Centenary University

BLEND LEARNING: MOVING BEYOND THE THREAD
QUALITY OF BLENDED LEARNING AND INSTRUCTOR EXPERIENCES

By:

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A DISSERTATION

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Abstract

The purpose of this study was to determine the benefits, barriers, and professional development practices utilized in higher education settings to implement blended learning classes. Higher education is changing in their delivery models and use of on-line learning to adjust to the present demands. Blended learning (a combination of face-to-face and online learning) has an increasing presence in the learning landscape in higher education. With this approach, there is a need to research approaches, professional development, and potential barriers to blended learning. This quantitative national research explored the potential barriers, benefits, and professional development practices of blended learning as an approach to the teaching and learning in higher education. Participants volunteered to respond anonymously to survey questions about blended learning practices in higher education. The survey was an adaptation of “The Blended Learning Best Practice Survey” (eLearning Guild, 2003) and from Going the Distance: Online Education in the United States (2011) from Babson Research Group. Additional insight and understanding of current and future trends regarding how to surpass these barriers to enhance the overall practices were included in this study. Current findings also identified an inherent need to improve and enhance professional development practices in higher education institutions offering blended learning courses. The researcher recommended that higher education institutions utilize this blended learning research to develop guidelines that are more comprehensive, training, and collaboration to improve these practices and to move beyond the thread.

Keywords: Blended Learning, Higher Education, Professional Development, Strategic Planning
Dedication

This dissertation is dedicated to many people in my life who gave me the support, guidance, and always believed in me. I dedicate this dissertation to my son, Kevin, for always believing in me and giving me the determination to continue. His inspiration and how he showed his pride in having a mother who would “be a doctor” gave me the drive I needed. I was also determined to show him that if you work hard, you can do anything you want and be the best you can be. I hope that through this process, he will be inspired to always “be the best Kastner he can be.” Kevin is my heart and always inspires me to be the best I can be every day.

I also dedicate this dissertation to my husband, Eric, who made ongoing sacrifices and provided me with continued support during this process. I could not have taken this journey without him by my side. He always believes in me and helped me through the challenging times of this process. Our dreams and plans for our life together kept me going. Without his support and love, I would not have been able to take this journey and pursue my doctoral degree.

I would also like to acknowledge my parents. They provided me with a life full of love and opportunities to always learn and grow. Their excitement and support throughout this process was so amazing and really added to my determination to complete my dissertation. I can never thank them enough for the solid foundation the set in my life early on that helped me today.
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Chapter One: Introduction

In higher education, teaching and learning is undergoing a variety of innovations that involve the use of technology through blended learning. This pedagogical approach has been popular and expanded quickly in institutions. However, the establishment of blended learning, which combines face-to-face teaching with online learning, is an area of continued development. While challenging to transition and develop necessary pedagogy to implement these courses, this approach to teaching is developing, and it is transforming instructional platforms in higher education settings.

This approach allows immediate access to learning and information through technology. Using connected mobile tools such as smartphones, tablets, and laptops, the learning process is naturally blended to create the most favorable experiences. Further, blended learning offers:

… a formal education program in which a student learns: at least in part through online learning, with some element of student control over time, place, path, and/or pace; at least in part in a supervised brick-and-mortar location away from home; and the modalities along each student’s learning path within a course or subject are connected to provide an integrated learning experience. (Arney, 2015, p. 1)

By allowing immediate access to information without delayed gratification, utilizing technology to create a community of learning is often complex. This approach to teaching aligns with the fact that most individuals cannot fathom what it was like before smartphones or other smart
devices. In higher education, blended learning allows learners to access information without delay by using technology.

Learners growing up in the technology-infused environment are sometimes referred to as “digital natives” (Prensky, 2001, p. 1). They are defined as a generation of learners who are well skilled in the use of technology but also live with the expectation that technology is available in all aspects of their lives, at any time and anywhere (Prensky, 2001). This generation has called attention to an important and fundamental shift in learners’ expectations. With this new category of learners’ ability, there has been a fundamental shift in expectations and teaching in higher education settings.

This study examines blended learning effectiveness, which has been investigated in previous studies in the context of grades, course evaluations, and student perspectives. There are few studies regarding different aspects from the instructors’ lenses on a national level. As instructional leaders and educators undergo steps to improve pedagogical approaches and instructional practices, this researcher examined instructor beliefs about blended learning and identified barriers to this practice. To gain a deeper understanding, this study examined these factors along with professional development approaches and practices utilized in higher education to build capacity effectively to teach blended learning courses. Instructor perspective data was collected through an adapted version of the e-Learning Guild “The Blended Learning Best Practice Survey” (2003) and from Going the Distance: Online Education in the United States (2011) from Babson Research Group.
Background

Many definitions exist for blended learning. In a transformative approach to education, the hope is that blended learning will utilize technology not just to supplement a way to access information, but rather as a way to transform and improve the entire learning process. Transformation is occurring not only in the approach, but also in the developing needs of the learners. Metros (2011) suggests that the current generation of students will refer to the Web before utilizing a textbook or seeking guidance from an instructor. Learners are accessing immediate information and knowledge on the Internet. Based on the changes in these preferences and overall accessibility of information, institutions are addressing learning in a different way. In the higher education setting, combining traditional teaching with online experiences is an effective approach to “produce effective, efficient, and flexible learning” (Stein & Graham, 2014, p. 12).

