand an individual's behavioral intention (BI) to perform the studied behavior, directly influencing their actual use behavior. For

this study, FC was not measured as it measures Use Behavior (UB), and this study was a theoretical study measuring participants' BI.

Venkatesh et al. (2003) found that evaluating users' acceptance could provide insight beneficial for designing or selecting interventions for populations less motivated to use the new systems. Substantial research suggests that higher education faculty are less motivated for pedagogical change and do not integrate technology into their teaching as much as they could or should (Belt & Lowenthal, 2020; Koehler & Mishra, 2005). Therefore, it was clear that UTAUT was the most appropriate theoretical framework for the present study. In addition to UTAUT's relevance, Venkatesh et al. (2003) found that it accounted for as much as 70 percent of the variance in BI to use technology and thus was a reliable measure.

The UTAUT is the most established empirically validated framework for examining technology acceptance and use perceptions. The chosen theoretical framework provided the necessary support for examining the complex intersections of technology, pedagogy, and counselor education, revealing the opportunities and challenges that shaped the contemporary counselor preparation and training landscape. Utilizing this framework to study counselor educators' attitudes toward implementing IIVR as a pedagogical tool provides additional insight into the acceptance of this learning technology in higher education.

Problem Statement

This study seeks to address the lack of integration of IIVR in counselor education, despite the increasing dependence on technology in society, which poses a concern for adequately preparing counseling students for the dynamic demands of their profession (Kalkan, 2020; Svinicki & McKeachie, 2011). Extensive empirical evidence has underscored the advantages of immersive virtual reality as a pedagogical tool, including enhanced emotional engagement

(Dhiman, 2023), enriched learning experiences (Blair et al., 2021), skill development (Dommet, 2018), improved content knowledge (Marougkas et al., 2023), and enhanced student achievement (Ruiz-Cantisani et al , 2020). However, a significant gap in its adoption within counselor education programs remains, necessitating an investigation into the factors influencing counselor educators' BI to embrace IIVR. This study used a quantitative, cross-sectional, correlational research design with multiple moderated moderation analyses to address this problem, contributing to the understanding of technology integration in counselor education.

Purpose Statement

Despite the growing importance of technology in higher education, particularly in enhancing student engagement and learning outcomes, the application of immersive virtual reality in counselor education remains largely unexplored. For aspiring counselor educators and researchers, it is essential to research to identify the most valuable and effective teaching and training approaches to train competent counselors (Hayes, 2008). Research indicates that counselor educators' beliefs are critical for integrating new technologies into educational settings (Kalkan, 2020). Given the advances in virtual reality technology, the increasing intensive use of virtual reality, and the growing popularity of virtual reality in education, it is necessary to examine counselor educators’ intention to use IIVR for educational purposes (Ustun et al., 2023). Before this study, it was unknown whether or to what extent counselor educators believed that IIVR was a necessary or effective tool.

The purpose of this quantitative study, established in the UTAUT, was to investigate the factors that influence the acceptance of IIVR among higher education professors specializing in counseling education. Specifically, this study evaluated the relationships between PE, EE, and SI as potential strong predictors of counselor educators' BI to embrace IIVR as a pedagogical tool

(Blut et al., 2023; Venkatesh et al., 2003). In addition to identifying these influential factors, the study assessed whether age and gender moderate these relationships. This study was essential to address the pragmatic problem of the limited adoption of immersive virtual reality in counselor education, aligning with the growing significance of technology in higher education and its potential to enhance student engagement and learning outcomes.

Significance of the Study

The significance of this study lies in its potential to address a critical gap in the literature on counselor education and technology integration, offering valuable insights into the acceptance of IIVR among professors specializing in counseling education. Despite the potential of IIVR, there has been limited research on the utility of virtual technology as a pedagogical strategy (Wilkinson & Bazile, 2019). The insights gained from this research could enrich these programs by providing a deeper understanding of how IIVR can be leveraged to enhance the training of future counselors. These insights may lead to the development of more competent and effective counselors better equipped to meet the evolving demands and complexities of the counseling profession.

Additionally, this research contributes to the ongoing dialogue surrounding innovative pedagogical practices, which have gained increasing prominence with the evolution of technology in education. By examining counselor educators' acceptance of IIVR, this study offers valuable lessons and insights that can extend beyond the field of counselor education. Educators in various domains can draw on this research to inform their own instructional design and curriculum development efforts when considering the adoption of immersive technology. In this way, this study has the potential to influence how technology is integrated into diverse educational contexts, enhancing the overall quality of education.

This research applied the UTAUT within counselor education (Venkatesh et al., 2003). Adapting a well-established technology adoption framework to a specialized educational setting offers a valuable contribution. This study's findings enrich the understanding of how technology is embraced within educational domains with distinct needs and requirements. Moreover, this study informed the refinement and adaptation of technology adoption theories, ensuring they remain relevant and applicable across diverse educational settings.

Ultimately, this study's significance extends to enhancing students' learning experiences and preparedness for future counselors. By gaining insights into counselor educators' acceptance of virtual reality, this research can create more engaging and effective learning experiences for counseling students, positively impacting student engagement, motivation, skill development, and overall outcomes. Furthermore, as the counseling profession continues to evolve in response to technological advancements, this research equips counselor educators with valuable knowledge on preparing students to integrate technology into their practice, ensuring that they remain adaptable and well-prepared for technological change.

Research Questions

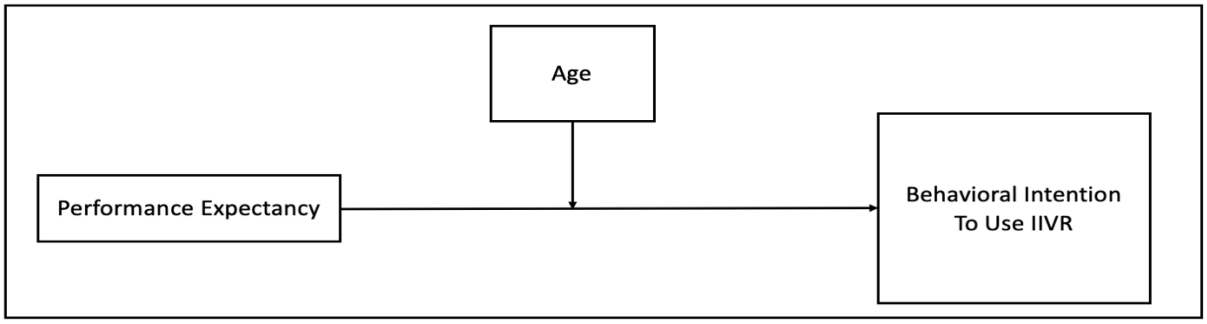
The main research question that guided this study was: to what extent is the relationship between UTAUT variables (PE, EE, SI) influenced by counselor educators' BI to use IIVR as a pedagogical tool for counseling education? Additionally, the study sought to analyze the individual moderating relationship of the variables age and gender of each construct to determine their level of interaction. See Figure 1.1

RQ1: What is the relationship between performance expectancy and counselor educators' behavioral intention to use IIVR as a pedagogical tool in counselor education?

RQ2: To what extent does age moderate the relationship between effort expectancy and counselor educators' behavioral intention to use IIVR as a pedagogical tool in counselor education?

Figure 1.2

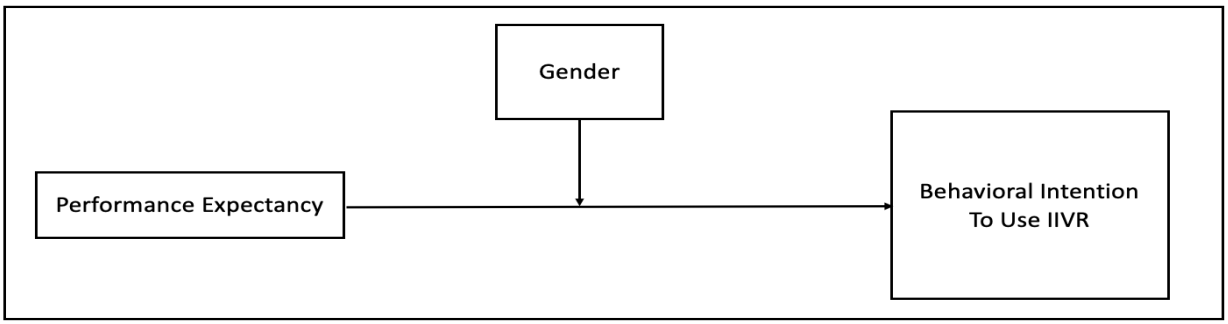
Conceptual Model One



RQ3: To what extent does gender moderate the relationship between performance expectancy and counselor educators' behavioral intention to use IIVR as a pedagogical tool in counselor education?

Figure 1.3

Conceptual Model Two



RQ4: What is the relationship between effort expectancy and counselor educators' behavioral intention to use IIVR as a pedagogical tool in counselor education?

RQ5: To what extent does age moderate the relationship between effort expectancy and counselor educators' behavioral intention to use IIVR as a pedagogical tool in counselor education?

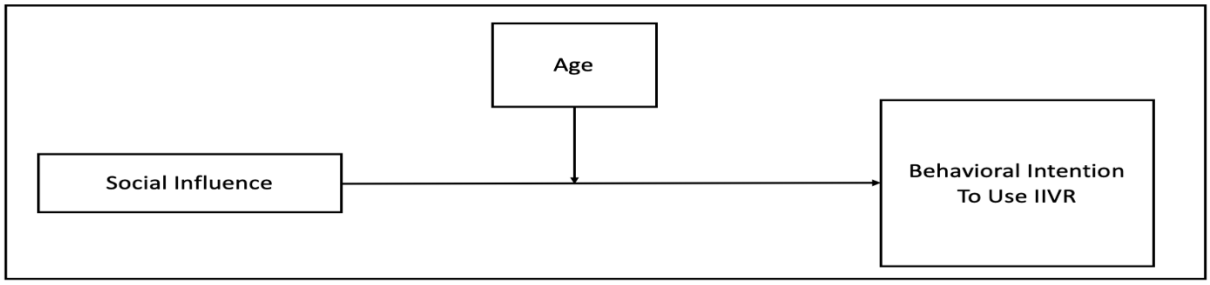
RQ6: To what extent does gender moderate the relationship between effort expectancy and counselor educators' behavioral intention to use IIVR as a pedagogical tool in counselor education?

RQ7: What is the relationship between social influence and counselor educators' behavioral intention to use IIVR as a pedagogical tool in counselor education?

RQ8: To what extent does age moderate the relationship between social influence and counselor educators' behavioral intention to use IIVR as a pedagogical tool in counselor education?

Figure 1.6

Conceptual Model Five



RQ9: To what extent will gender moderate the relationship between social influence and counselor educators' behavioral intention to use IIVR as a pedagogical tool in counselor education?

Definitions

The terms listed below and their definitions are presented here to offer context and a clear understanding of this study, which explores counselor educators' perceptions regarding the use of IIVR as a pedagogical tool.

1. *Behavioral Intention (BI)* measures a person's relative strength of intention to perform a behavior (Maffei et al., 2012).
2. *Effort Expectancy (EE)* is the perceived simplicity and convenience correlated with utilizing the system (Venkatesh et al., 2003).
3. *Immersive and Interactive Virtual Reality (IIVR)* is a computer-generated representation of a three-dimensional environment where individuals can authentically or tangibly engage, utilizing specific digital devices, including headgear with built-in screens or gloves equipped with sensors (Zhang et al., 2018).
4. *Performance Expectancy (PE)* is the extent to which a person perceives that utilizing a particular system will enhance their efficiency and effectiveness in job-related tasks (Venkatesh et al., 2003).
5. *Social Influence (SI)* refers to the extent to which a person believes that significant others advocate for or expect them to adopt the new system (Venkatesh et al., 2003).

6. *Unified Theory of Acceptance and Use of Technology (UTAUT)* is a theory that frames motivation for behavioral intention to use technology through four variables: effort expectancy, performance expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003).

Summary

In summary, this chapter provides the foundation for this dissertation by establishing the framework and comprehensive introduction to IIVR as a potential pedagogical tool for counselor educators. The central focus of this study, as presented in this chapter, is to examine the influence of the UTAUT's constructs on counselor educators' BI to embrace IIVR as a pedagogical tool. This quantitative study investigated the determinants influencing the acceptance of IIVR in counseling education and its impact on counselor educators' BI to use this technology.

As readers progress into subsequent chapters in this dissertation, they explore the concepts introduced in this chapter in depth, gaining a more profound comprehension. Chapter 3 reviews the purpose statement, research methodology, and research design and concludes with a review of the proposed procedures for this study. Chapter 4 provides a detailed analysis of the collected data and the study findings. Chapter 5 concludes the dissertation with a thorough summary, implications, and recommendations for future studies. As we transition to Chapter 2, the reader is introduced to a review of the theoretical framework and literature relevant to the present study.

CHAPTER TWO: REVIEW OF THE LITERATURE

Within the field of counselor education, a considerable and notable research gap exists in the assessment and utilization of IIVR as a pedagogical approach despite its evident benefits (Sacco-Bene et al., 2022; Wilkinson & Bazile, 2019). Given the limited prior research on the intersection of counselor education and IIVR, adopting a comprehensive perspective facilitates a deeper understanding of emerging technology and its use in analogous contexts. To establish a solid theoretical foundation for the present study, the chapter begins with a thorough exploration of the UTAUT as defined by Venkatesh et al. (2003), the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) as redefined by Venkatesh et al. (2012), and the Unified Theory of Acceptance and Use of Technology revisited in 2022 by Blut and colleagues.

Following the theoretical overview, the literature review introduces the concept of IIVR and provides a succinct definition of this technology. Furthermore, it identified two critical benefits directly relevant to counselors and counseling education: enhanced learning experiences and therapeutic applications. These benefits have introduced the contemporary use of IIVR in higher education and its application in clinical mental health settings. Subsequently, this chapter explores counselor education by comprehensively exploring the essential training, established standards, and technological competencies vital for adequate counselor preparation. After reviewing the standards for counselor education, a review of the evolution of technology in counselor education highlights the continued need for technological progression. This exploration serves as foundational support for the themes of the study and highlights the critical importance of technological competence in counseling.

This chapter concludes by reiterating the significant gap in research regarding the use of IIVR as a pedagogical tool in counselor education. This serves as a foundation for the current

study, aligning with the extended UTAUT framework, and provides a relative framework to address the study's research questions. This chapter summarizes existing research and prepares the reader for subsequent studies.

Theoretical Framework: Unified Theory of Acceptance and Use of Technology

To establish a solid theoretical foundation for the present study, it is necessary to review the framework of the study by examining all iterations of the UTAUT. This includes the Unified Theory of Acceptance and Use of Technology (UTAUT), as defined by Venkatesh et al. (2003), the extended Unified Theory of Acceptance and Use of Technology (UTAUT2), as redefined by Venkatesh et al. (2012), and the Unified Theory of Acceptance and Use of Technology revisited in 2022 by Blut and colleagues. This section reviews these theories and identifies the chosen study to inform this study.

UTAUT/UTAUT2

Many competing theories and models related to technology acceptance have been developed to provide insights into users' degrees of acceptance and intention to use. In 2003, Venkatesh and colleagues sought to establish a unified information technology acceptance research model by analyzing eight competing models' conceptual and empirical similarities. Their basic conceptual framework found that the individual's reaction to using technology, their intention to use technology, and the actual use of technology were important predictor factors for willingness to use the technology (Venkatesh et al., 2003).