In order to understand this transition fully, it is essential to think beyond technology and the learner, but also to the economic state of higher education. To provide further explanation, Allen and Seaman (2017) stated the following:

An understanding of the higher education context is important when examining the patterns and trends for distance education enrollments. After years of growth in the numbers of students enrolling in higher education, the industry is now facing a very different situation: the total number of students enrolled has dropped in each of the past three years. (p. 8).
Higher education is changing in their delivery models and use of online learning to adjust to the present demands and to ensure that there are continued opportunities in higher education for students to have access to learning. The total number of students studying on campus and taking traditional courses (face-to-face format) dropped by almost one million students (931,317) between 2012 and 2015. For-profit institutions experienced the largest declines with a 31.4% decline in enrollment. Two-year public institutions followed with the second largest decline of 10.4% in enrollment (Allen & Seaman, 2017). With the decreasing enrollment rates of traditional learning courses, the most recent growth rates of students taking some form of online learning courses are moving in an upward trend. In 2015, more than 6 million students were taking at least one form of distance course. This resulted in a 3.9% increase over the previous year (Allen & Seaman, 2017). However, these rates are still low when comparing the percentage growth rates, which were seen over a decade ago when higher education began to implement and offer distance learning (Allen & Seaman, 2017).

To compensate for these declines, universities continue to look for innovative ways to increase enrollment while providing rich, valuable learning experiences that are both innovative and accessible. Statistics and growing trends in utilizing blended learning in higher education appear to be consistent with findings from a study by the Pew Research Center for the People & the Press (2012). This study found that 60% of American adults agreed that a change would be as follows, and it was predicted from seven years ago that these changes would occur by the present.

There will be mass adoption of teleconferencing and distance learning to leverage expert
resources. Significant numbers of learning activities will move to individualized, just-in-time learning approaches. There will be a transition to "hybrid" classes that combine online learning components with less-frequent on-campus, in-person class meetings. Most universities' assessment of learning will take into account more individually-oriented outcomes and capacities that are relevant to subject mastery. Requirements for graduation will be significantly shifted to customized outcomes (Anderson, Boyles, & Raines, 2012, p. 4).

This solution to utilize technology to teach blended and online courses is increasing and is transforming teaching platforms in higher education settings. Blended learning offers:

… a formal education program in which a student learns: at least in part through online learning, with some element of student control over time, place, path, and/or pace; at least in part in a supervised brick-and-mortar location away from home; and the modalities along each student’s learning path within a course or subject are connected to provide an integrated learning experience. (Arney, 2015, p. 1)

For decades, academia has been founded under the assumption that the traditional classroom approach is responsible for producing students with a well-balanced knowledge to prepare them for future experiences. However, with the new approaches to utilize technology in higher education, educators and scholars are questioning the existing principles of teaching and learning in higher education. Leaders in higher education are setting the expectation that their institutions meet the connectivity demands of students while ensuring higher expectations for learning
experiences and outcomes. In a time in which technology and unified communication have shaped much of society, the transformation of these teaching practices is critical (Sethy, 2008).

There are many definitions for blended learning. At its simplest, blended learning is the integration of traditional classroom learning experiences with online learning experiences. With the implementation of this teaching approach, there are many possibilities to apply learning and understanding in both environments. The challenge lies in being able to integrate both face-to-face and online learning approaches to enhance classroom instruction, building knowledge bases, and varying expectations of understanding. This approach also requires much thought and planning to ensure the two systems fuse together to implement a cohesive curriculum. At the higher education level, this becomes more complex in consideration of the individual goals, experiences, roles, and backgrounds of the different members of the study body.

There are also different approaches to provide synchronized and asynchronized formats in blended courses, which can help to facilitate a sense of community through collaboration, connectivity, and creativity in the virtual setting. The emphasis of blended courses is placed on producing learning using technology to expand experiences through the recognition of the importance of sense of community. Over two decades ago, Davis and Botkin (1994) made this statement about the changes.

The small rural schoolhouse was supplanted by the big brick schoolhouse. Four decades ago we began to move to another economy but we have yet to develop a new educational paradigm, let alone create the ‘schoolhouse’ of the future, which may be neither school
Moreover, the modern vision of a ‘school house’ is evolving and is not constructed of bricks and mortar; rather, it is a virtual platform and, according to Barr and Tagg (1995), these environments “... bring students to discover and construct knowledge for themselves” (p. 15).

According to Stein and Graham (2014), blended courses increase the opportunity for instructors to combine onsite and online learning to create a new learning environment. Research suggests that blended courses affect productivity, access, and education with positive outcomes (Bawaneh, 2011). By transitioning to online environments, blended courses add the benefits of flexibility and accessibility, provide enhanced learning through synchronized and asynchronized online tools, and can use Internet resources to expand learning beyond the traditional approaches of the classroom. To ensure benefits of blended learning formats, teachers of higher education need to think and plan beyond simply infusing technology into a course. Instead, course designers must develop and transform blended designs through an intentional course redesign process. Instructors must carefully evaluate and redesign courses that previously followed traditional methods.

The statistical trend indicates that blended learning is a growing, permanent trend in higher education settings (Thorne, 2003). This pedagogical approach has the potential to reform practices and learning in higher education. Thorne (2003) believes that blended learning is a natural evolution of the learning agenda and one of the most important advancements of this century. Researchers have predicted that blended learning will be integrated into all instructional
practice, leading to dropping the ‘blended’ prefix and simply referring to it as ‘learning’ (Massy, 2006). Finally, Ross and Gage (2006) claim:

In the long run, almost all courses offered in higher education will be blended.... It is almost a certainty that blended learning will become the new traditional model of course Delivery…. What will differentiate institutions from one another will not be whether they have blended learning but rather how they do the blending and where they fall on the blended learning spectrum. (p. 167)

Statement of Problem

As the blended delivery continues to be implemented as a hallmark approach in higher education, professional development, course designs, shared beliefs, and effective practices need further review. Articulated theories, processes, and principles aligned to blended learning will need further exploration as practices in higher education coursework are implemented. Additionally, technology is developing at a rapid pace. The blended model requires continuous enhancement of teaching through integration of technology. Professors are learning a new way of teaching as they transition from an approach of traditional teaching to blended learning models. The challenge is determining how to take solid teaching of the past and infuse it in a way to bring life to teaching in the online setting. Specifically, blended learning is changing the way students interact and interface with professors and each other (U.S. Department of Education, 2010). As this is a developing approach to teaching higher education classes in the United States, institutions and instructors are investigating ways to enhance practices and implementation of these courses. However, with the blended learning approach, pedagogy, and
innovation, a better understanding of best practices needs to be explored and developed to enhance these practices.

Higher education institutions are striving to implement effective and engaging learning experiences to address the needs of learners who are part of a digital generation (Held, 2009). Blended learning has emerged as a solution to address these needs and has been adopted by various institutions. The blended learning approach offers several enhancements in comparison to traditional models, such as accessibility of information, connectivity, formation of communities of inquiry, and innovative teaching approaches (Held, 2009). However, the challenge is the process of adoption, and implementation of blended learning is still emerging. The approach is still being unpacked, the ideas are still evolving, and technology is still being learned.

In the world of higher education, professors are provided with course standards and objectives. Some classes have set requirements or projects that must be fulfilled to maintain university status of accreditation. Therefore, the transition from traditional to blended is challenging. Taking lessons and materials from the traditional teaching course and welding it into a digital world is not a cookie cutter process. This conversion requires careful planning and consideration. Through the format of blended learning, face-to-face instruction is reduced, and rich, online experiences are incorporated. The challenge is deciding how to incorporate these online opportunities within the coursework to enhance and supplement student learning. With this transition, professors are obligated to redesign the traditional classes. This teaching approach requires a strategic change in teaching style for professors. Understanding time factors
and workload for students has also been difficult to navigate. Professional development for the professors is necessary in successful implementation and change to blended learning format of instruction.

To ensure student success, careful planning, and implementation of technology is essential. According to Stacey and Gerbic (2007), the learning experiences and development of knowledge can be enhanced when resources from the virtual world are integrated with transition forms of teaching, such as in-person lectures or tutorials. However, when the online format is not linked to the face-to-face learning, there is a risk that the learners will not remain engaged or motivated, and the learning experience will not be beneficial (Love & Fry, 2006). Utilizing technology to create this online platform can be challenging. (Stapleton, Wen, Starrett, & Kilburn, 2007). Therefore, the way in which technology is applied in the course modules requires careful planning to ensure that the needs of learners are being met (Deed & Edwards, 2011).

Course developers must recognize the important aspects of online lessons that aim to improve students’ performance. According to Bawaneh (2011), research has revealed that improvements can be achieved if online resources are introduced through a clear overview at the beginning of the course. One way in which this can be done is through a screencast of the introduction to the course to show how the blended format will be delivered. Additionally, since this is a developing instructional design method, institution initiatives for blended courses may involve consultation with instructional designers or educational technologists during the redesign of classes (Stein & Graham, 2014).
With the increasing opportunities and demands of blended classes offered in higher education coursework, purposeful planning of blended classes is essential to meet the students’ needs by identifying the different uses of technology in blended courses. Additional research is needed to explore the ways that blended learning principles align with key principles of andragogy and pedagogy. Studies also focus on how this instructional platform allows personalized learning while developing a sense of community. The principles of adult learning theories can be reviewed in online environments and necessitate further consideration of how to design learning environments that foster a sense of community among learners while encouraging active participation (Dirkx & Smith, 2004).

In the process of developing blended course design, theories aligned to blended learning and adult learning should be considered in determining how to combine the advantages of face-to-face learning environments and computer-mediated learning environments to achieve “the best of both worlds” (Young, 2002, p. A33). Graham (2006) provides an explanation of the essential distinction between the different learning formats. Specifically, traditional face-to-face learning occurs in a “teacher-directed environment with person-to-person interaction in a live, synchronous, high-fidelity environment”, and distance learning systems “emphasize[d] self-paced learning and learning materials interactions that typically occurs in an asynchronous, low-fidelity environment” (Graham, 2006, p. 15).

This transition from traditional to blended learning courses requires a thoughtful integration of online interaction, and face-to-face interaction in a blended course can achieve higher levels of learning (Garrison & Vaughan, 2008). Bliuc, Ellis, Goodyear, and Piggott
(2010) found that learner perceptions of the blended environments influence academic achievement. However, there is little research on how to maximize learning through the design of courses that combine face-to-face interaction and online interaction. Furthermore, additional research on the course design to implement blended learning opportunities and to determine how this transition is occurring in institutions is essential in order to enhance these practices.