Venkatesh et al. (2003) conducted longitudinal field studies of participants at four organizations who were introduced to new technology and completed questionnaires with items validated in prior research adapted to the technologies and organizations studied. The surveys contained items measuring constructs on a seven-point Likert scale created from eight

technology research models administered three times over six months. With the results from this study, Venkatesh et al. (2003) defined a unified view of user acceptance called the UTAUT. Their research suggests that there are four direct determinants of user acceptance and usage behavior: PE, EE, SI, and FC.

The first direct determinant of technology acceptance is PE, which refers to how people perceive that utilizing a particular system enhances their efficiency and effectiveness in job-related tasks (Venkatesh et al., 2003). PE has been recognized as the most significant determinant of the intention to use technology and a critical indicator of technological acceptance, consistently holding significance at every assessment stage in optional and obligatory environments (Blut et al., 2022; Venkatesh et al., 2003). EE refers to a technology's perceived simplicity and convenience (Venkatesh et al., 2003). SI is the extent to which a person believes that significant others advocate for or expect them to adopt the new system. The last determinant of user acceptance and usage behavior is FC, which explores an individual's belief that they will have organizational and technical support for the technology. Using the above-mentioned determinants allows the researcher to understand an individual's BI to perform the studied behavior, directly influencing their actual use behavior.

In a study conducted in 2023, Semlambo and colleagues utilized UTAUT to research virtual learning acceptance among higher-education lecturers. They found that PE positively affects user behavior in accepting virtual learning and that BI positively affects user behavior when engaging in virtual learning. Abu-Al-Aish and Love (2013) found similar results in their study about the technological acceptance of mobile learning. They concur that performance and effort expectancies significantly and positively influence BI. Additionally, in a study on learners' acceptance of the Metaverse Platform, Teng et al. (2022) found that all UTAUT constructs

positively impacted learners' satisfaction. Moreover, learners' satisfaction positively affected their intention to continue using Metaverse technology. As observed in these studies, the UTAUT scale constructs consistently wield an informed understanding of a user's intention, strengthening the rationale for utilizing the UTAUT scale in the current study.

With UTAUT proving valuable for understanding acceptance of technology use within organizations, Venkatesh et al. (2012) proposed extending this theory to establish a greater understanding of consumer technology acceptance. The development of UTAUT2 extends the original UTAUT by including additional constructs of hedonic motivation, habit, and price values as context-dependent predictors of technology acceptance and use (Venkatesh et al., 2012). Price value addresses financial restraints, hedonic motivation refers to users' enjoyment of technology, and habit refers to routine use. While UTAUT posits that age, gender, experience, and voluntariness of use moderate different relationships, UTAUT2 removed voluntariness of use as a predictor variable to allow the measure to apply to researchers studying consumer settings.

Adapted & Extended UTAUT

After receiving significant criticism and feedback on the variance within the UTAUT and UTAUT2 models, Blut et al. (2022) conducted a meta-analysis of studies that utilized the UTAUT and UTAUT2 models. Their findings indicate that the current conceptualizations of the two theories have limitations. Their meta-analysis outlined recommended practices for future UTAUT research, which included four new predictor variables: technology compatibility, user education, personal innovativeness, and the cost of technology. Technology compatibility is designed to evaluate compatibility with the user's lifestyle, whereas user education considers the user's educational background. Personal innovativeness appraises individuals’ willingness to

embrace and experiment with new technology, and the cost construct reviews the extent to which the user perceives the technology as financially burdensome.

Remarkably, Blut et al. (2022) found that these additional predictor variables could better explain a substantial degree of variance in user intention and technology adoption than the previously established predictors. Their study also discovered predictors' conditional and unconditional effects on BI and use behavior. Their findings indicated that PE, price value, habit, technology compatibility, and user education have an unconditional effect on BI. Concerning use behavior, habit, technology compatibility, personal innovativeness, and the cost of technology resulted in an unconditional effect.

Blut et al. (2022) also addressed the importance of moderators in explaining substantial variations in effect sizes. Consequently, studies must incorporate individual user characteristics, such as age and gender, into each study at a minimum. Additionally, they recommended exploring moderators appropriate for the research topic, such as cultural variables, including power distance, individualism-collectivism, masculinity-femininity, and uncertainty avoidance, which have been determined to moderate the effects of UTAUT.

Present Study

Despite the recommendations of Blut et al. (2022), there have been limited empirical studies on the four new constructs. In the present study, it was essential to utilize empirically supported constructs. As such, this study addresses the gap in the literature by utilizing Venkatesh et al. ’s (2003) original UTAUT framework. As indicated previously, this framework has been used to measure technology acceptance across various disciplines. This theory indicates that many variables, including moderating ones, can influence technology acceptance. This study will incorporate appropriate variables and moderators tailored to the needs of the study. The

research questions investigated the relationship between PE, EE, SI, and their impact on counselor educators' BI to use IIVR. Utilizing the UTAUT by Venkatesh et al. (2003) as the theoretical framework, this study aims to gain a more comprehensive understanding of technological acceptance and its direct relevance to counselor educators. This approach ensured the study was firmly grounded in an empirically supported theoretical foundation.

Related Literature

Reviewing existing literature that informs this emerging pedagogical approach is essential to exploring the integration of IIVR within counselor education. This section begins by defining virtual reality and categorizing its varying levels of immersion to provide clarity. Next, it explores the critical benefits of IIVR, highlighting its ability to enhance learning experiences and its use in therapeutic settings while addressing the ethical considerations and technological competencies necessary for counselor education. Finally, the section highlights the challenges and opportunities of integrating IIVR into counselor education.

Immersive and Interactive Virtual Reality

Virtual reality is a computer-generated three-dimensional simulation that emulates real-life scenarios and environments through audio and visual cues, allowing users to interact realistically (Emmelkamp & Meyerbröker, 2021). A succinct definition of IIVR and its key features are complex because of the evolving nature of the technology. There are multiple levels of immersion and various elements necessary to create total immersion in a virtual reality world, all described in this section.

Best defined by Holmes et al. (2023), virtual reality experiences can be categorized into three levels of immersion: non-immersive, semi-immersive, and fully immersive. Non-immersive experiences are the least interactive, involving interaction with a virtual reality

application through a screen using conventional devices, such as a keyboard and a mouse. Semi-immersive experiences allow users to create avatars or physical representations to engage in virtual applications. An example of a semi-immersive virtual world that has found applications in education is Second Life, as discussed in the research of Battal and Taşdelen (2023), Ghanbarzadeh and Ghapanchi (2022), Holmes et al. (2023), and McGhee et al. (2012). Fully immersive and interactive virtual reality is the last category of virtual experience and is the appropriate level of immersion for this study.

Hamilton et al. (2020) proposed that essential elements are crucial for creating a genuine IIVR experience, such that users' cognitive abilities generate a strong sense of presence and engagement within the virtual space, often with reduced awareness of their current surroundings. They argued that successful IIVR utilizes a multimodal approach to achieve a sense of immersion in the environment through several sensory channels. The use of 360 degree visual experiences facilitated by head-mounted displays (HMDs), auditory stimulation provided by headphones, and the incorporation of limb kinesthesia through controllers and tracking systems aids in the interaction of the immersive experience (Freina & Ott, 2015; Howard-Jones et al., 2015; Murcia-López & Steed, 2016). An immersive virtual environment should also offer interactivity, allowing users to manipulate the elements within the environment (Hamilton et al., 2020). This interactivity can involve interacting with objects, such as virtual avatars, or collaborating with other real-life users within the computer-generated realm to deepen the immersive experience.

Benefits of IIVR

The integration and use of IIVR are well documented in the research, and they offer numerous benefits across various fields and applications. Virtual environments, which are

computer-generated, offer customization options tailored to each individual or group's specific requirements, capabilities, and preferences (Bell et al., 2020). Additionally, IIVR offers the ability to facilitate remote collaboration (Van Der Meer et al., 2023), develop skills (Concannon et al., 2019), provide training and education (Jensen & Konradsen, 2018), deliver entertainment and gaming experiences (Thunström et al., 2022), alleviate stress and induce relaxation (Emmelkamp & Meyerbröker, 2021), improve problem-solving (Araiza-Alba et al., 2021), enhance learning experiences (Marougkas et al., 2023), and experience therapeutic benefits for clinical applications (Ong et al., 2022). While the benefits mentioned above are all valuable, the advantages of enhanced learning experiences and therapeutic applications are particularly significant to this study and counselor education. The following section analyzes these benefits by reviewing studies illustrating their direct relevance to the field.

Enhanced Learning Experiences

The IIVR promises to transform education by actively enhancing the learning environment and students' learning experiences. Research indicates that IIVR positively affects users' emotional response to the learning climate, increasing their desire to learn, promoting user satisfaction, and improving student retention by engaging multiple senses and encouraging active engagement, which results in outcomes comparable to those achieved through conventional education (Blair et al., 2021; Dhiman, 2023; Lie et al., 2023; Marougkas et al., 2023). Additionally, IIVR enriches learning, enhances skills, boosts content knowledge, and improves student achievement (Blair et al., 2021; Dhiman, 2023; Dommett, 2018; Lie et al., 2023; Marougkas et al., 2023; Marougkas et al., 2023, Papanastasiou et al., 2019; Ruiz-Cantisani et al., 2020).

Allcoat and Von Mühlenen (2018) found that virtual reality promotes active learning instead of passive learning, as it encourages direct interaction within an immersive virtual environment as opposed to passive forms of learning using standard lectures or videos. Active learning, defined as an instructional approach, allows students to engage in the learning process (Allsop et al., 2020). Policymakers have supported active learning and emphasized the development and inclusion of technology that creates new teaching strategies that promote active learning (Børte et al., 2023). Jensen and Konradsen (2018) found that active learning encouraged by the use of IIVR created an enhanced learning space in which students experienced increased engagement, sustained attention for an extended amount of time on learning tasks, and acquired better cognitive, psychomotor, and affective skills than students with standard learning methods.

Previously, the increasing financial viability of virtual reality limited educational institutions' ability to incorporate technology into their teaching in recent years (Hamilton et al., 2020). However, adaptive learning technologies such as IIVR have been utilized as pedagogical tools across a variety of fields, including nursing (Lange et al., 2020), psychology (Crompton et al., 2020), and social work (Huttar & BrintzenhofeSzoc, 2020). These advancements highlight the potential of IIVR in education, offering enhanced learning experiences across multiple disciplines.

Therapeutic Applications

Aligned with the application of IIVR in educational contexts, integrating IIVR has gained substantial traction in therapeutic applications. IIVR has infiltrated the counseling field, significantly impacting clients' mental health and enhancing counselor effectiveness across all stages of therapeutic relationships. Immersive technology seamlessly integrates the treatment process and provides support at each treatment interval. At the beginning of treatment, IIVR is a

valuable tool for counselors to conduct assessments across diverse treatment environments and diagnoses. IIVR offers use as a therapeutic intervention to enhance client engagement, as highlighted by Bell et al. (2020). Moreover, the availability of numerous freely accessible virtual reality applications and programs extends support beyond traditional counseling sessions, providing valuable supplementary assistance to clients (Best et al., 2022). In the upcoming sections, we will explore specific examples of virtual reality's therapeutic applications and integration, showcasing its practical value and ability to enrich client outcomes.

Virtual Reality Exposure Therapy

Exposure therapy, a widely used treatment approach for various mental illnesses, has been revolutionized by integrating IIVR, now offering an affordable, versatile, and safe alternative to standard treatment (Kothgassner et al., 2019). Virtual Reality Exposure Therapy (VRET) offers clients systematic exposure to stimuli they fear in a contextually relevant setting. Morina et al. (2015) found that using IIVR to place individuals into interactive, real-world situations can safely expose them to triggers while providing the clinician with the data necessary to develop personalized treatment plans. Additionally, VRET allows counselors to assist clients in safely processing challenging scenarios, such as those occurring in complex or hazardous environments, while monitoring their responses and providing real-time feedback, thereby effectively impacting treatment completion (Bell et al., 2020). Systematic reviews of VRET studies have revealed that clinically significant digital simulations can enhance the effects of treatment sessions (Emmelkamp & Meyerbröker, 2021; Kothgassner et al., 2019; Morina et al., 2015; Ong et al., 2022; Safikhani et al., 2021).

Treatment

IIVR is a tool that can empower counselors to provide personalized treatment beyond the confines of traditional counseling office spaces. Safikhani et al. (2021) found that while IIVR was developed initially with a primary focus on treating phobias, virtual reality has evolved and has proven beneficial in the therapeutic management of various psychiatric disorders. Virtual environments can induce physiological changes that mirror emotional responses to real-world situations, potentially triggering paranoia, cravings, anxiety, and fear (Bell et al., 2020). The integration of IIVR has proven advantageous in the treatment of various disorders such as generalized anxiety disorder (GAD; Navarro-Haro et al., 2019), posttraumatic stress disorder (PTSD; Rizzo et al., 2010; Rizzo et al., 2015), obsessive-compulsive disorder (Dehghan et al., 2022), substance use disorders (Taubin et al., 2023), psychotic disorders (Bisso et al., 2020), dementia (Wiebe et al., 2022), and attention deficit hyperactivity disorder (Emmelkamp & Meyerbröker, 2021). To better explain the practical use of virtual reality in mental health treatment, the following section outlines specific research on its use in treating GAD and PTSD.

GAD is characterized by excessive anxiety and disproportionate worry about several events or activities that impede an individual's ability to pay attention to the tasks at hand (American Psychiatric Association, 2022). By introducing innovative techniques to help individuals maintain relaxation and peace, IIVR has successfully treated anxiety disorders (Safikhani et al., 2021). A study conducted by Malbos et al. in 2020 assessed the efficacy of virtual reality combined with relaxation techniques in patients with GAD by comparing virtual reality relaxation techniques to standard mental imagery during relaxation. The researchers found a statistically significant improvement in both groups' anxiety, worry, and mental quality of life scores.

Another study conducted by Navarro-Haro et al. (2019) introduced Mindfulness-Based Interventions (MBI) and virtual reality by providing the experimental group participants with MBI followed by 10 minutes of a virtual reality application designed to help them with emotional dysregulation and difficulty concentrating. While both groups showed significant improvements in anxiety, patients who utilized virtual reality were significantly more adherent to the treatment, reinforcing that virtual reality is efficient in assisting with anxiety symptoms and increasing participant engagement. These results validate the efficacy of virtual reality as a standalone treatment for GAD.

PTSD is characterized by the development of emotional and behavioral symptoms, such as fear-based re-experiencing following direct or indirect exposure to one or more traumatic events (American Psychiatric Association, 2022). While trauma can occur in any setting and to any person in any context or area, PTSD is commonly associated with professions that engage in dangerous behaviors, such as military, police, or firefighters. The use of VRET is commonly reported in studies on PTSD, as it allows clients to be a safe option for exposure to their triggers and can provide desensitization benefits (Morina et al., 2015).

Rizzo et al. (2010) conducted a study with soldiers who had been engaged in the Iraq/Afghanistan War and had been diagnosed with PTSD. These participants were exposed to a series of customizable virtual scenarios designed to represent the relevant Middle Eastern contexts for exposure therapy. In this study, the use of VRET enabled the therapist to tailor specific aspects of a combat scenario to match the traumatic experiences of the soldier participants closely. As effective treatment protocols for PTSD require progressive exposure to trigger experiences, the ability to customize the virtual environment is vital. Rizzo et al. (2010) found that 80% of participants who completed the study showed statistically and clinically

meaningful reductions in PTSD symptoms and no longer met the military criteria for PTSD following treatment. Five years later, Rizzo et al. (2015) continued their study of the use of VRET for PTSD due to military combat, including terrorist attacks, with similar findings: VRET is highly effective for treating PTSD.