While blended instruction has the potential to fundamentally redraw the instructional setting of higher education courses, it remains critically important that blended instructors’ instructional approaches and course designs are the foundation for engaging learners in meaningful and relevant learning experiences. The instructional approach and design that an instructor uses directly affects learning (Anderson, 2009). Understanding how to utilize and infuse the technological tools and synchronized and asynchronous approaches to make learning more meaningful and relevant is critical. Through additional research and development, instructors can gain further understanding about the blended learning paradigm for courses. In a time in history when technology, communication, and inquiry are essential components, educational institutions must be designing and implementing courses that meet these demands and are in alignment with the theoretical framework of andragogy, community of inquiry, conversationalism, and constructivism.

With increasing demand and implementation of blended learning courses, instructors in higher education are required to adopt technology and teach blended learning courses. The specific problem is that instructors in institutions of higher education are required to teach and design blended learning courses without a full understanding of how to infuse technology to
allow for valuable online learning experiences that are embedded in the course design and
enhance course objectives (Donnelly, 2010). Not having a clear understanding of the design and
implementation practices for blended learning courses may lead to developing courses that do
not meet the individual learner needs, meet standards, or properly infuse technology to increase
the sense of community for the learners.

This quantitative research addressed the problem by exploring instructors’ ratings of the
blended learning courses and how instructors receive training to design and implement blended
learning courses in higher education. Further, through this study, barriers to successful
implementation of blended learning courses were identified to provide further understanding of
the planning and implementation process for institutions and instructors.

Purpose of the Study

The purpose of this study was to explore how instructors rate the quality of the
educational experience for students in their blended courses compared to the traditional teaching
(face-to-face) formats as well as to explore what instructors consider barriers to the growth and
effectiveness of blended learning environments in higher education. The study also analyzed
how instructors are acquiring skills and knowledge needed to design and implement blended
learning courses.

This study will contribute to the body of knowledge about teaching blended learning in
higher education courses through an analysis of practices being utilized. The researcher’s goal
was to gain further insight into professor training, ratings, and potential barriers to this practice
and compile a collection of different perspectives about effective practices. Given the nature of
instructors to seek ways to enhance practices continually, this research provided some additional explanations and connections to improve practices. With this knowledge, further development can be made to provide recommendations about the most successful practices and to provide suggestions for future research to enhance current practices further.

**Significance of the Study**

There is emerging information about blended learning courses and, with additional research, instructors can gain further knowledge and insight into these practices. According to Nicol (2006), rapid enhancements and accessibility of information through technologies have made a significant impact on the content and delivery of course curriculum in higher education. Institutions continue to focus on how to enhance the quality of the learning experience by incorporating a greater use of technology in the teaching and learning process. This movement toward blended learning is emerging and is, perhaps, considered one of the most prominent methods of delivery in higher education (Bonk & Graham, 2006). Research supports that the integration of technology in higher education settings aids in the achievement of learning outcomes (Wells, deLange, & Fieger, 2008). The focus of the research by Wells et al. (2008) was to analyze the integration of technology through asynchronous and synchronous learning experiences.

The findings of this study may contribute to increased understanding, implementation, enhanced course design, and improved technology infusion in blended course effectiveness. Additional information was examined to gain greater insight about potential benefits and barriers of blended learning. Through this research, greater understanding can be used to determine how
to implement blended learning courses to increase learner success. Additionally, as blended learning is becoming an increasingly popular approach to teaching in the field of higher education, this study provided additional resources, clarification, and suggestions to improve methodology and approaches to enhance approaches utilized in higher education courses.

As with any instructional approach, the quality of blended learning can vary, but evidence supports the true potential of this approach to teaching and learning in higher education settings (Dzuiban, Moskal, & Hartman, 2005). Blended learning requires an understanding and enhancement of methodology and approaches utilized in face-to-face, computer-mediated, or technology-based learning environments. This research uncovered professor ratings and challenges of blended learning, as well as insight into the professional development practices utilized in higher education. In this present study, an overview of barriers to blended learning and pedagogical practices were researched to obtain a deeper understanding about the factors influencing blended learning and how to overcome current barriers.

**Research Questions**

The study utilized a quantitative approach to explore and evaluate the instructors’ ratings and background experiences and training in blended learning classes in higher education. Additional exploration included identifying potential barriers of blended learning by theme and analyzing how instructors compare traditional teaching to this approach. The conceptual and theoretical framework of the study was derived from gaps in literature about effective practices in a blended learning course. A careful review of exercises, pedagogical approaches, and
strategies was analyzed in an effort to decipher quality, successful blended learning in a higher education environment.

The central focus of this study was on blended learning in higher education. This research was conducted on a national level through an online survey. To analyze the purpose of this quantitative study the following research questions were addressed:

RQ1: How do instructors rate the quality of the educational experience in their blended courses compared to the face-to-face format?

RQ 2: What do instructors consider barriers to the growth and effectiveness of the blended learning environment in higher education?

RQ 3: How are instructors acquiring the knowledge and skills they need to develop and implement blended learning courses to enhance the quality of educational experience?

Assumptions

Since the survey was anonymous, it was assumed that the instructors answered the survey with honesty and self-reflection. To increase this assumption, confidentiality was preserved. Additionally, the participants who volunteered were able to withdraw from the study at any time and with no ramifications. It was also assumed that the instructors were able to identify the strengths and weaknesses of current practices, as well as quality and approaches to gain further knowledge about blended learning. The inclusion criteria of the sample were appropriate and, therefore, assured that the participants have all experienced the phenomenon of the study by teaching or designing a minimum of one blended learning course. It is also assumed, through
their agreement to participate in the survey, that they had an interest in contributing to this body of research on blended learning.