IIVR Summarized

IIVR provides a transformative technological experience that offers numerous benefits across various contexts when applied in the classroom and clinic. In educational environments, this technology offers the potential for enhanced learning experiences, fostering more profound engagement with the material, improved retention of the material, and opportunities for students to explore and practice through active learning in simulated environments. In therapeutic environments, IIVR provides a powerful tool that significantly impacts a client's mental health and enhances the effectiveness of counselors across the therapeutic continuum. The following section discusses the requirements of counselors and counselor educators to establish a foundation for the essential concepts of the study. The section then reviews the intersection of IIVR and its applications within counselor education.

Counselor Education and Technology

The counseling profession began as a subspecialty designed to meet the needs of specific employment settings and populations, and as such, lacked a unified definition of the position requirements (Institute of Medicine of the National Academies, 2010). Due to the absence of a cohesive definition of counseling and the fragmentation of counseling specialties, it became evident that change was necessary for the profession. In 2009, the Council for Accreditation of Counseling and Related Educational Programs (CACREP) established program standards for counselor education as an answer to the division between counseling specialties. The goal was to

promote a unified and solid counseling profession that began with counselor education. While these standards have evolved, the purpose remains focused on the student development of a counselor identity through demonstrating comprehensive clinical knowledge and proficiency in the curriculum while developing appropriate professional dispositions (CACREP, 2016). This section begins with an overview of CACREP standards, followed by a review of the ethical standards upheld within the profession, with careful consideration of each profession's technological requirements. Next, a synopsis of the established criteria for technological competency in online counseling programs will precede a review of the evolving role of technology in counselor education. This section concludes with an overview of the current pedagogical tools used in counselor education.

CACREP Standards

The CACREP requirements of Clinical Mental Health Counseling (CMHC) programs and Counselor Education and Supervision (CES) programs are integral to this study, laying the groundwork for later discussions on integrating IIVR in this chapter. These accreditation standards are vital because they define the required competencies of counseling students and the expectations of counselor educators. By adhering to these standards, CMHC programs ensure that their graduates are well-prepared to provide effective counseling services across diverse populations and specialties, aiding the unification of the counseling field. Additionally, CES programs equip future educators with the knowledge, skills, and abilities to train the next generation of counselors. Therefore, the subsequent sections provide a more in-depth examination of the standards established for both CMHC and CES programs, providing an inclusive understanding of the principles that underpin the counseling profession and its

educational practices. Additionally, scrutiny of technology within these standards will provide insight into the specific technological expectations embedded within counselor education.

Clinical Mental Health Counseling

The CMHC program, a master's level counselor preparation program, was born from the merging of Community Counseling and Mental Health Counseling, as introduced by CACREP. To initiate this merge, CACREP established initial program standards designed to support the development of a unified counselor identity among CMHC students. Over the years, CACREP standards have evolved in response to continuous developments and changes within the field of counselor education.

In the most recent update, the 2024 CACREP standards specify that CMHC students must complete at least 60 semester hours of courses and clinical coursework demonstrating skills and practices in eight foundational areas (CACREP, 2023). These foundational areas include the following: 1. Professional Counseling Orientation and Ethical Practice, understanding and adherence to ethical standards and professional principles in counseling; 2. Social and Cultural Identities and Experiences, comprehending the diverse social and cultural backgrounds that shape individuals; 3. Lifespan Development, encompassing the study of human growth and development across the lifespan; 4. Career Development, focusing on assisting individuals in navigating their career paths; 5. Counseling Practice and Relationships, establishing effective therapeutic relationships; 6. Group Counseling and Group Work, exploring the dynamics and techniques of group counseling; 7. Assessment and Diagnostic Practices, evaluating and diagnosing clients' mental health and well-being; and 8. Research and Program Evaluation, addressing research methodologies, and assessing counseling programs' effectiveness.

Upon completing their coursework, CMHC students must demonstrate clinical proficiency through participation in a supervised counseling practicum and internship experience working directly with clients (CACREP, 2023). The students' effective utilization of foundational knowledge and experiential application demonstrates their ability to graduate and their preparedness to enter the professional counseling world. Throughout their counseling education program, mentorship and the support of a counseling community empowers master-level counseling students to develop their professional roles and responsibilities and, ultimately, their professional counseling identity (Gibson, 2016).

Thorough training of CMHC students and commitment to adhere to CACREP standards are symbiotic. They both highlight the importance of gaining practical experience and mentorship, tantamount to counselor preparation. Additionally, they provide the structure and direction of the counseling profession, which currently lacks a unified definition.

Counselor Education and Supervision

Parallel to the requirements of the CMHC program, the 2024 CACREP standards articulate program requirements for academic excellence and curriculum within CES with two primary guiding principles: to provide quality academics and foster unity within the counseling profession. Three of the six sections of the 2024 CACREP Standards are relevant to doctoral programs and will help to gain a clearer understanding of the requirements of CES programs. The three applicable sections delineate the standards related to the learning environment, academic quality, and doctoral requirements of CES students. It is essential to review these standards, as they significantly contribute to defining the expectations and criteria necessary for individuals to meet before being instituted as counselor educators.

Section 1: The Learning Environment of the 2024 CACREP Standards presents a comprehensive review of established standards for the academic learning environment. This section includes standards for the institution, counselor education program, and faculty and staff (CACREP, 2023). Notably, this section specifies the requirement for core faculty members to possess a terminal doctoral degree in CES and actively participate in professional and scholarly activities that contribute to the advancement of the counseling profession.

Standards in *Section 2: Academic Quality* outlines the expectation that counselor education programs are deeply committed to achieving the highest quality in preparing students. Furthermore, these programs must demonstrate the methods, tools, and criteria used to measure and maintain the quality. It is emphasized that student evaluation enables counselor education program faculty to continuously assess and monitor student demonstrations of the essential knowledge, skills, and dispositions necessary to prepare them for future practice as counselors.

Lastly, *Section 6: Doctoral Standards Counselor Education and Supervision* 2024 CACREP standards outline the standards of the CES program, curriculum, internship requirements, and faculty course loads and ratios. The requirement to standardize doctoral counseling programs to a minimum of 60 or 90 credit hours beyond the entry-level degree is of significant importance. Doctoral programs in counselor education must encompass professional roles in five key domains: (1) counseling, (2) supervision, (3) teaching, (4) research and scholarship, and (5) leadership and advocacy. These areas form a comprehensive framework for preparing graduates to work as counselor educators, supervisors, researchers, and practitioners in academic and clinical settings. Doctoral students must complete internships totaling at least 600 hours, including supervised counseling experiences and at least two of the four remaining doctoral domains.

Technology

A thorough review of the 2024 CACREP standards reveals that the word *technology* is referenced at least twenty times (CACREP, 2023). Frequent use of the word reflects the connection between technology and counselor education, emphasizing how fundamental technological advancements are in forming contemporary approaches to counselor education and development. When appraising the efficiency of counselor education programs and the success of their students, the evaluation of practices for the inclusion of technology serves as an external measure of program quality and ethical teaching (Meder, 2013).

Reflected in the eight foundational counseling courses CACREP (2023) required for master-level students, technology use is a vital tool that counseling students are educated on and encouraged to utilize. In the foundational area of *Career Development*, counseling students must learn how to locate and use technology to support their clients' career development (CACREP, 2023, p. 3). The foundational areas discussed in subsections *E. Counseling Practice and Relationships* and *F. Group Counseling and Group Work* require programs to teach counseling students how technology can effectively be applied within counseling and group counseling (CACREP, 2023, p. 3).

The importance of technology competency extends beyond master-level coursework and experiential learning opportunities, as delineated in the standards. *Section 4: Professional Practice* outlines fieldwork experiences, such as practicum and internship experiences, and provides an outline that counselor educators should follow to assist students in developing their clinical competency (CACREP, 2023, p. 4). Within this section, subsection *D. Entry-Level Professional Practice* states that counselor educators are advised to provide students with opportunities to become familiar with technological resources during their practicum (CACREP,

2023, p. 4). Likewise, as highlighted in *Section 6 (Doctoral Standards Counselor Education and Supervision),* the expectations for doctoral degree programs reflect similar expectations regarding technology use. Doctoral CES students must be knowledgeable about contemporary trends and technology applicable in delivering counseling services, counselor education, and counselor supervision (CACREP, 2023, p. 6).

Upon reviewing the CACREP (2023) standards, it is evident that the role of technology in counseling and counselor education is paramount. This emphasis further underscores the profession's commitment to equipping future leaders with the necessary skills to incorporate technology into counseling, education, and supervision effectively. The upcoming section will explore the ethical standards established for the counseling profession, particularly emphasizing the intersection of counseling and technology.

ACA standards

In addition to the efforts of CACREP, the American Counseling Association (ACA) has established standards for counselors and counselor educators that reinforce ethical and effective counselor practices. The ACA Code of Ethics (ACA, 2014) was created to provide guidance and to iterate counselors', supervisors', and educators' expectations and ethical responsibilities. The mission of the ACA is "…to enhance the quality of life in society by promoting the development of professional counselors, advancing the counseling profession, and using the profession and practice of counseling to promote respect for human dignity and diversity" (ACA, 2014, p. 2). Within these standards, counseling is defined as "…a professional relationship that empowers diverse individuals, families, and groups to accomplish mental health, wellness, education, and career goals" (ACA, 2014, p. 2).

The ACA Code of Ethics identifies six primary purposes for which they provide their standards over nine main sections addressing the counseling relationship: confidentiality and privacy, professional responsibility, relationships with other professionals, evaluation, assessment, and interpretation; supervision, training, and teaching; research and publication; distance counseling, technology, and social media; and, lastly, resolving ethical issues. A thorough review and understanding of these nine principles are necessary to ensure ethical counseling practices. In line with the central theme of the current study, this section begins by considering the pertinent sections of the ACA Code of Ethics in the context of counselor educators. The role and guidelines for using technology in counseling will be explored.

Counselor Educators

Section F- Supervision, Training, and Teaching outlines the responsibilities of counselor educators (ACA, 2014, p. 7). Counselor educators are responsible for creating, teaching, and supervising counselor training programs that are ethically sound and function as role models for professional behavior. The standards demand that counselor educators be knowledgeable regarding the ethical and legal requirements of the profession, demonstrate competence in applying those standards, and assist students and supervisees in becoming aware of these requirements. In *Section F.7.c and F.7.e,* ACA ethics mandates the infusion of cultural diversity and ethical considerations throughout the counselor education training curriculum (ACA, 2014, p. 7). Additionally, *Section F- Student Welfare* requires that counselor educators provide prospective and current students with expectations regarding the profession's ethical principles, technology requirements, program goals, objectives, rubric for evaluation, and more (ACA, 2014, p. 8). Additionally, counselor educators must provide career advising, encourage self-

growth experiences, and address personal concerns that could impact the student's professional competency (ACA, 2014, p. 8).

In conclusion, Section F of the ACA's Code of Ethics (2014) emphasizes the profound responsibilities of counselor educators. This highlights their essential role in shaping future counselors' ethical foundations and professional competence, accenting the essential integration of cultural diversity, ethical considerations, and technology requirements within counselor education training programs. The following section explores the technology requirements listed in the standards as necessary for the present study.

Technology

In the ACA Code of Ethics (2014), the word *technology* has a noteworthy appearance, with a total of thirty-five references spread across standards. Moreover, the dedication of *Section H* highlights the significance of thoroughly reviewing the ethical and appropriate integration of technology into counseling (ACA, 2014, Section H). Each subsection was designed to provide counselors, supervisors, and counselor educators with a clear understanding of the ethical obligation that comes with the use of technology in counseling. No longer limited to in-person, face-to-face exchanges, the standards specifically address appropriate technology interfaces with counseling, including technical competency, informed consent and disclosure, confidentiality, acknowledgment of limitations, maintaining electronic records, and security within technology-based communication. Additional standards for protecting clients' well-being include verifying their identity, respecting and informing clients of their rights, and establishing professional boundaries within the distance relationship.

As advancements in technology continued, counselors and counselor education programs experienced demands from accrediting bodies (e.g., CACREP) and professional organizations

(e.g., the ACA and Association for Counselor Education and Supervision [ACES]) to incorporate guidelines for technology use within the various roles of the counseling profession. The following section provides an overview of established technological competency standards for counselor education.

ACES Guidelines for Online Learning in Counselor Education

Technology is essential to successful counselor education programs and an effective tool for counselor development (Kalkan, 2020). Advancements in technology have facilitated global connectivity among students, allowing professors to engage with learners worldwide from the comfort of their own homes. The COVID-19 pandemic of 2020 accelerated technology integration into higher education (Coker et al., 2021) across all disciplines, thereby increasing online learning enrollment. By the fall of 2021, 1.3 million postbaccalaureate students in the United States were exclusively enrolled in distance education courses (National Center for Education Statistics, 2023). The demand for online distance learning programs has increased in online counselor education programs. Over the past three years, the number of online programs accredited by CACREP has doubled to 72 institutions, offering 131 online degree programs as of September 2023 (CACREP, 2023; Snow et al., 2018).

The CACREP and ACES Technology Interest Network have identified the need for guidelines for online learning in counselor education (ACES Technology Interest Network, 2017). In 2017, the ACES Technology Interest Network published distance education guidelines specific to counselor education. They identified the necessity of online learning in parallel learning within the four physical walls of a classroom. They communicated to students the need for equity in learning environments. In addition, these guidelines recommend active faculty-student interaction, frequent communication, sound pedagogical frameworks, and interactive and

technically uncomplicated support and resources (Benshoff & Gibbons, 2011; Murdock & Williams, 2011; Snow et al., 2018). Furthermore, the ACES Technology Interest Network (2017) standards support distance-learning students by creating recommendations that address usability, accessibility, and confidentiality while encouraging opportunities to meet with other students to encourage connection and additional support.

Technological Competency Standards for Counselor Education

Reflected in the standards mentioned above, competency in technology is imperative for any individual with a role in the counseling field. Similar to the ACES Technology Interest Network (2017) guidelines, CACREP standards address the need for technological support for all faculty and students and equal access to information systems for learning, teaching, and research for all participating institutions (CACREP, 2023). ACA standards outlined the ethical responsibility of counselors, counselor educators, and supervisors to interface with technology, including technical knowledge and competency to perform ethically.

Counselor Education Summarized

This section reviews the foundational principles and requirements embedded in counselor education, along with an essential understanding of the intersection of technology necessary to provide a comprehensive understanding of the present study. Beginning with an overview of the CACREP standards and then transitioning to ethical standards, this section outlines the roles and responsibilities of counselors and counselor educators and scrutinizes the role of technology. Next, the section will review the technological competency standards established to guide the use of technology within counselor education. Finally, the review of the evolution of technology within counselor education ends with a concise understanding of its current use.

These discussions lay the groundwork for the subsequent exploration of integrating IIVR into counselor education, offering insights into how technology can further enhance the preparation of future counselors and the effectiveness of counselor educators. IIVR has not been listed as a current pedagogical tool despite its use in other academic specialties, as it is yet to be present in the field. With the infusion of technology into all aspects of life, counselor educators must stay current and incorporate these technologies into counselor education programs to prepare future counselors for practice in this technology-infused world.

Virtual Reality Application Acceptance in Counselor Education Programs

In the field of counselor education, the integration of cutting-edge technology has become essential for meeting the developing demands and challenges of the profession. CACREP (2023) requires training programs to ensure that counselors acquire theoretical knowledge and develop experiential knowledge and skills to practice ethically and efficiently in real-world counseling scenarios. In response to these standards, counselor education programs are increasingly exploring ways to enhance the learning experience of their students, and one promising avenue is the integration of IIVR (Holmes et al., 2023).

Integrating IIVR as a pedagogical tool in counselor education programs can foster a deeper understanding of clinical competencies that aid in developing an exceptional professional counselor identity. While there is limited literature documenting successful semi-IIVR experiences in counselor education (Lowell & Alshammari, 2018; Rogers et al., 2022), it is worth noting that there is a noticeable gap in the current literature regarding the use of head-mounted, fully IIVR as a pedagogical tool in counselor education (Holmes et al., 2023; Kyaw et al., 2019; Lowell & Alshammari, 2018). This section will incorporate the information from the

previous sections to explore the advantages of integrating IIVR into counselor education with consideration for ethical responsibilities.

Benefits of Virtual Reality Integration in Counselor Education

The use of IIVR presents a transformative opportunity for counselors during training. Research suggests that virtual reality provides a dynamic platform for experiential learning and a foundation for teaching that enhances counselor development (Sacco-Bene et al., 2022). Additionally, virtual reality has enhanced empathy among counseling students (Cooper et al., 2017), fostering a deeper understanding of clients' experiences. Furthermore, integrating this technology can nurture a more inclusive and culturally considerate learning environment (Dhiman, 2023).

IIVR positively impacts students' mood, motivation, and engagement (Allcoat & Von Mühlenen, 2018; Huang et al., 2010), enhancing their learning experience. Ultimately, these factors increase counselors' self-efficacy during counselors-in-training (Goreczny et al., 2015), equipping them with greater confidence in their counseling abilities as they progress in their education and professional development. In the following subsections, the impact of virtual reality on various aspects of counselor development, including counseling and diagnostic skills, cultivation of empathy, enhancement of cultural competency, and reinforcement of self-efficacy, will be reviewed.

Counseling and Diagnostic Skills

As required by the CACREP (2023) standards, counseling students must learn various theories and models of counseling, develop critical thinking and reasoning strategies for counseling, and learn practical strategies to facilitate effective counseling relationships (CACREP, 2023, 3. e.1, 3.e.2, 3.e.8). A well-established and popular pedagogical tool used in

counselor education that reinforces these standards is role play. Role-play empowers students to develop vital counseling and diagnostic skills while rehearsing and solidifying techniques learned in the classroom (Rogers et al., 2022).

Specialized virtual reality programs incorporating role-play offer the ability to deliver realistic, immersive, and integrative experiences (Ong et al., 2022). In a meta-analysis of VRET studies, Morina et al. (2015) found that the inherent realism of virtual reality simulations allows skills practiced and attained in virtual contexts to transfer to real life effortlessly. Therefore, integrating similar programs within counselor education can assist students in appropriately transferring the skills acquired in virtual reality to real-life counseling situations.

Integrating role-play through IIVR as a pedagogical tool in counselor education provides safety for the learning experience. Cooper et al. (2017) found that IIVR technologies encourage users to interact instantaneously, which engages the user's senses and offers a safe opportunity to engage in experiential learning. The versatility of virtual reality allows counselor educators to craft countless scenarios in which students can explore and advance their clinical skills. With virtual scenarios, counseling students can enhance their ability to identify and respond to potential safety concerns (Cooper et al. 2017). Additionally, IIVR can allow students to gain experience and proficiency in handling diverse clinical scenarios without exposing themselves or their clients to risk (Lie et al., 2023).

Traditional role-playing activities in counselor education pose several inherent challenges, including the potential for students to develop multiple relationships, difficulties in providing effective feedback, and the risk of inaccurate representation of assigned client roles (Clarke et al., 2017). However, the integration of IIVR has the potential to address and overcome these challenges, thereby enhancing the efficacy and accessibility of experiential learning

opportunities. Through virtual interactions with clinical scenarios, educators can create transformational reflection opportunities for counselors in training and enhance counselor development (Holmes et al., 2023).

Empathy development

Empathy plays a crucial role in counseling and therapeutic relationships, necessitating counselors to tune into their clients' diverse perspectives and worldviews (Smith et al., 2020). Empathy development can be intentionally increased through practice and experience (Holmes et al., 2023). Consequently, the development of empathy is a focal point of discussion in counselor training programs. Counselors-in-training actively engage in activities and role-play designed to refine their empathetic counseling skills and foster a greater appreciation of the diversity of their clients' backgrounds, experiences, and emotions.

By employing technology, virtual reality can generate empathy-building encounters that were once inconceivable. A meta-analysis conducted by Ventura et al. (2020) reviewed articles on IIVR and empathy and found that IIVR can adjust the perception of the body's boundaries, creating the illusion of being another person. This sense of embodiment can convince participants to assume the perspective of another character or person in the virtual world, resulting in a change in their emotional state.

IIVR can amplify empathy through impactful experiences that nurture comprehension, compassion, and a heightened sense of interconnectedness with others (Dhiman, 2023). By utilizing the unique capabilities of virtual reality, a more empathetic and inclusive society can be cultivated, leading to positive social transformation and profound admiration for the richness of human diversity (Dhiman, 2023). Smith et al. (2020) investigated the connection between emotional intelligence and cultural empathy. Their research revealed that including immersive

experiences can facilitate the development of empathy among trainees. These experiences prove especially useful in enabling trainees to navigate through the complex layers of cultural influences that clients may encounter, such as addiction, recovery status, sexual identity, and socioeconomic status.

Allowing users to experience the lives of others through virtual reality simulation challenges biases and prejudices, promoting empathy towards marginalized communities (Dhiman, 2023). By creating authentic and emotionally immersive scenarios, virtual reality can evoke intense emotional responses from its users and, when applied in counselor education, cultivate counseling students' ability to form connections and therapeutic rapport with their future clients.

Cultural Humility

According to the CACREP standards (2024), counselor preparation programs must integrate discussions of ethical responsibility, diversity, equity, inclusion, and critical thinking into their curriculum. These elements are considered essential components of counselor training, as students benefit from a deeper understanding of intersectionality and cultural identity dispositions (CACREP, 2016). The deliberate inclusion of ethical responsibility, diversity, equity, and inclusion equips students with the prerequisite knowledge to deliver practical counseling and the practice skills necessary to provide effective counseling services to clients, encompassing a broad spectrum of intersectional identities and experiences.

Section F: Responsibilities of Counselor Education of the 2014 ACA Code of Ethics addresses the necessity for the infusion of multicultural issues and diversity into the development of professional counselors in subsection F.7.c. Additionally, it recommends using case examples but addresses the necessity for client confidentiality when using previous experience with clients

to formulate case examples (ACA, 2014, F.7. f). IIVR could provide an innovative approach that adheres to ethical standards while counseling students exposed to diverse clients within virtual worlds.

An innovative way to achieve this combination would be to incorporate IIVR applications in classes, including those focused on cultural diversity, human growth and development, ethics, integration of religion, and addiction studies. Dhiman (2023) found that users observe and engage within a virtual environment through a different lens, which exposes them to various perspectives about the world and its people. The power of virtual reality unifies people and encourages the interaction and collaboration of individuals within shared virtual realms, surpassing geographical and cultural barriers, encouraging cultural connectivity, and contributing to empathy at a global level (Dhiman, 2023). This pedagogical approach could open opportunities for a more profound awareness of people's lived experiences and the multifaceted contexts that shape their lives (Sacco-Bene et al., 2022).

Self-Efficacy

Having explored the potential of IIVR in counselor education and its transformative impact on student awareness and cultural understanding, the focus transitions to another critical aspect of counselor development: self-efficacy. Bandura's (1977) conceptualization of direct mastery experiences states that participants gain confidence in their successful experiences of a particular activity. To foster a sense of self-efficacy, trainees must competently demonstrate the skills and behaviors essential to counselors and receive constructive feedback regarding their performance (Goreczny et al., 2015).

Counselor education programs should actively seek opportunities to provide experiences that foster increased confidence among participants (Sawyer et al., 2013). One of the most

valuable sources of experiential learning to enhance counselor self-efficacy is derived from direct client experience (Ikonomopoulos et al., 2016). Ensuring that counseling students are prepared plays a pivotal role in instilling a sense of security and competence in their abilities as counselors (Mullen et al., 2015; Sawyer et al., 2013; Tang et al., 2004). The study by Sawyer and colleagues (2013) revealed a compelling relationship between the perception of preparedness and the self-efficacy levels of novice counselors, particularly concerning their capacity to manage crisis interventions effectively. This connection underscores the significance of comprehensive preparation in strengthening new counselors' perceived self-efficacy, imparting them the assurance to traverse challenging clinical scenarios with competence and self-confidence.

Challenges of Virtual Reality Integration in Counselor Education

The availability of this sophisticated technology has led to the inclusion of IIVR across vast disciplines for various reasons. As with any evolution of technology, the challenges associated with its use persist. Dhiman (2023) found that such challenges include privacy and data security, accessibility and inclusivity, cultural sensitivity, stereotype reinforcement, and the emotional well-being of the user. The immersive nature of virtual reality raises ethical, psychological, and health concerns, necessitating user consideration. Addressing these ethical considerations and challenges is necessary to protect counselor educators and provide the safety and security required for successful integration.

Virtual reality experiences often collect and process personal data, such as user movements, interactions, and physiological responses. Handling this data carefully and respecting user privacy is essential. Additionally, research has demonstrated that virtual reality can evoke strong emotional reactions that may have unintended consequences (Malbos et al., 2020; Sacco-Bene et al., 2022; Safikhani et al., 2021). Therefore, users must be notified of the

risks by providing informed consent and support resources after participation to mitigate any negative emotional impact. User well-being must be monitored and prioritized during IIVR. Despite these challenges, the evolving landscape of technology plays a fundamental role in defining the identity of the upcoming generation of counselors. They played an essential role in their professional lives. Embracing inclusivity and adaptability is imperative to address the needs of future counseling students.

Challenges exist not only with the application of virtual reality for counseling students, but also with the potential impact on faculty members, which must be addressed. After the initial hurdle of obtaining virtual reality equipment and creating a facility, counselor educators would need to receive training on its use and any associated programs. This training could be labor-intensive and potentially require additional staff support. Additionally, counselor educators should update their curricula to include the use of IIVR. The proposed transition could be time-consuming and require significant investment in counseling programs, staff, and students. By exploring counselor educators' viewpoints on IIVR, the present study aimed to discover their perceptions of the benefits and challenges in preparing, training, and educating the next generation of counseling professionals.

Summary

As the literature has shown, integrating IIVR in counselor education programs holds abundant potential for efficiently transforming the learning experience and preparing future counselors. This technology offers counseling and counselor education many benefits and can enhance counselor development in various ways. Additionally, a review of the requirements and standards for counselors and counselor educators supports the need for an increase in technology competency. As the literature offers varying definitions for virtual reality, this chapter provides a

clear and concise definition of the varying levels of immersion and the necessity of interaction in virtual reality to establish a clear definition of IIVR for the present study.

Much of the research concerning this topic has been limited due to varying definitions of virtual reality and a lack of field-specific software development, resulting in a gap in research on IIVR use in counselor education. This study utilized UTAUT (Venkatesh et al., 2003) as a theoretical framework to investigate factors related to counselor educators' BI to use IIVR as a pedagogical tool. The research from this study will contribute to the existing literature by increasing knowledge of attitudes regarding the integration of virtual reality use within counselor education. This research will add to the counselor education literature by enhancing the understanding of IIVR as a pedagogical tool, increasing knowledge of technology competency, and filling in gaps in the current literature on program development and use within counselor education. The significant gap in the literature signifies the need to investigate the factors that impact the acceptance of IIVR for counselor education to surpass all challenges and increase the likelihood of integration.

CHAPTER THREE: METHOD

This study examined the relationship between the UTAUT constructs (Venkatesh. et al., 2003) and counselor educator's BI to accept IIVR as a pedagogical tool for counselor education. This chapter provides a comprehensive overview of the methodology for the study, including the research design, research questions, and hypotheses. Additionally, this chapter outlines the procedures followed for data collection, reviews the data analysis process, and concludes with a summary.

Research Design

This study applied a quantitative, cross-sectional, correlational research design with multiple moderation analyses to investigate the intitled variables. Quantitative research involves a methodological process of explaining variables, testing their associations, and examining cause-and-effect associations between variables (Bloomfield & Fisher, 2019). Quantitative research closely aligns with a post-positivist paradigm and seeks to test research hypotheses using scientific methods (Heppner et al., 2016). As such, the quantitative method is the most appropriate for this study because it seeks to utilize a cross-sectional survey to measure the relationship between selected variables of the UTAUT model (PE, EE, and SI) and counselor educators' BI to use IIVR as a pedagogical tool in counselor education.

The study collected data from a survey administered through an online Qualtrics Survey Software platform that was extended to counselor educators currently teaching CACREP-accredited programs within the United States. Descriptive statistics and correlation analysis were used to analyze the data and determine the correlations between the variables in the study. This study also employed a moderation analysis to assess boundary conditions that interact with the association between predictor variables and BI (Hayes, 2018). Specifically, the study assessed

the influence of the two moderators separately on the predictor's effect on behavioral use by conducting multiple moderation analyses using Hayes Model 1 (Hayes, 2018) and analyzing the data using the IBM Statistical Package for the Social Sciences (SPSS) Statistics version 29.0 (IBM Corp, 2022).

Research Questions

The research questions presented were associated with the problem under investigation in this study, which examined the relationship between three predictor variables taken from the UTAUT (Venkatesh et al., 2003) and counselor educators' BI to use IIVR as a pedagogical tool in counselor education. Responses to these questions may assist higher education administrators and program directors in understanding why the integration of virtual reality as a pedagogical tool in counselor education is yet to be implemented.

The main research question that guided this study was: to what extent is the relationship between UTAUT variables (PE, EE, SI) influenced by counselor educators' BI to use IIVR as a pedagogical tool for counseling education? Additionally, the study sought to analyze the individual moderating relationship of the variables age and gender of each construct to determine their level of interaction. The following nine research questions were developed to explore these concepts.

RQ1: What is the relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

RQ2: To what extent does age moderate the relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

RQ3: To what extent does gender moderate the relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

RQ4: What is the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

RQ5: To what extent does age moderate the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

RQ6: To what extent does gender moderate the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

RQ7: What is the relationship between SI and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

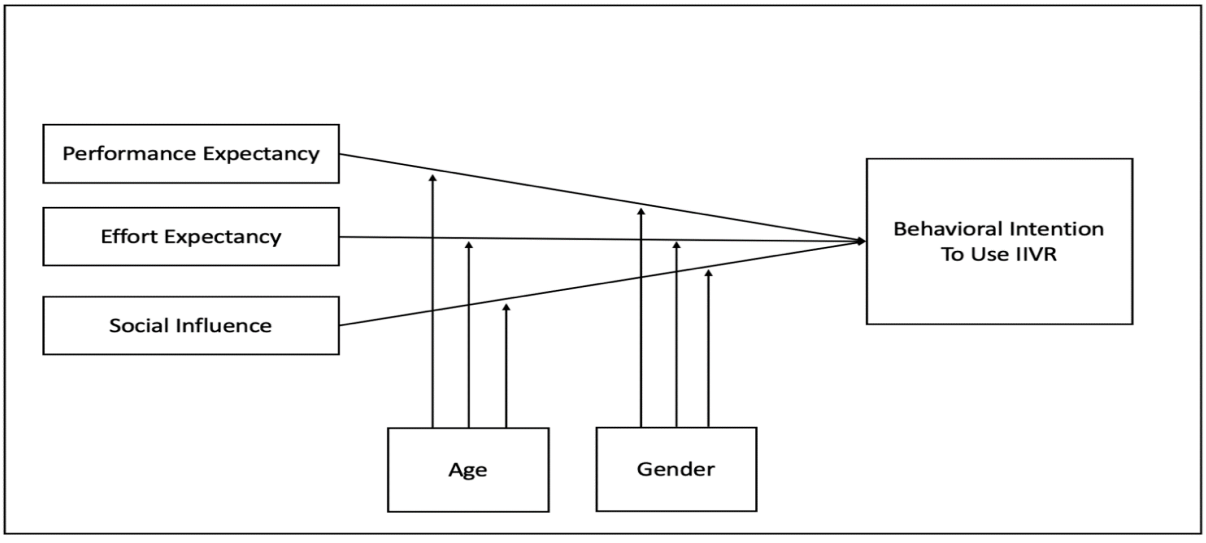
RQ8: To what extent does age moderate the relationship between SI and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

RQ9: To what extent does gender moderate the relationship between SI and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

The conceptual model shown in Figure 3.1 visually depicts the relationships in question. The following section will review the alternate hypotheses developed to answer these questions.