**Limitations and Generalizability**

It was important to take into account the factors that may affect the results of the study. The study was limited to the instructors who teach blended learning courses and were willing to participate. After the survey was distributed, a sampling of the population was expected to respond. The participants’ ability and willingness to respond openly and honestly to the survey questions was also an uncontrolled limitation of the study. One limitation of the survey was that the collection of data might not have been representative of the entire population of instructors teaching blended learning courses. Therefore, another limitation was the result of the generalizability of survey results to various institutions that may not have established a clearly defined blended course program. Instead, these institutions may have combined various course models without a clear vision or model. Instructors may have been reporting on their self-reported experiences and beliefs rather than from an institutionally framed mindset.

Overall, limitations were expected to be inherent in data that was collected as an online survey with a promise of confidentiality. This type of data collection does not allow for personal discussion and clarification.

**Delimitations**

Glatthorn (2005) defined delimitations as the boundaries of the study. The quantitative study was limited to higher education institution instructors. The population, sample size, data
collection method, and data analysis were limited to participants who met the criteria of being an instructor of higher education and taught at least one blended course. The geographic location was uncontrolled, and that data was not collected in this study. The participants included a nationwide sampling of instructors who had taught blended learning courses and were willing to participate.

Data collection occurred once the researcher obtained Institutional Review Board (IRB) approvals. The survey included time parameters that were defined by the researcher. The survey instrument that was used was adopted from the eLearning Guild. This tool was reviewed to align to research questions and incorporated to this study.

**Research Plan**

The study used a quantitative approach to explore how instructors rated the quality of educational experiences in their blended learning courses, what current or potential barriers to the growth and effectiveness of blended learning were, and how instructors acquired the knowledge and skills they needed to allow for successful implementation of this practice. The conceptual and theoretical framework of the study was derived from gaps in literature about blended learning and effective practices, development, and instructor training. A careful review of instructor experiences, ratings, training, and challenges was analyzed in an effort to decipher quality, successful blended learning in a higher education environment. This research was conducted on a national level through an online survey.
Definitions of Key Terms

A few terms require clarification within this study's discussion of the blended course model and its potential effects on the learning experience of higher education students. This information provides clarification regarding the definitions through which this study operated in order to understand the connections between the terms and theories related to the topic under investigation.

Adult learners: Non-traditional learners of at least 18 years of age who choose to engage in higher education and may face competing social demands and obligations, which influence their choice of educational programs (Merriam & Brockett, 2013).

Andragogy: The term andragogy can be supposedly equivalent to the term pedagogy. Andragogy is used synonymously to adult education. Andragogy, also known as adult learning theory, was first proposed by Knowles (1968). Knowles’ theory of andragogy identified five assumptions that teachers should make about adult learners. Self concept was identified because adults are at a mature developmental stage, they have a more secure self-concept than children do. This allows them to take part in directing their own learning. Adults have a vast array of experiences to draw on as they learn, as opposed to children, who are in the process of gaining new experiences. Many adults have reached a point in which they see the value of education and are ready to be serious about and focused on learning. Adults are looking for practical, problem-centered approaches to learning. Many adults return to continuing education for specific practical reasons, such as entering a new field. While many children are driven by
external motivators, such as punishment if they get bad grades or rewards if they get good grades, adults are more internally motivated (Knowles, 1984).

Asynchronous learning: An approach to teaching through online learning resources to exchange information. This sharing of information occurs outside the constraints of time and place among a group of people (Bonk & Graham, 2006).

Blended Learning: Formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, pace, and/or space, and at least in part at a supervised brick-and-mortar location away from home. Additionally, blended learning is called different terms, such as distributed learning, open and flexible learning, and hybrid learning (Kim, 2013).

Blended Learning Environments: Learning environments that comprise a mixture of face-to-face instruction and computer-mediated instruction (Bonk & Graham, 2006).

Community of Inquiry: (Abbreviated as CoI) A concept first introduced by early pragmatist philosophers C. S. Peirce and John Dewey (as cited in Garrison, 2000) regarding the nature of knowledge formation and the process of scientific inquiry.

Constructivist Theory: Student-centered approach that emphasizes the importance of peer-to-peer interactions and a sense of community. This approach combines self-study with asynchronous interactions to promote learning, and it can be used to facilitate learning in traditional on-campus education, distance education, and continuing education (Oliver & Trigwell, 2005).
Distance Learning: Education of students who may not always be physically present at a school (Osgathorpe & Graham, 2003).

Face-to-face Sessions: Brick-and-mortar locations that take the students away from their homes and bring them together in a predetermined location, typically on a university campus. The face-to-face classroom environment allows for a real-time meeting of all the students at once with the instructor (Osgathorpe & Graham, 2003).

Facilitated learning: A process in which the students are encouraged to take more control of their learning process. The instructor’s role becomes that of a facilitator and organizer by providing resources and support to learners (Garrison & Vaughan, 2008).

Flipped Classroom: Instructional approach in which computer-assisted teaching is integrated with classroom instruction. The flipped classroom is another form of blended learning. In this model, the students are first exposed to introductory lesson outside of class, usually in the form of an online presentation. Class time is utilized for teachers to engage actively with learners to reflect on the content learned (Garrison & Kanuka, 2004).

Interaction and Learning: “Reciprocal events that require at least two objects and two actions” (Wagner, 2006, p. 45).

Intrinsic Motivation: Performing an action or behavior because there is enjoyment.

Online instruction: Internet-delivered instruction using text, graphics, video, and audio methods to deliver course content to individual students in various locations, including their homes.

Synchronous learning: Learning event in which a group of students is engaged in learning at the same time in person or online (Caulfield, 2011).
Traditional Course: A course or class that does not include an online component. Class meets at a specific time at a certain location (Stein & Graham, 2014).

Universal Design of Learning: A scientifically designed framework providing guided educational practice that allows for flexibility in the way information is presented and the way in which students respond and engage. Universal Design of Learning also reduces barriers in instruction by providing appropriate accommodations and supports. This framework maintains a high achievement expectations for all students while meeting their individual needs (Rose & Meyer, 2006).

**Theoretical Framework**

The researcher framed this study from the theories of andragogy, constructivism, conversationalism, and community of inquiry, which are explored further in relation to blended learning practices. These different theories provide a basis for understanding blended learning and overall practices in higher education. There are many schools of thoughts on the learning process through different applications of pedagogy and learning theories. However, there is not one exclusive theory used to apply to designing and implementing blended learning practices. Therefore, different combinations of theories can be employed to develop blended learning courses. Existing learning theories, however, were developed before online and blended learning was being utilized as it is today.

Consistent with the belief that there is not just one single learning theory as a framework for instruction in general, the same is true for blended learning. Several theories have evolved,
but most of these theories are derived from existing learning theories. Blended learning is the overlap and integration of several theories that create the framework for this teaching and learning format. Therefore, a number of major theories related to technology and associated with learning can provide this foundational understanding about blended learning. As blended learning continues to evolve as a form of instruction in higher education, the learning theories are integrated.

**Summary**

This study contributes to the body of knowledge about blended learning in higher education courses. The researcher’s goal was to gain further insight into how professors rate the quality of the educational experience and learning in their blended courses compared to the face-to-face format. A study of potential barriers in the design and implementation process was also analyzed through the study. Research included an analysis of how instructors were acquiring the knowledge and skills they need to develop and implement blended learning courses to enhance the quality of educational experience. With this knowledge, further development can be made to provide recommendations about the most beneficial formats to utilize and to create references and guidelines for professors about specific approaches that may further enhance current practices.

Chapter One introduced the topic, identification of the purpose, and problem to explain the need for this study. The chapter included background information, the problem statement, purpose of the study, the significance of this research, areas questioned, limitations, and delimitations of the study, and definitions of key terms used throughout the study. This study
sought to answer the following questions: How do instructors rate the quality of the educational experience in their blended courses compared to the face-to-face format? What do instructors consider barriers to the growth and effectiveness of the blended learning environment in higher education? How are instructors acquiring the knowledge and skills they need to develop and implement blended learning courses?

Chapter Two addresses the focus topic of the study, blended learning in higher education, and the importance of understanding the transition, implementation, and technological components of this pedagogy. The literature review highlights research findings on the key components of blended learning, different approaches, and pedagogy in this practice, the transformation from traditional to blended learning models, technological influences, and tools, and the success of these practices in enhancing student learning. Chapter Two includes a discussion on blended learning, constructivist, and andragogy learning theories, pedagogical perspectives, and transformation practices for blended learning instructors.
Chapter Two: Review of Literature

Online learning is one of the fastest growing trends in educational uses of technology (Stein & Graham, 2014). Over the past decade, technology has been at the center of educational planning and is utilized quite frequently in education. Due to this shift, technology has allowed higher education institutions to offer blended learning opportunities. For the purpose of this study, blended learning is defined as a combination of face-to-face instruction with online learning that utilizes different instructional modalities to enhance the engagement and learning for the learners. Blended learning is becoming an expanded and favored method of delivering content in higher education settings. This is due to the scheduling flexibility and the ability to meet the needs of a greater number of students (Ho, Lu, & Thurmaier, 2006).

An examination of the literature on blended learning in higher education revealed advantages, barriers, and other considerations for students and faculty. These considerations will be discussed throughout the literature review to gain insight into current practices, research, and gaps in what is known about blended learning practices. In working toward a deeper understanding of blended learning, scholars and practitioners are questioning how to achieve the “thoughtful fusion of face-to-face and online learning experiences” (Garrison & Vaughan, 2008, p. 5) in order to integrate “the best of both worlds” (Young, 2002, p. A33).

This study responds to this need by identifying and describing how instructors rate blended learning and what these instructors view as common advantages and disadvantages. Additionally, designing and implementing blended learning courses requires additional
knowledge and skill sets to enhance current practices. This study reviews common practices of professional development on how instructors are acquiring the skills needed to develop and implement blended courses.

In support of this study of how instructors rate blended learning, acquire knowledge to design and implement these courses, and identify different advantages and disadvantages of this practice in higher education, this literature review includes a synthesis of the different definitions and components of blended learning. Review of the theoretical framework of blended learning is discussed through an overview of andragogy, constructivism, conversational theory, and community of inquiry. Different barriers and considered benefits are discussed through a review of current research and practices. Additionally, studies and research about the transition process in planning and course design from the traditional teaching to blended instruction are discussed.

Finally, as this is a transition to a different practice of course design and implementation, professional development practices are also reviewed. Through this literature review, the reader will gain a greater understanding about blended learning and review current research about the design, theories, implementation, potential barriers, and overall benefits of this type of learning environment.