Figure 3.1

Complete Conceptual Model



Hypotheses

***H_a1*:** PE positively predicts counselor educators' intention to use IIVR as a pedagogical tool.

***H_a1a*:** Age significantly moderates the relationship between PE and BI.

***H_a1b*:** Gender significantly moderates the relationship between PE and BI.

***H_a2*:** EE positively predicts counselor educators' intention to use IIVR as a pedagogical tool.

***H_a2a*:** Age significantly moderates the relationship between EE and BI.

***H_a2b*:** Gender significantly moderates the relationship between EE and BI.

***H_a3*:** SI positively predicts counselor educators' intention to use IIVR as a pedagogical tool.

***H_a3a*:** Age significantly moderates the relationship between SI and BI.

***H_a3b*:** Gender significantly moderates the relationship between SI and BI.

Selection of Participants

Liberty University Institutional Review Board (IRB) approval was obtained immediately following approval from the dissertation committee. The study met the requirements for exemption category two as it had been designed intentionally to protect the identity of its participants, and their anonymity was accounted for with a Qualtrics survey. Following approval from the IRB (Appendix A), the procedure for recruiting participants began.

The targeted participants for the study were recruited from a non-probability, convenience sample of counselor educators currently serving full-time in a CACREP-accredited counseling program within the United States of America. Counselor educators consist of individuals of all genders and ages who have completed their doctoral degrees. A request was

sent electronically to the CESNET ListServ manager to begin the recruitment procedure, seeking authorization to disseminate survey information across ListServ (Appendix C). Subsequently, the IRB endorsed survey materials were sent out three times to the CES-NET ListServ (Appendix D), reaching over 7,000 email recipients each time. Following this, the survey information was individually emailed to 282 addresses obtained through a search of the CACREP website. Additionally, an IRB-approved recruitment email was sent to administrators within CES programs requesting their assistance sharing survey information with eligible professors. This communication included a direct hyperlink to the survey to ensure participants' anonymity.

Four weeks after the survey was sent out through CES-NET ListServ, it became clear that additional recruitment measures were necessary. The original IRB request was modified to include a request to utilize additional counseling-specific listservs, social media, and a flyer and letter placed within faculty members' mailboxes at local colleges to recruit participants (Appendix B). Additionally, this modification included a request to recruit faculty members from Liberty University. With the approval of this request, survey information was posted on social media, and a request for the distribution of survey information was sent to an administrator at Liberty University (Appendix E). All invited participants were encouraged to share the survey link within their networks to increase the sample size. The survey remained accessible to participants from January 22, 2024, until February 29, 2024, when the survey exceeded the sample size necessary for the study and was closed at 136 surveys.

Sample Size, Power, and Precision

To determine the sample size necessary for this study, the researcher utilized specialized software, G*Power 3.1, by Faul et al. (2009), obtained online to calculate the sample size. According to Cohen (1988), f^2 is the ratio of the explained and error variance and is the effect

size measure. Cohen (1988) purported f^2 values of .02, .15, and .35, which indicate small, medium, and large effects. For this study, an effect size of .15 was chosen to evaluate for a medium effect. The following parameters were entered into G*Power 3.1: F test family; linear multiple regression: fixed model, R-squared deviation from zero; a priori; effect size .15; alpha value was set at .05; power test was set at .95; and the total number of predictors proposed for the study was 3. After calculation, the total sample size necessary for this study was 119 participants (see Appendix F).

Instrumentation

Using a cross-sectional design, this study gained insight into the attitudes of counselor educators through an online survey, with data collected through Qualtrics. Before beginning the survey, the study information and inclusionary questions confirmed the participants' appropriateness of the study's requirements. The survey instrument consisted of 20 questions, beginning with four questions to solicit demographic information from the population sample.

The demographic information requested included the participant's age and gender, which served as moderator variables for consideration in the study. Participants selected the appropriate age, gender, and length of teaching experience from a drop-down menu. Participants then completed a written questionnaire asking them to share their current use of technology as a pedagogical tool in their profession. Additionally, respondents were asked to estimate the size of their student enrollment in their program in their current teaching assignments.

Sixteen of the research questions used for this quantitative cross-sectional survey were modified from the original survey instrument of the research studies of Venkatesh et al. (2003). Because of the distinctive nature of the technologies being studied, previous research based on the UTAUT framework commonly alters the original instrument to contextualize the

questionnaire (Balakrishnan et al., 2022; Hsu & Peng, 2022). The UTAUT instrument produces acceptable levels of reliability and validity and has been tested in several surveys by different researchers (Chen & Chen, 2015; Teng et al., 2022; Ustun et al., 2023). Additionally, the internal consistency of the UTAUT, as demonstrated by Cronbach's alpha, has been established to be greater than .70 for PE, EE, SI, and BI scales (Venkatesh et al., 2003; Venkatesh et al., 2012). The reliability and internal consistency of the original UTAUT survey served as the standards for our adapted survey instrument.

Next, the survey transitioned to 16 questions from four constructs (PE, EE, SI, and BI) answered using an ordinal measurement scale on a seven-point Likert-type scale ranging from Strongly Agree to Disagree Strongly. The responses were as follows: (1) *Strongly Disagree*, (2) *Somewhat Disagree*, (3) *Disagree*, (4) *Neither Agree nor Disagree*, (5) *Agree*, (6) *Somewhat Agree*, and (7) *Strongly Agree.* Although the questions were answered using an ordinal scale, the summation of the data from the four constructs was analyzed as interval data to meet the assumptions necessary for parametric measurement.

Data Analysis and Statistical Procedures

As conceptualized in Figure 3.1, the main research question that guided this study was the following: to what extent is the relationship between UTAUT variables (PE, EE, and SI) and counselor educators' BI to use IIVR as a pedagogical tool for counseling education? The study sought to analyze the individual relationships between the constructs and the dependent variable and the moderating relationship of the variables age and gender with the constructs of the study. Descriptive statistics, correlation analysis, and moderation analysis were the most appropriate strategies for data analysis. The data collected from the surveys were input into IBM SPSS Statistics for data analysis.

To obtain a complete picture of the participants in this study, descriptive statistics were used to describe the characteristics of the sample and verify that no variables violated the assumptions underlying the statistical techniques for the research questions (Pallant, 2020). Descriptive statistics provide simple summaries of a sample through tables or graphs, which help create a cohesive analysis of the data (Fisher & Marshall, 2009). Using descriptive statistics for this study provided a foundation for additional complex analyses.

Next, the totality of data was analyzed using a multiple linear regression analysis. Multiple regression is a statistical method for studying the separate and collective levels of significance, as well as how each predictor variable contributes to predicting the change in the criterion (Heppner et al., 2016). Using multiple regression analysis, it is assumed that the variables have normal distributions; therefore, this study identified outliers using frequency distributions. Another assumption is that the independent and dependent variables have a linear relationship (Osborne & Waters, 2019). Using a correlation matrix, any independent variable with $r = .7$ and above will indicate a violation of this assumption. Additionally, Osborne and Waters (2019) identified that an assumption exists that residuals are generally distributed around the predicted variable scores. The use of residual scatterplots in IBM SPSS will allow this study to check for normality, linearity, and homoscedasticity.

A correlational design examined the relationship between two or more variables (Heppner et al., 2016). Specifically, Pearson's correlation coefficient (r) determined whether there was a statistically significant positive or negative relationship between the variables (Armstrong, 2019). Additionally, it measured the degree of statistical significance of each correlation. This statistical method analyzes the relationships between the independent variables (PE, EE, and SI) and the dependent variable (BI). The proportion of variability in the

independent variable can be used to describe the variance in the dependent variable. Finally, we tested the goodness of fit of the linear regression using a chi-square test. For this statistical measure, it was assumed that the *r* values for the two groups were obtained from random sampling and that participants were not recognized more than once, ensuring that groups of cases with at least twenty data sources were independent (Armstrong, 2019).

The following alternate hypotheses were analyzed using this method:

***H*$_a$1:** A significant relationship exists between PE and counselor educators' BI to use IIVR as a pedagogical tool.

***H*$_a$2:** A significant relationship exists between EE and counselor educators' BI to use IIVR as a pedagogical tool.

***H*$_a$3:** A significant relationship exists between SI and counselor educators' BI to use IIVR as a pedagogical tool.

Lastly, using Hayes (2018) Model 1, multiple moderation analyses were conducted to understand the interaction of each age and gender, which assessed for any conditional effect they may have on the predictor variables (PE, EE, and SI) and the criterion (BI). This fixed conditional model is appropriate because it measures the conditional effect of X on Y, defined as the amount by which two cases that differ by one unit on X are estimated to differ on Y (Hayes, 2018). Fixed-predictor models are appropriate in experimental research, where known predictors are assigned to participants by a researcher. Using IBM SPSS and Hayes SPSS Process Macro (Hayes, 2018), simple moderation models were conducted for each of the hypotheses to determine the moderating effect of either age or gender on the interaction between the predictor and criterion variables.

The following alternate hypotheses were analyzed using this method:

***H_a*1a:** Age moderates the relationship between PE and BI.

***H_a*1b:** Gender moderates the relationship between PE and BI.

***H_a*2a:** Age significantly moderates the relationship between EE and BI.

***H_a*2b:** Gender significantly moderates the relationship between EE and BI.

***H_a*3a:** Age significantly moderates the relationship between SI and BI.

***H_a*3b:** Gender significantly moderates the relationship between SI and BI.

Summary

This chapter provided a detailed overview of the research methodology for this study. This study applied a quantitative, cross-sectional, correlational research design with multiple moderation analyses to determine the factors influencing the technological acceptance of IIVR among higher education professors in counseling education. The research design employed an online survey technique using Qualtrics and consisted of 20 questions, 16 of which were taken from the UTAUT instrument by Venkatesh et al. (2003). To gain a minimum of 119 participants, study information was distributed to participants through a Counselor Educator email database. The researcher encouraged the participants to share the survey using snowball sampling. Data were collected and entered into IBM SPSS using the Hayes SPSS Process Macro (Hayes et al., 2018) to analyze the moderating effects of age and gender on the three constructs. The next chapter will provide a comprehensive overview of the results gathered from the analyses, and the subsequent chapter will explore the study's limitations and further implications.

CHAPTER FOUR: RESULTS

This study utilized a quantitative descriptive research design to examine counselor educators' attitudes toward integrating virtual reality into counselor education as a pedagogical tool. Specifically, this research explored the relationships PE, EE, and SI as potential strong predictors of counselor educators' BI to embrace IIVR as a pedagogical tool. In addition to identifying these influential factors, the study assessed whether age and gender moderate these relationships. The data was collected using a survey questionnaire, in which the UTAUT framework was applied. This chapter provides an overview of the data screening and filtering process, along with the descriptive statistics of the study, encompassing the sample size, demographic information, and bivariate associations. Furthermore, it presents the findings of analyses conducted using IBM SPSS and PROCESS Model 1 (Hayes, 2018).

Data Screening & Filtering

A survey hosted by Qualtrics was used to collect the data for this study. The survey link remained accessible to participants from January 22, 2024, until February 29, 2024, when the survey exceeded the sample size necessary for the study and was closed. Forced response validation was used to ensure complete participant response. The survey link was selected by 136 participants, all of whom completed the survey with a completion rate of 100%. Participants responded to the demographic questions in addition to the scale questions. The average time to complete the survey was 5 minutes.

Preliminary data screening involved manually assessing each survey to ensure no incomplete and duplicate responses in the dataset. After the initial screening, 136 responses remained. Next, data screening for each variable was conducted to identify any inaccuracies in the range of scores, missing values, and outliers using frequency distributions. A visual review of

the data combined with descriptive statistics analysis conducted in IBM SPSS indicated no necessary changes or concerns regarding the data. Finally, each variable was evaluated for distribution skewness. The results indicated that all variables were skewed symmetrically, with results between -0.5 and 0.5, except for gender. An analysis of gender resulted in a Kurtosis score of -1.253, indicating a slight tendency toward females, likely due to the higher participation of females than males for this study.

Descriptive Statistics

An essential component of this study is assessing demographic data to explore descriptive statistics within the study's measurements. This section first addresses the data obtained from the demographic questions administered at the beginning of the survey. Next, the data attained from the questions regarding the use of technology are reviewed. Finally, descriptive statistics about the variables and measures from the scales are reviewed.

Demographics

For the current study, a gender analysis of total counselor educator responses (n = 136) indicated that 69.9% (n = 95) of the respondents were female and 30.1% (n = 41) were male. These results are commensurate with data collected in 2021, reporting that 65.2% of full-time faculty at CACREP-accredited institutions were female, and 33.7% were male, with 1.1% identifying as an alternate identity (CACREP, 2021). The average age of participants in this study was 48.85 years old (SD = 11.18), ranging from 28 to 79 years. See Table 4.1 for further details regarding respondent age.

Table 4.1

Counselor Educator Age

Age	*n*	%
21 – 30	1	0.7

31 – 40	37	27.2
41 – 50	38	27.9
51 – 60	39	28.7
61 – 70	14	10.3
71 – 80+	7	5.1

Note: N = 136

Participants were asked to indicate their years of experience teaching a CACREP-accredited counseling program. Respondents indicated that 24.3% (*n* = 33) had been a professor for 6 months to 3 years, 25.7% (*n* = 35) for 3 years to 5 years, 27.2% (*n* = 37) for 5 years to 10 years, and 22.8% (*n* = 31) for over 10 years of experience as a professor for a CACREP-accredited counseling program. Participants were evenly distributed, representative of a variety of teaching experience.

Respondents were asked to indicate the enrollment size of their teaching programs. Of the 136 respondents, 96 entered a number as a response, and all other unanswered responses were excluded from the analysis. According to the 96 responses, student enrollment in their programs varied from 15,000 to 20,000 students, with an average student enrollment of 1902 students.

Finally, the survey asked respondents about their current use of technology as a pedagogical tool. As a tool was listed, respondents were asked to indicate their use as ‘never’, ‘sometimes’, ‘about half the time’, ‘most of the time’, and ‘always’. Respondents indicated their use as ‘always’ for learning management systems (83.8%, *n* = 114), video conferencing (57%, *n* = 57), and Microsoft Office programs (59.6%, *n* = 81). The use of videos as an instructional tool was reported by 39.7% of respondents. Finally, virtual reality as a pedagogical tool was seldom employed, with 83.1% of users (*n* = 113) indicating ‘never’. See Table 4.2 for specific data regarding the use of technology reported by the survey participants.

Table 4.2

Pedagogical Technology Utilization by Category

	Learning Management Systems		Video Conferencing		Videos		Microsoft Office Programs		Virtual Reality	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Never	1	0.7	0	0	7	5.1	1	0.7	113	83.1
Sometimes	1	0.7	39	28.7	54	39.7	13	9.6	20	14.7
About half the time	7	5.1	10	7.4	27	19.9	8	5.9	2	1.5
Most of the time	13	9.6	30	22.1	22	16.2	33	24.3	0	0
Always	114	83.8	57	41.9	26	19.1	81	59.6	1	0.7

Additionally, respondents were asked to list other forms of technology that they currently use as teaching tools outside of the categories above. The findings indicated a variety of technological tools used by the participants. Among the commonly mentioned technologies, Kahoot! emerged as a prevalent choice and was frequently cited by five participants for its beneficial use in conducting surveys and quizzes. Podcasts also featured significantly, indicating a widespread preference for audio-based learning resources. Additionally, the Kaltura video platform garnered considerable attention, with participants emphasizing its usefulness in distributing video content for educational and evaluative purposes. See Appendix G for a list of all responses.