**Definition of Blended Learning**

A blended learning approach is being utilized in higher education courses that include a combination of face-to-face sessions and learning and communication via technology. Blended learning definitions vary depending on the different views (Whitlock & Jeffs, 2003), but there is consistency in identifying the common elements, which include a combination of face-to-face
lectures and the use of technology and the Internet (Kerres & Witt, 2003). According to Stacey and Gerbic (2007), this combination of teaching approaches, which includes a variety of online resources in addition to face-to-face contact, has been referred to as a blended learning approach.

Though there is no single definition of ‘blended’, these courses are most easily understood as a combination of onsite or face-to-face learning with online experiences, which allows for effective, accessible, and flexible learning (Stein & Graham, 2014). Blending a course requires more than replicating classroom teaching activities in online versions of those same lessons. Blending a course should be thought of as transformative. The result should be more advanced and meaningful learning than those achieved via previous modes of delivery. Blended learning is the convergence of online and face-to-face education; this approach combines the elements of both learning formats and is likely to emerge as the leading model of the future of online education (NACOL, 2008).

The distinction between hybrid and blended courses is not clearly defined in research and literature. Often, references consider these terms synonymous. However, according to Allen, Seaman, and Garrett (2007), the term hybrid is used to imply that multiple approaches are utilized to offer instruction. Further, hybrid implies that one mode (face-to-face or online) is being utilized, while the other approach is not in use in the course. Contrary to that assumption, a blended approach suggests that these methods are intertwined and the transition between the face-to-face and online portions of learning are minimal (Allen, Seaman, & Garrett, 2007). Based on these deductions, blended learning designs are beneficial beyond the benefits of convenience, accessibility, and efficiency. Blended learning is the careful integration of
traditional teaching with online learning, which is aligned to the learning tasks (Garrison & Vaughan, 2005).

The potential of blended learning is robust. Research by Means et al. (2010) suggests that, when facilitated effectively, online education cannot only match, but also surpass, traditional face-to-face learning. Universities are continuing to adopt blended learning through different course offerings (Garrison & Vaughan, 2007). The popularity and increase in blended learning practices have led scholars to predict that this approach will become the “new traditional model” (Ross & Gage, 2006, p. 167) or “new normal” (Ross & Gage, 2006, p. 207) in higher education course delivery (Norberg, Dziuban, & Moskal, 2011). Blended learning is growing because this approach has the potential to engage students and produce excellent learning outcomes (Watson, 2008).

The blended learning environment is a result of the convergence of “two archetypal learning environments” (Bonk & Graham, 2006, p. 5). In the past, these environments were separated and functioned independently from each other based on the technology format and underlying needs of participants. Traditional learning focuses on teacher-directed instruction in a live synchronized environment. The online learning environment is based on self-paced learning and primarily asynchronized learning experiences (Bonk & Graham, 2006). With the infusion of these two learning environments, blended learning has evolved.

Both of these platforms follow four essential dimensions of interactions. The four dimensions of interaction in face-to-face (live), virtual (online), and distributed (mixed/blended) learning environments is depicted in Table 1: Four Dimensions of Interaction in Face to Face
and Distributed Learning Experiences. These four essential dimensions to interactions occur in blended learning environments (space, time, fidelity, and humanness).

Table 1
Four Dimensions of Interaction in Face to Face and Distributed Learning Environments

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Live</th>
<th>Mixed</th>
<th>Virtual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space</td>
<td>Physical/face to face</td>
<td>Mixed reality</td>
<td>Virtual distributed</td>
</tr>
<tr>
<td>Time</td>
<td>Very short lag time</td>
<td>---</td>
<td>Long lag time</td>
</tr>
<tr>
<td>Fidelity</td>
<td>Rich all senses</td>
<td>Audio or visual</td>
<td>Text only</td>
</tr>
<tr>
<td>Humanness</td>
<td>No machine</td>
<td>---</td>
<td>High machine</td>
</tr>
</tbody>
</table>


In consideration of these four dimensions, blended learning environments are increasingly replacing instruction that was historically only provided through traditional face-to-face environments. Bonk and Graham (2006) discussed the time and fidelity dimensions, which have resulted in an increase in communication through the use of technology; this has allowed for “synchronous distributed interactions that occur in real time with close to the same levels of fidelity as in the face-to-face environment” (p. 6). This interaction and communication is categorized under the humanness dimension. In this dimension, there is an increased focus on encouraging interactions through computer-mediated collaboration, instant messaging, and online discussions. In the space dimension, interactions can occur simultaneously in both environments (Bonk & Graham, 2006).

In support of these dimensions, Bonk and Graham (2006) presented a working definition for blended learning systems. “Blended Learning is the combination of instruction from two
historically separate models of teaching and learning: traditional face-to-face learning systems and distributed learning systems. It also emphasizes the central role of computer-based technologies in blended learning” (p. 5). The simple form of blended learning incorporates the use of technology to facilitate learning activities and provides added accessibility and flexibility, which allows participation in the course when most convenient. This, in turn, opens doors for learners who may not have been able to take courses to advance their careers or meet their goals through traditional classroom courses with a balance between online and in person learning.