Statistical Test Results

After collecting demographic information, counselor educators' attitudes towards virtual reality were assessed using an adapted form of the UTAUT scale (Venkatesh et al., 2003), comprising three subscales: PE, EE, and SI. Each subscale included varying numbers of questions, all scored on a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7). Statistical tests, including Pearson correlation, Spearman correlation, and linear

regression, were performed on this study's data to answer the following research questions and hypotheses:

RQ1: What is the relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

***H_0*1:** There is no significant relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool.

***H_a*1:** PE positively predicts counselor educators' intention to use IIVR as a pedagogical tool.

RQ2: To what extent does age moderate the relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

***H_0*1a:** Age will not moderate the relationship between PE and BI.

***H_a*1a:** Age will moderate the relationship between PE and BI.

RQ3: To what extent does gender moderate the relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

***H_0*1b:** Gender will not moderate the relationship between PE and BI.

***H_a*1b:** Gender will moderate the relationship between PE and BI.

RQ4: What is the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

***H_0*2:** There is no significant relationship between EE and counselor BI to use IIVR as a pedagogical tool.

***H_a*2:** EE positively predicts counselor educators' intention to use IIVR as a pedagogical tool.

RQ5: To what extent does age moderate the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

***H_0*2a:** Age will not moderate the relationship between EE and BI.

***H_a*2a:** Age will moderate the relationship between EE and BI.

RQ6: To what extent does gender moderate the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

***H_0*2b:** Gender will not moderate the relationship between EE and BI.

***H_a*2b:** Gender will moderate the relationship between EE and BI.

RQ7: What is the relationship between SI and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

***H_0*3:** There is no significant relationship between SI and counselor educators' BI to use IIVR as a pedagogical tool.

***H_a*3:** SI significantly moderates counselor educators' BI to use IIVR as a pedagogical tool.

RQ8: To what extent does age moderate the relationship between SI and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

***H_0*1a:** Age does not moderate the relationship between PE and BI.

***H_a*1a:** Age significantly moderates the relationship between PE and BI.

RQ9: To what extent does gender moderate the relationship between SI and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

***H_0*3b:** Gender will not moderate the relationship between EE and BI.

***H_a*3b:** Gender significantly moderates the relationship between SI and BI.

Measures and Variables

This section provides a detailed overview of the reliability of the scales used, measured by Cronbach's alpha scores, to ensure the internal consistency of the measures. Furthermore, the descriptive statistics of the scales for each variable, including the independent variable (counselor educators' attitudes towards virtual reality = X), the dependent variable (BI to use virtual reality = Y), and the two moderators (age and gender) are reported based on the data obtained from the sample.

Reliability

The purpose of assessment validity is to determine whether the operationalization of the constructs is reliable. There were 16 questions regarding the UTAUT's constructs of PE, EE, SI, and BI. Table 4.3 indicates each item's mean and standard deviation.

Table 4.3

Scales and Items of the UTAUT Survey

Item #	Statement	*Mean*	*SD*
PE1	I think that using IIVR will increase my chances of solving the problems I come across	4.06	1.36
PE2	I think that IIVR can assist me in encouraging interaction and participation among students	4.63	1.36
PE3	I think that IIVR is very useful in presenting new ideas in the classroom	4.54	1.36
PE4	I think IIVR could increase my productivity	3.75	1.38
PE5	I think using IIVR could increase my chances for an increase in salary	3.18	1.51
EE1	I think IIVR application/system is easy to use	3.86	0.99
EE2	I think learning how to use IIVR application/system will be easy for me	4.57	1.30
EE3	I think interaction with the IIVR application/system will be clear and easy to understand	4.17	1.25
EE4	I think it would be easy for me to master the IIVR application/system	4.43	1.25

SI1	An individual who influenced my behavior thinks I should use this system	2.32	1.35
SI2	An important individual made me to think that I should use this system	2.38	1.43
SI3	I think management would be very helpful in helping me to adopt the IIVR application/system	3.98	1.58
SI4	In general, I think the organization would support the usage of an IIVR application/system	4.11	1.28
BI1	I intend to use an IIVR application/system within the next (12) months	2.59	1.47
BI2	I predict that I will be using an IIVR application/system within the next (12) months	2.72	1.52
BI3	I plan to use an IIVR application/system within the next (12) months	2.51	1.46

Note: N = 136.

According to Venkatesh and colleagues (2003), the constructs of the UTAUT should have good internal consistency, with a reported Cronbach's α greater than 0.70. In this study, there were four scales used in the survey questionnaire to measure the constructs proposed in the model, specifically PE, EE, SI, and BI. To prove that these scales satisfied the model constructs consistently and accurately, a scale reliability analysis was performed to assess internal consistency. A reliability coefficient was calculated using SPSS for each set of constructs. The analysis showed that all constructs had a higher reliability of $\alpha < 0.7$. Cronbach's α value varied between 0.72 for SI and 0.96 for BI. Overall, the results showed that all alpha values of the study instrument were reliable and exhibited appropriate construct reliability. See Table 4.4.

Table 4.4

Cronbach's α Value

Constructs	# of items	α	Reliability
PE	5	0.88	High
EE	4	0.90	High
SI	4	0.72	High

BI	3	0.96	Excellent
PE+EE+SI+BI	16	0.90	High

Parametric Tests

The relationships between the study variables were investigated using the Pearson zero-order correlation coefficient. The items in the survey PE1, PE2, PE3, PE4, and PE5, and EE1, EE2, EE3, and EE4, and SI1, SI2, SI3, and SI4, BI1, BI2, and BI3 were combined and renamed PE, EE, SI, and BI respectively as scale variables. Preliminary analyses were performed to confirm the assumptions of normality, linearity, and homoscedasticity using scatterplots and a Pearson zero-order correlation coefficient. The data had no outliers, as determined by the frequency distributions. Further analysis indicated no violation of the assumption of a linear relationship, as the independent variables were less than $r = .07$.

As indicated in Table 4.5, the correlation analysis revealed significant positive relationships between the variables. Specifically, PE was significantly positively correlated with EE ($r = 0.29$, $p < 0.001$) and BI ($r = 0.56$, $p < 0.001$). Similarly, EE was significantly positively correlated with SI ($r = 0.23$, $p < 0.001$) and BI ($r = 0.39$, $p < 0.001$). SI was significantly correlated with BI ($r = 0.55$, $p < 0.001$). These findings suggest that perceptions of PE, EE, and SI are positively associated with counselor educators' BI to use IIVR as a pedagogical tool. Additionally, the strong correlations between PE and BI highlight the importance of perceived usefulness and effectiveness in influencing the intention to adopt virtual reality technology in educational settings.

Table 4.5

Zero-Order Pearson Correlations Between All Variables

	1	2	3	4

PE (1)	—			
EE (2)	.29**	—		
SI (3)	.46**	.23**	—	
BI (4)	.56**	.40**	.55**	—

Note. N = 136
Note. PE = performance expectancy, EE = effort expectancy, SI = social influence, BI = behavioral intention
**Correlation significant at the p < 0.01 level (2-tailed)

Multiple Linear Regression

The study results are presented in the analysis sequence and separated by the research question. This section discusses the interactions between the predictor variables (PE, EE, and SI) and the dependent variable (BI). The aim is to follow the analytical process systematically; therefore, the following section will transition to a review of the moderating relationships between age and gender on the relationship between predictor variables and BI.

Performance Expectancy and Behavioral Intention

RQ1: What is the relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

$H_0$1: There is no significant relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool.

H_a1: PE positively predicts counselor educators' BI to use IIVR as a pedagogical tool.

Descriptive statistics revealed that the mean BI score was 2.61 (*SD* =1.42), while the mean PE score was 4.03 (*SD* = 1.44) in a sample of 136 participants. Pearson correlation analysis demonstrated a statistically significant correlation between PE and BI (r = 0.56, $p < .001$), explaining approximately 31.4% of the variance in BI. The collinearity diagnostics suggested no

multicollinearity issues. The analysis of variance (ANOVA) showed a significant regression model ($F(1,134) = 61.40$, $p = <.001$), indicating that with each unit increase in PE, BI increases by .69 units. These findings support the hypothesis that a statistically significant relationship exists between PE and counselor educators' BI to use IIVR as a pedagogical tool. Table 4.6 illustrates this relationship.

Table 4.6

Linear Regression Results: Performance Expectancy (X) on Behavioral Intention (Y)

				95% CI	
Source	*B*	*SE*	*p*	*LL*	*UL*
Constant	-.20	.37	.59	-.94	.54
PE	.69	.09	<.001	.52	.87

Note. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Effort Expectancy and Behavioral Intention

RQ4: What is the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

$H_0$2: There is no significant relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool.

H_a2: EE positively predicts counselor educators' BI to use IIVR as a pedagogical tool.

Descriptive statistics revealed that the mean BI score was 2.61 (SD =1.42), while the mean EE score was 4.26 (SD = 1.05) in a sample of 136 participants. Pearson correlation analysis demonstrated a statistically significant positive relationship between EE and BI (r = 0.40, $p < .001$), explaining approximately 39.6% of the variance in BI. Collinearity diagnostics were examined to assess potential multicollinearity among the predictor variables. The condition index for the model was low (1.000 for the first dimension), indicating minimal multicollinearity. Additionally, the variance proportions of the predictor variables were relatively balanced.

Consequently, no specific corrective actions were necessary to address collinearity in the current analysis. The analysis of variance (ANOVA) showed a significant regression model ($F(1,134) = 24.89$, $p = <.001$), indicating that with each unit increase in EE, BI increased by .54 units. These findings support the hypothesis that a statistically significant relationship exists between EE and counselor educators' BI to use IIVR as a pedagogical tool. Table 4.7 illustrates this relationship.

Table 4.7

Linear Regression Results: Effort Expectancy (X) on Behavioral Intention (Y)

				95% CI	
Source	*B*	*SE*	*p*	*LL*	*UL*
Constant	-.32	.47	.496	-.611	1.26
EE	.54	.11	<.001	.324	.75

Social Influence and Behavioral Intention

RQ7: What is the relationship between SI and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

$H_0$3: There is no significant relationship between SI and counselor educators' BI to use IIVR as a pedagogical tool.

H_a3: SI positively predicts counselor educators' BI to use IIVR as a pedagogical tool.

Descriptive statistics revealed that the mean BI score was 2.61 (SD =1.42), while the mean SI score was 3.19 (SD = 1.04) in a sample of 136 participants. Pearson correlation analysis demonstrated a statistically significant positive correlation between SI and BI ($r = 0.56$, $p <$ .001), explaining approximately 30.3% of the variance in BI. The collinearity diagnostics suggested no multicollinearity issues. The analysis of variance (ANOVA) showed a significant regression model ($F(1,134) = 58.25$, $p = <.001$), indicating that with each unit increase in SI, BI increases by .75 units. Overall, these findings support the hypothesis that a statistically

significant relationship exists between SI and counselor educators' BI to use IIVR as a pedagogical tool. Table 4.8 illustrates this relationship.

Table 4.8

Linear Regression Results: Social Influence (X) on Behavioral Intention (Y)

				95% CI	
Source	*B*	*SE*	*p*	*LL*	*UL*
Constant	-.20	.33	.55	-.46	.86
SI	.75	.10	<.001	.56	.95

Multiple Moderated Model Analyses

Multiple moderated model analyses were conducted using Model 1 PROCESS v.4.2 and SPSS 29 for the remaining hypotheses. In the previous section, each variable in these analyses was assessed for normality, linearity, homoscedasticity, and multicollinearity. Normality was assessed visually and through the Shapiro-Wilk test, while linearity and homoscedasticity were assessed using scatterplots and residual plots.

Moderating the Impact of Age on PE and BI

RQ2: To what extent does age moderate the relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

$H_0$1a: Age does not moderate the relationship between PE and BI.

H_a1a: Age moderates the relationship between PE and BI.

H_a1a proposed that age moderates the relationship between PE and BI. First, the effect of age on the relationship between PE and BI was assessed. The results of the initial moderation analysis indicated that the interaction between PE and age was marginally non-significant (B = -.02, SE = -.01, p = .06), indicating no moderating effect and an R-squared change of .02. Therefore, the hypothesis was not supported by the data. Age did not moderate the relationship between PE and BI. Table 4.9 illustrates this relationship.

Table 4.9

PROCESS Model 1 Results: Performance Expectancy Moderated by Age

				95% CI	
Source	*B*	*SE*	*p*	*LL*	*UL*
PE	1.47	.43	.00	.61	2.33
Age	.05	.03	.14	-.02	.12
PE x Age	-.02	.01	.06	-.03	.00

Moderating the Impact of Gender on PE and BI

RQ3: To what extent does gender moderate the relationship between PE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

$H_0$1b: Gender will not moderate the relationship between PE and BI.

H_a1b: Gender will moderate the relationship between PE and BI.

H_a1b proposed that gender moderates the relationship between PE and BI. However, the results from the moderation analysis indicated that the interaction between PE and gender was not statistically significant (b =.08, SE = .22, p = .74), indicating no moderation effect and an R-squared change of .00. Therefore, the hypothesis was not supported by the data. Gender did not moderate the relationship between PE and BI. Table 4.10 illustrates this relationship.

Table 4.10

PROCESS Model 1 Results: Performance Expectancy Moderated by Gender

				95% CI	
Source	*B*	*SE*	*p*	*LL*	*UL*
PE	.57	.42	.17	-.25	1.39
Gender	.07	.95	.94	-1.80	1.94
PE x Gender	.08	.22	.74	-.37	.52

Moderating the Impact of Age on EE and BI

RQ5: To what extent does age moderate the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

$H_0$2a: Age will not moderate the relationship between EE and BI.

H_a2a: Age will moderate the relationship between EE and BI.

H_a2a proposed that age moderates the relationship between EE and BI. However, the results from the moderation analysis indicated that the interaction between EE and age was not statistically significant (B = -.01, SE = .01, p = .42), indicating no moderation effect and an R-squared change of .00. Therefore, the hypothesis was not supported by the data. Age did not moderate the relationship between EE and BI. Table 4.11 illustrates this relationship.

Table 4.11

PROCESS Model 1 Results: Effort Expectancy Moderated by Age

				95% CI	
Source	*B*	*SE*	*p*	*LL*	*UL*
EE	.91	.52	.08	-.11	1.93
Age	.01	.04	.78	-.07	.10
EE x Age	-.01	.01	.42	-.03	.01

Moderating the Impact of Gender on EE and BI

RQ6: To what extent does gender moderate the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

$H_0$2b: Gender will not moderate the relationship between EE and BI.

H_a2b: Gender will moderate the relationship between EE and BI.

H_a2b proposed that gender significantly moderates the relationship between EE and BI. However, the results from the moderation analysis indicated that the interaction between EE and gender was not statistically significant (B = -.05, SE = .29, p = .86), indicating no moderation effect and an R-squared change of .00. Therefore, the hypothesis was not supported by the data. Gender did not moderate the relationship between EE and BI. Table 4.12 illustrates this relationship.

Table 4.12

PROCESS Model 1 Results: Effort Expectancy Moderated by Gender

				95% CI	
Source	*B*	*SE*	*p*	*LL*	*UL*
EE	.64	.55	.25	-.45	1.72
Gender	.54	1.28	.68	-1.99	3.06
EE x Gender	-.05	.29	.86	-.63	.53

Moderating the Impact of Age on SI and BI

RQ8: To what extent does age moderate the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

$H_0$3a: Age will not moderate the relationship between EE and BI.

H_a3a: Age will moderate the relationship between EE and BI.

H_a3a proposed that age significantly moderates the relationship between SI and BI. However, the results from the moderation analysis indicated that the interaction between SI and age was not statistically significant (B = -.01, SE = .01, p = .13), suggesting no moderation effect. Additionally, the R-squared change associated with the interaction term is .01. Therefore, the data did not support the hypothesis, and age did not moderate the relationship between SI and BI. Table 4.13 illustrates this relationship.

Table 4.13

PROCESS Model 1 Results: Social Influence Moderated by Age

				95% CI	
Source	*B*	*SE*	*p*	*LL*	*UL*
SI	1.37	.43	.00	.51	2.22
Age	.02	.03	.42	-.03	.08
SI x Age	-.01	.01	.13	-.03	.00

Moderating the Impact of Gender on SI and BI

RQ9: To what extent does gender moderate the relationship between EE and counselor educators' BI to use IIVR as a pedagogical tool in counselor education?

$H_0$3b: Gender will not moderate the relationship between EE and BI.

H_a3b: Gender will moderate the relationship between EE and BI.

H_a3b proposed that gender significantly moderates the relationship between SI and BI. However, the results from the moderation analysis indicated that the interaction between SI and age was not statistically significant (B = .34, SE = .22, p = .13), indicating no moderation effect and an R-squared change of .01. Therefore, the hypothesis was not supported by the data. Gender did not moderate the relationship between SI and BI. Table 4.14 illustrates this relationship.

Table 4.14

PROCESS Model 1 Results: Social Influence Moderated by Gender

				95% CI	
Source	*B*	*SE*	*p*	*LL*	*UL*
SI	.17	.40	.67	-.62	.96
Gender	-.76	.75	.31	-2.24	.72
SI x Gender	.34	.22	.13	-.10	.78

Summary

This chapter provides an overview of the findings from this quantitative, cross-sectional, correlational research design with multiple moderation analyses to determine the factors influencing technological acceptance of IIVR among higher education professors in counseling education. Following a review of the participant's demographic information, this chapter reviews the descriptive statistics from the study data. Survey responses were then used to examine the direct and indirect relationships between PE, EE, SI, and BI. The findings from Pearson's correlation analysis were used to present the initial findings. After the correlation analyses were completed, three multiple linear regressions were used independently to determine the

relationship between the three predictor variables and BI. Next, six moderated model analyses were used to address the moderating impact of age and gender on each of the three predictors' relationships with BI. Through these analyses, each of the nine hypotheses is addressed. The results indicated significant relationships existed between PE and BI, EE and BI, and SI and BI, as hypothesized. PROCESS analysis determined that age and gender did not moderate the relationship between the predictor variables. In the next chapter, a discussion of the study's findings, implications, limitations, and future research suggestions will be reviewed.

CHAPTER FIVE: DISCUSSION

In this concluding chapter, a discussion of the findings from the study will be synthesized and used to explore its potential for practical application within the counseling education field. This study explored the relationship between PE, EE, SI, and BI to use IIVR among counselor educators in higher education settings. Additionally, this study explored the potential moderating impact of age and gender on each relationship to gain additional insight into integrating IIVR into counseling education. This chapter summarizes the findings and implications for future research endeavors and concludes with the study's limitations.

Discussion of Findings

This study aimed to fill a gap in the literature by exploring the acceptance of IIVR among counselor educators in higher education settings. Framed by the UTAUT, the study sought to understand the factors influencing counselor educators' intentions to use IIVR as a pedagogical tool by exploring the relationships between different predictors that impact BI. Based on a representative survey of counselor educators, the study revealed significant positive correlations between BI and PE (r = .56), EE (r = .40), and SI (r = .55), similar to previous studies in educational contexts (Al-Rahmi et al., 2020; Bansal et al., 2022; Guggemos et al., 2020; Jaradat et al., 2020; Semlambo et al., 2023). These findings indicate that predictive factors play a vital role in accepting IIVR as a pedagogical tool. Additional analyses assessed the moderating influence of age and gender and found that neither significantly moderated these relationships. These results emphasize a universal inclination towards adopting IIVR technology across different demographics in the counselor educator population.

Performance Expectancy

To explore the relationship between PE and BI to use IIVR, a PE subscale measured counselor educators' attitudes towards the ability of virtual reality to enhance their efficiency in job-related tasks. Prior research suggests that PE significantly influences BI to use technology (Semlambo et al., 2023; Shaya et al., 2023; Shen et al., 2019; Venkatesh et al., 2003). Consistent with these findings, the current study showed that PE significantly influenced counselor educators' BI to use IIVR and was a statistically significant predictor (β=.56, p <.001). Additionally, similar to Venkatesh et al. (2003), the PE determinant was the strongest predictor of BI.

Valuable insights were obtained by analyzing each survey item individually. For the first PE item in the survey, *"I think that using IIVR will increase my chances of solving the problems I come across,"* 41.4% of participants agreed, 34% disagreed, and 46% remained neutral. For the second PE item in the survey, *"I think that IIVR can assist me in encouraging interaction and participation amongst students"* 61% of the participants agreed, 15.5% disagreed, and 23.5% remained neutral. For the third PE item in the survey, "*I think that IIVR is very useful in presenting new ideas in the classroom,"* 54.4% of participants agreed, 16.2% disagreed, and 29.4% remained neutral. For the fourth PE item in the survey, "*I think IIVR could increase my productivity,"* 25% of the participants agreed, 34.6% disagreed, and 40.4% remained neutral. For the fifth PE item in the survey, "*I think using IIVR could increase my chances for an increase in salary,"* 14.6% of the participants agreed, 51.5% disagreed, and 33.8% remained neutral.

The survey responses indicated varying levels of support for different PE items. 61% of the respondents agreed that the integration of IIVR could assist in encouraging interaction and participation among students, indicating strong support for its use in promoting student engagement. Similarly, a majority found IIVR practical for presenting new ideas in the

classroom, with 54.4% in agreement. There was also moderate support for the IIVR's ability to improve problem-solving skills, with 41.4% agreeing. However, the survey also identified areas of concern that required attention before integrating the IIVR. Uncertainty about productivity and salary improvement was a significant concern, with only 14.6% of participants believing in the potential for an increase in salary and 25% believing in the IIVR's ability to increase productivity. This concern could be due to a lack of knowledge of IIVR and would need to be reassessed as technology develops.

On average, respondents neither agreed nor disagreed that virtual reality would improve their job performance ($M = 4.03$, $SD = 1.15$), communicating openness to the concept. These findings support the view that the perceived benefits of IIVR in enhancing teaching effectiveness, encouraging interaction and participation among students, and increasing productivity are the key determinants driving its adoption.

Effort Expectancy

The second relationship explored in this study was between EE and BI to use IIVR as a pedagogical tool in counselor education. The EE subscale measured counselor attitudes regarding perceived simplicity and convenience correlated with the use of IIVR. Prior research has suggested a significant relationship between EE and BI in educational settings (Al-Rahmi et al., 2020; Al-Rahmi et al., 2022; Bansal et al., 2022; Guggemos et al., 2020; Jaradat et al., 2020; Semlambo et al., 2023). The findings of this study support the hypothesis that there is a statistically significant positive relationship ($\beta = .40$, $p < .001$) between EE and counselor educators' BI to use IIVR as a pedagogical tool. The results highlight the necessity of assessing the ease of use when introducing an IIVR system to counselor educators.

By evaluating the responses on the EE subscale, the necessity of assessing ease of use was prevalent. For the first EE item in the survey, *"I think IIVR application/system is easy to use,"* 17.6% of the participants agreed, 24.9% disagreed, and 57.4% remained neutral. For the second EE item in the survey, *"I think learning how to use IIVR application/system will be easy for me,"* 58.9% of the participants agreed, 19.9% disagreed, and 29% remained neutral. For the third EE item in the survey, "*I think interaction with the IIVR application/system will be clear and easy to understand,"* 39.7% of the participants agreed, 26.5% disagreed, and 33.8% remained neutral. For the fourth EE item in the survey, "*I think it would be easy for me to master the IIVR application/system,"* 51.4% of participants agreed, 21.4% disagreed, and 27.2% remained neutral.

These results suggest that while counselor educators possess confidence in their ability to learn and master the IIVR system, hesitance exists in its adoption. Successful integration of the IIVR system would need to decrease the amount of effort a user takes to learn and utilize the software. Significant training should be included to provide a comprehensive understanding of the capabilities and benefits of the program. Developing a user-friendly interface, comprehensive training manual, and comprehensive initial training with access to ongoing technical support could reduce hesitancy, enhance the overall user experience, and increase the likelihood of IIVR adoption.

Social Influence

The final of the three main predictor variable relationships explored in this study was the relationship between SI and the BI to use IIVR as a pedagogical tool in counselor education. Prior research has suggested a significant relationship between SI and BI to use technology (Shen et al., 2019; Teng et al., 2022; Venkatesh, 2003). The SI subscale gauged the participants'

beliefs regarding the expectations of significant others regarding virtual reality adoption. Due to the novelty of IIVR, the results suggested that respondents disagreed that others expected them to adopt virtual reality and indicated that they had not been influenced by using the system (M = 3.19, SD = 1.04).

The survey responses for the SI items presented varied levels of external influence on participants' willingness to use IIVR. The first two survey items assessed an individual's personal experience with the influence of using the IIVR. For the first SI item in the survey, *"An individual who influenced my behavior thinks I should use this system,"* 4.4% of the participants reported a previous influence, while 69.8% disagreed. Similarly, for the second SI item in the survey, *"An important individual made me think that I should use this system,"* 69.1% disagreed, and 22.8% remained neutral.

The last two survey items for SI assessed the participants' perceptions regarding the influence of management and their affiliated college/university. "*I think management would be very helpful in helping me to adopt the IIVR application/system,"* resulting in a fairly even split between participants: 38.2% of participants agreed, and 32.4% disagreed. For the fourth SI item in the survey, "*In general, I think the organization would support the usage of an IIVR application/system,"* 42.6% of the participants agreed, 23.6% disagreed, and 33.8% remained neutral. This reflects a moderate confidence level in the organization's ability to embrace and support the integration of IIVR.

The findings from this subscale may indicate a lack of awareness of IIVR technology, as 113 of the respondents to this survey indicated no previous use of virtual reality as a pedagogical tool. However, this subscale remains pertinent as it indicates the need and desire for organizational support and the ability to receive influence within a supportive environment.

These findings can inform the development of an organizational plan for IIVR in counseling education in the future.

Behavioral Intention

The survey explored the current intention of counselor educators to adopt IIVR, using three questions designed to assess future use. The findings consistently demonstrated a low level of intention to integrate IIVR into practice within the following year, which may be attributed to the novelty of the technology. Specifically, 69.8% of participants responded that they disagreed with the statement, "*I intend to use an IIVR application/system within the next (12) months"*. Comparably, 68.4% of the participants disagreed with the statement, "I predict that I will be using an IIVR application/system within the next (12) months," and 68.4% disagreed. The resistance was more substantial in response to the statement, "*I plan to use an IIVR application/system within the next (12) months,"* with an astounding 74.2% of the participants in disagreement. These results highlight the significant reluctance of counselor educators to adopt this new technology quickly, likely due to its novelty.

Age and Gender

Venkatesh et al. (2003) found that the strength of the relationship between the predictor variables (PE, EE, and SI) and the determinant (BI to use technology) varied by age and gender. Six hypotheses in the current study, namely H1a, H1b, H2a, H2b, H3a, and H4b, explored the moderating effect of age and gender on the relationship between predictor variables and BI to use IIVR. Although the literature supports the moderating impact of age and gender, this was not supported by the findings of this study. This may be due to the sample size, which should be reassessed using a larger sample size.

Theoretical Implications of the Study

The theoretical framework for this study, the UTAUT (Venkatesh et al., 2003), suggested three direct determinants of user acceptance behavior that were incorporated into this study: PE, EE, and SI. These determinants provided insight into the participant's behavioral intention (BI) to perform the studied behavior. Evaluating users' acceptance can provide valuable insight for designing interventions for populations less motivated to use new systems (Venkatesh et al., 2003). Numerous studies have shown that higher education faculty are less motivated for pedagogical change and do not integrate technology into their teaching as much as they could or should (Belt & Lowenthal, 2020; Koehler & Mishra, 2005); therefore, UTAUT was the most appropriate theoretical framework for the present study.

The study's findings enhanced the understanding of how technology was embraced within the domain of counselor education and confirmed that all three factors influence the acceptance of IIVR, although some factors were valued over others. Specifically, usefulness and ease of use were more influential than SI. Therefore, IIVR hardware and software development should consider a design that enhances teaching efficiency while offering ease of use in the learning environment. While not as influential, SI remained a predictor of BI to use and should remain a consideration in further studies as IIVR use becomes increasingly prevalent.

Moreover, this study informed the refinement and adaptation of technology adoption theories, ensuring they remain relevant and applicable across diverse higher educational settings. It found that measuring attitudes towards new, uncommon technology can impact the predictor variable of SI. Adapting a well-established technology adoption framework to a specialized higher educational setting offers a valuable contribution. Future adaptations of the UTAUT framework should include additional predictors that can account for limited knowledge of new technology.

Practical Implications for Counselor Education

The insights from this study offer significant implications for counselor educators as they provided clarity about the current level of knowledge, comfort, and willingness to integrate IIVR into counselor education. Reinforced by this study was the reality that counselor educators face pressure to balance demands, time, and career achievement in their role (DeDiego et al., 2023). As such, an additional tool, such as IIVR, must offer users benefits such as enhanced functionality and career performance while reducing the time and effort necessary to learn and integrate the tool. Participants from this study identified three overarching influential factors contributing to IIVR's integration: enhanced teaching performance, an easy-to-use system, and organizational/leadership support.

The most influential factor contributing to IIVR's integration is the desire for technology to enhance teaching performance. Participants' preference for an active and engaged classroom environment was evident and likely connected to their view of their teaching performance. Counselor educators from this study indicated an active use of technology in their current teaching practice, with the prevalence of technologies such as Kahoot! and Podcasts. Their current integration of technology indicates their interest in interactive and multimedia-based learning approaches, which suggests some proclivity toward IIVR. Many responses indicated an openness for IIVR, given that it increased student interaction and participation. Current IIVR programs have successfully increased student interaction and engagement by facilitating counselor development through increasing awareness and sensitivity in content areas such as social and cultural diversity, human growth and development, and helping relationships. Thus, IIVR can provide students with counseling skills and the application of content while facilitating

collaboration among students (Hurt et al., 2020), resulting in an overall feeling of enhanced teaching performance for the counselor educator.

Amidst the excitement about the potential of IIVR, hesitancy lingered amongst study participants surrounding IIVR adoption. Counselor educators indicated confidence in their ability to learn and master the IIVR system; however, they desired a system that offered ease of use. Much like the current study's findings, Garone and colleagues (2019) found that ease of use influenced faculty acceptance of digital learning materials. For counselor educators who feel confident in their IIVR abilities, current applications exist that could immediately integrate IIVR into their curriculum, providing them familiarity with the technology while remaining in compliance with CACREP accreditation standards. Readily available IIVR tools focusing on breathing exercises and meditation can be immediately beneficial. Ultimately, successful integration of the IIVR system would likely require significant training to provide a comprehensive understanding of the capabilities and benefits of the program. Developing a user-friendly interface, comprehensive training manual, and extensive initial training with access to ongoing technical support could reduce hesitancy, enhance the overall user experience, and increase the likelihood of IIVR adoption.

Lastly, the study findings indicated that organizational support is necessary when integrating IIVR. To have a successful, enduring transition to IIVR, organizational and managerial support should be engaged and present during a controlled integration, providing varying levels of support according to each professor's needs. The ACA Code of Ethics (2014) requires counselor educators to develop competence in using the technology before integration into the classroom. Ensuring faculty have access to virtual reality headsets and plenty of opportunities for paid practice time could be a beneficial step in increasing their level of comfort

before introducing it in the classroom. To evaluate IIVR's effectiveness, counselor educators should incorporate IIVR in ways that align with learning objectives. Organizations might find it helpful to conduct a slow integration process that recruits volunteers or selects technologically advanced current educators to create a support network of peers before the transition. Also, hesitant counselor educators must feel assured that they will not be forced to learn a new technology, which will be removed from them following a limited window to evaluate the technology's success.

IIVR holds significant potential to enrich counselor education by aligning technological innovations with counselor educators' specific needs and preferences. The key to successful integration involves ensuring that IIVR tools enhance teaching performance without increasing workload. Initial hesitation expressed by participants indicated a need for organizational support, comprehensive training, and ongoing technical support. Following a controlled, supportive release of IIVR, counselor educators could experience the profound impact of the immersive world of virtual reality.

Technological Implications

Despite significant research on the benefits of IIVR to enhance teaching effectiveness, no specially designed IIVR software programs exist to assist counselor educators in teaching the CACREP's eight foundational areas. Specific considerations derived from this study could prove beneficial to inform the development of counseling education-specific programming incorporating IIVR technology. Notably, a vital detail learned from this study is that any programming developed should align with counselor educators' desire to improve their job performance and reduce their workload.

IIVR presents a unique opportunity to augment the foundational curriculum in counselor education. Developed with CACREP requirements in mind, this technology could drastically transform the counseling curriculum. For example, adding IIVR programming into introductory counseling skills courses could reinvent traditional role-playing exercises, allowing professors to simulate diverse counseling scenarios that students might not otherwise encounter. To be adopted into practice, this pedagogical tool must allow students to practice and enhance their skills across all areas of counselor preparation while also appealing to the counselor educators' desire to improve their teaching effectiveness and efficiency.

Additionally, developing this specially designed software should facilitate counselor educators' ability to reduce their workload by serving as a trustworthy supplement to standard lessons. This tool should be able to prepare counseling students by presenting new concepts at varying levels of difficulty while offering ongoing educational support, thereby reducing the student's dependence on the professor. Another layer of support for professors would include a component tasked to assist with assessments and grading, reducing the time spent manually grading assignments. Including a computer-generated grading or feedback system during IIVR scenarios would serve as a supplement and benefit for counselor educators.

Developing and adopting counseling-specific IIVR programming aligned with the rigorous standards of CACREP could significantly shift pedagogical approaches, directly impacting educational outcomes. By incorporating this study's findings, the necessity to tailor IIVR programs designed to reduce counselor educators' workloads and increase their productivity and performance becomes evident. The continued development and assessment of targeted IIVR counseling applications will be vital in realizing the benefits, potentially setting a

new standard in counselor training that emphasizes ethics, empathy, effectiveness, and experiential learning.

Limitations of the Study

This study offered significant contributions but faced several limitations that may impact reproducibility. The first limitation of this study was the lack of prior research studies on the use of IIVR in counselor education. It became necessary to extend the research parameters to additional programs of study in higher education and research the use of IIVR in mental health counseling. This adjustment proved challenging when developing the theoretical foundation for the research questions. While UTAUT was the only theoretical framework used to frame the study, other models or factors could have provided additional insight into accepting unfamiliar technologies in education. Future research should consider extending the depth of the theoretical framework.

Another limitation of the study was the potential for sample bias. Due to a slow response to the study's initial survey distribution attempt through CES-Net LISTServ emails, an IRB modification was submitted and approved, permitting the distribution of the survey through email by Liberty University professors. A notable increase in survey responses occurred immediately after the study information was shared, which solicited participants from Liberty University. While all survey responses were anonymous, the potential for sample bias is present, indicating that the results may not reflect the general population of counselor educators. Further research should allocate additional time and resources to securing responses from various universities to ensure equal representation. Additionally, the study questions neglected to ask participants if they taught courses online or in a residential capacity. This detail would be important to include in future studies. Counselor educators who teach in an online capacity may

have a greater level of comfort with technology due to their position requirements. Furthermore, the study lacked representation from demographics beyond age and gender. Future research should consider the influence of ethnicity, income, or geographic location on attitudes toward technology use in counselor education.

The novelty of IIVR presented additional limitations in this study. While participants were given a brief definition of IIVR at the study's outset, they could not experience the technology firsthand. This limitation became apparent upon reviewing the survey questions, which failed to appropriately assess participants' understanding of the technology. Furthermore, the unfamiliarity with the technology might have led to a high rate of neutral responses, marked as "neither agree nor disagree." It is unclear whether their neutral stance was due to the lack of knowledge of the technology, a lack of confidence in their anonymity, or a lack of interest in the study. The absence of direct interaction with IIVR poses significant challenges and may have influenced participants to undervalue the potential benefits and usability of IIVR in counselor education.

Recommendations for Future Research

To build on the findings of this study, several recommendations are proposed for future research. First, it is recommended that future studies expand on the current study by conducting additional research on integrating IIVR into counselor education. Providing participants with hands-on experience with the technology is essential to assess its potential impact more effectively. Adopting a mixed-methods approach would be especially beneficial, as it provides both the quantitative data and the qualitative insights from participants' personal experiences. A pre- and post-hoc test would allow for a comparative analysis of attitudes and perceptions before

and after direct interaction, potentially offering more insightful data on the effectiveness and user-friendliness of IIVR as a pedagogical tool.

Additionally, future research can extend the use of UTAUT in counselor education by including the fourth predictor variable from the scale, Facilitating Conditions (FC). FC is a variable that measures organizational support and its impact on actual use behavior. A study that integrates IIVR into pedagogical use with an experimental group and then assesses for PE, EE, SI, and FC would provide valuable insight into further defining any impact on the relationship between BI and Use Behavior (UB) within counselor education. This would extend the theory and applicability of UTAUT within the counseling field.

Finally, future research should assist in developing IIVR-based software programs tailored to counselor education, focusing on critical areas such as empathy development, crisis management, or ethical decision-making. Subsequent studies could then evaluate the long-term effects of traditional learning methods versus IIVR-enhanced learning, aiming to provide insights into the efficacy of technological integration in enhancing student outcomes in counselor education.

Conclusion

This study explored the integration of IIVR as a pedagogical tool in counselor education. Through the lens of the UTAUT, it examined the relationships between predictors and potential moderators influencing the BI of counselor educators toward IIVR. Using a quantitative, cross-sectional, correlational research design with multiple moderation analyses to quantitative provide significant findings. The findings of this study not only extend the UTAUT theory, but also offer practical implications for the effective incorporation of IIVR into the counseling curriculum. Consistent with the literature, significant relationships were found between PE, EE, SI, and BI to

use, providing a foundation for additional studies. Although the study faced several limitations, such as potential sample and technology bias, significant recommendations emerged that could transform the future of counseling. Integrating advanced technologies like IIVR could enhance teaching methods and student learning outcomes as counselor education evolves. The findings from this study pave the way for future research into the effective integration of technology in counselor education, aiming to maximize benefits while minimizing barriers to acceptance and use. By pushing the boundaries of traditional educational practices and embracing innovative technological solutions, future counselors become better equipped for the complex challenges of the counseling world.

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Appendix A: Initial IRB Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

January 17, 2024

Melissa Smith
Stacey Lilley

Re: IRB Exemption - IRB-FY23-24-990 Counselor Educators' Acceptance of Immersive and Interactive Virtual Reality as a Pedagogical Tool

Dear Melissa Smith, Stacey Lilley,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required.

Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:
The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;

For a PDF of your exemption letter, click on your study number in the My Studies card on your Cayuse dashboard. Next, click the Submissions bar beside the Study Details bar on the Study details page. Finally, click Initial under Submission Type and choose the Letters tab toward the bottom of the Submission Details page. Your information sheet and final versions of your study documents can also be found on the same page under the Attachments tab.

Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account.

If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,
G. Michele Baker, PhD, CIP
Administrative Chair
Research Ethics Office

Appendix B: Modified IRB Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

February 13, 2024

Melissa Smith
Stacey Lilley

Re: Modification - IRB-FY23-24-990 Counselor Educators' Acceptance of Immersive and Interactive Virtual Reality as a Pedagogical Tool

Dear Melissa Smith, Stacey Lilley,

The Liberty University Institutional Review Board (IRB) has rendered the decision below for IRB-FY23-24-990 Counselor Educators' Acceptance of Immersive and Interactive Virtual Reality as a Pedagogical Tool.

Decision: Exempt

Your request to utilize counseling-specific listservs, social media, and a flyer and letter placed within faculty members' mailboxes to recruit participants and to recruit LU faculty as participants has been approved. Thank you for submitting your revised study documents for our review and documentation. **For a PDF of your modification letter, click on your study number in the My Studies card on your Cayuse dashboard. Next, click the Submissions bar beside the Study Details bar on the Study Details page. Finally, click Modification under Submission Type and choose the Letters tab toward the bottom of the Submission Details page. If your modification required you to submit revised documents, they can be found on the same page under the Attachments tab.**

Thank you for complying with the IRB's requirements for making changes to your approved study. Please do not hesitate to contact us with any questions.

We wish you well as you continue with your research.

Sincerely,

G. Michele Baker, PhD, CIP
Administrative Chair
Research Ethics Office

Appendix C: Email Permission Request (IRB Approved)

From: Smith, Melissa Ann [redacted]
Subject: Requesting permission for CESNET-L survey posting
Date: January 19, 2024 at 12:29 PM
To: Jencius, Martin [redacted]
Cc: Lilley, Stacey Custer (Ctr for Counseling & Family Studies) [redacted]

January 19, 2024

Dr. Marty Jencius
CESNET-L Listowner
Kent State University
800 E. Summit Street
Kent, OH 44242

Dear Dr. Jencius,

As a doctoral student in the Department of Counselor Education and Family Studies at Liberty University, I am conducting research to fulfill the degree requirements for a doctoral degree. The title of my research project is Counselor Educators' Acceptance of Immersive and Interactive Virtual Reality as a Pedagogical Tool, and the purpose of my research is to gain insight into counselor educators' attitudes towards the integration of immersive and interactive virtual reality as a pedagogical tool. The Institutional Review Board at Liberty University has approved this study and the approval # is IRB-FY23-24-990.

I request your permission to utilize CESNET-L to recruit participants for my research.
Anticipated Posting Schedule on CESNET-L listserv *(as is permissible by the "3 traditional calls for research" rule of CESNET-L for studies relating to counselor education)* would be immediately upon approval and then every 10 days following that date until 3 postings have occurred.

Participants will be asked to complete a survey utilizing the platform Qualtrics. The survey can be found at: https://liberty.co1.qualtrics.com/jfe/form/SV_eqXmhlPLXcyJ9jw. This link has been verified and will be included in the recruitment request. Participants will be presented with an informational sheet about the study before participating. Participating in this study is entirely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, respond by email to [redacted] or contact me at [redacted]. My advisor for this study is Dr. Stacey Lilley and she can be reached at [redacted]

Sincerely,

Melissa Smith
PhD Candidate

———————————

Appendix D: CESNET LISTServ Posting (IRB Approved)

From: Smith, Melissa Ann [redacted]
Subject: [External] EXT: 1st Call: Seeking Counselor Educators for Virtual Reality Dissertation Study - Your Participation is Requested!
Date: January 24, 2024 at 10:12 AM
To: [redacted]

You don't often get email from [redacted] Learn why this is important

[EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content.]

Greetings Colleagues! ☺️

My name is Melissa Smith, and I am a doctoral candidate in the Counselor Education and Supervision Ph.D. program at Liberty University. I am conducting research as part of the requirements for a doctoral degree. The purpose of my research is to understand better **counselor educators' attitudes toward integrating immersive and interactive virtual reality**, and I am writing to invite you to join my study.

Participants must be:
Current counselor educators teaching graduate students at a CACREP-accredited program.

Participants will be asked to take an anonymous online survey:
It is quick and easy and should take approximately 15 minutes to complete the survey. Participation will be completely anonymous; however, age and gender will be requested for this study. Taking part in this research project is voluntary.

Follow this link to complete the study survey:
https://liberty.co1.qualtrics.com/jfe/form/SV_eqXmhlPLXcyJ9jw.

Also, please share this survey with colleagues and invite them to participate in my research study.

For additional information about this study, please contact Melissa Smith at [redacted] or by phone at [redacted] or Dr. Stacey Lilley at [redacted].

Sincerely,

Melissa Smith
PhD Candidate
Study approval #IRB-FY23-24-990.

CAUTION: EXTERNAL SENDER Do not click any links, open any attachments, or REPLY to the message unless you trust the sender and know the content is safe.

To unsubscribe from the CESNET-L list, click the following link:
https://listserv.kent.edu/cgi-bin/wa.exe?SUBED1=CESNET-L&A=1

Appendix E: Email Permission Request for Faculty (IRB Approved)

From: **Smith, Melissa Ann** [redacted]
Subject: Request for Approval: Communication to Department Chairs for Distribution of Research Survey
Date: February 16, 2024 at 3:13 PM
To: [redacted]
Cc: Lilley, Stacey Custer (Ctr for Counseling & Family Studies) [redacted]
Ford, Kristy M (Ctr for Counseling & Family Studies) [redacted]
Miller, Ken Derance (Ctr for Counseling & Family Studies) [redacted]

Dear Dean Knapp,

I hope this email finds you well.

I am writing to formally request your approval for two key aspects related to my research project within the Department of Counselor Education and Family Studies. As a doctoral candidate deeply engaged in advancing our field, I am currently conducting research titled "Counselor Educators' Acceptance of Immersive and Interactive Virtual Reality as a Pedagogical Tool."

Firstly, I am requesting permission to contact the four department chairs within the School of Behavioral Sciences, along with the director of the Ph.D. in Counselor Education and Supervision program. My aim is to seek their assistance in distributing my research survey to faculty members within their respective departments. This collaborative effort is crucial for ensuring wide participation and gathering diverse perspectives for my study. Attached, please find a sample of the communication I intend to send for your review.

Secondly, I am requesting authorization on behalf of the department chairs to share the survey information with their faculty members. By obtaining your approval, we can streamline the process and ensure efficient survey dissemination throughout the School of Behavioral Sciences thus increasing data collection efforts.

I am pleased to inform you that I have successfully navigated the Institutional Review Board (IRB) process and obtained their approval for this research endeavor. Now, I seek your administrative approval to proceed with these requests, which are integral to the success of my study.

Should you require any further details or clarification regarding these requests, please do not hesitate to reach out to me at your convenience. Additionally, please note that I have cc'd my dissertation chair and committee members for their awareness.

Thank you for considering my request. I eagerly await your response.

Warm regards,

Melissa

Appendix F: G*Power Results

Appendix G: Current Pedagogical Technology Tools

Additional Pedagogical Technology Tools	
Acclaim	Online Assessments
AI in Qualitative Software	Online Interactive Therapy Tools
Audio and Video Recording Tools	Online Slides and Audio
CANVA	Pearson MyLab
ChatGPT	Podcasts
Cengage videos	Poll Everywhere
eBooks	Prezi
Google Forms	Slack
Jamboards	Skillsetter
Kahoot!	Spotify/other music
Kaltura	Websites
Mentimeter	YouTube
Multimedia Presentations	