In the review of literature, there is a frequent interest by researchers to gain further knowledge about what is being blended. There are a wide variety of responses and definitions in literature of blended learning. According to Driscoll (2002), most of the definitions include similar themes. Graham, Allen, and Ure (2003) documented the most common definitions as a combination of instructional modalities (through different platforms and media), a combination of different instructional methods, and a combination of online and traditional instruction (face-to-face instruction). Although these themes are presented in the context of defining blended learning, there still are questions and confusions about the methodology being applied to teach and apply blended learning courses. This debate often focuses on the influences of media versus method on learning and pedagogy (Kozma, 1994). This debate may be based on the assumption that it would be difficult to find a teaching approach that did not combine different methods or modalities to enhance learning.

Definitions of blended learning continue to emerge with research, increased awareness, and development of blended learning. According to Bonk and Graham (2006), blended learning
is defined as the “combination of instruction from two historically separate models of teaching and learning: traditional face-to-face learning systems and distributed learning systems. It also emphasizes the central role of computer-based technologies in blended learning” (Bonk and Graham, 2006, p. 6). Another explanation of blended learning is provided by the U.S. Department of Education Office of Technology (n.d.). This definition states:

In a blended learning environment, learning occurs online and in person, augmenting and supporting teacher practice. This approach often allows students to have some control over time, place, path, or pace of learning. In many blended learning models, students spend some of their face-to-face time with the teacher in a large group, some face-to-face time with a teacher or tutor in a small group, and some time learning with and from peers. Blended learning often benefits from a reconfiguration of the physical learning space to facilitate learning activities, providing a variety of technology-enabled learning zones optimized for collaboration, informal learning, and individual-focused study. (para. 5)

Garrison and Vaughan (2008) offered a more comprehensive definition of blended learning that considered the complexity of this teaching format and focused on communication.

According to the definition:

Blended learning is the thoughtful fusion of face-to-face oral communication and online learning experiences. The basic principle is that face-to-face oral communication and online written communication are optimally integrated such that the strengths of each are blended into a unique learning experience congruent with the context and intended
The definitions process is complex, as there are different levels of understanding and opinions about this approach. As these definitions develop, educators may disagree with the different characteristics; however, the benefits of blended learning are clear. These definitions focus on the format of the blend, the role of the learner, infusion of technology to support face-to-face instruction, and the autonomy expectations. Basic principles of pedagogy and learning are infused in these definitions to align with educational standards.

Another consideration to understanding blended learning is that there is a continuum of this learning format, as shown in Table 2: Continuum of Blended Learning. This table represents a classification system that is based on the level of online resources used.

<table>
<thead>
<tr>
<th>Basic IT Usage</th>
<th>E-enhanced</th>
<th>E-focused</th>
<th>E-intensive</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerPoint Presentations</td>
<td>Access to online resources</td>
<td>Discussion boards Online Assessments Interactive Learning Materials</td>
<td>Whole module delivered and moderated online</td>
</tr>
<tr>
<td>Lecture Notes</td>
<td>Student Notes</td>
<td>Communication</td>
<td></td>
</tr>
</tbody>
</table>


This continuum begins at the most basic level of information and communication technology used to support face-to-face teaching through intensive use of technology with minimal face-to-face instruction (Bonk & Graham, 2006). Clarification of the continuum is necessary, as there are variations in the definition of blended learning. To understand and define learning in a
blended environment, it is essential to have an understanding of several underlying and interrelated theories that provide the foundation for this approach to course design.

**Theoretical Framework of Blended Learning**

As discussed in the literature, blended learning can be identified as an educational format of instruction in which different types of learning opportunities are available to the learner through a combination of traditional and online learning. This approach has the potential to optimize learning outcomes. In education, there are many schools of thought on the learning process through different applications of pedagogy and learning theories. However, no one exclusive theory applies to designing and implementing blended learning practices. Therefore, different combinations of theories can be employed to develop blended learning courses. Existing learning theories, however, were developed before online and blended learning was being utilized as it is today. This literature will review different theories that aid in the design and practices of blended learning. The theory of andragogy, constructivism, conversationalism, and community of inquiry will be further explored in relation to blended learning practices. All of these theories center around the adult learner. The foundation is to build a community of learners, enhance communication, and guide learning to a deeper level of understanding and knowledge.

**Theory of Andragogy**

The beginnings of adult learning theories can be traced to research that analyzed group dynamics approaches in the late 1940s and 1950s. According to theory from this time, the adult learner possessed a set of motivational and attentional skills to resist learning and changing
unless the climate was considered safe (Knowles, 1980). This definition evolved throughout the 1970s. According to this definition formed by Knowles (1980), andragogy is described as the art and science of adult learning. Simply, andragogy refers to any form of adult learning (Kearsley, 2010). Andragogy can be referred to as equivalent to the term pedagogy, which is widely used in education. Andragogy in Greek means “man-leading” in comparison to pedagogy, which in Greek means “child-leading” (Pappas, 2013, para. 2).

Burge (1988) proposed that the implications of andragogy to distance education be examined to gain further insight into improved practices and implementation. The theoretical concept of andragogy focuses on characteristics specific to adult learners. This theory focuses on the distinct traits of adult learning from the various approaches to understanding of generalized learning theory (Knowles, 1980). Another distinction of adult learning is that the teaching approach recognizes intrinsic motivation and independent learning and does not focus on passive learning, in which the students are sitting back and receiving information (Knowles, 1980). In addition to independent learning, also referred to as self-directed learning by Knowles (1975), some adults may prefer collaborative learning activities. These collaborative learning activities may be characterized by a focus on technology, instructor provided information, or flexible learning. Table 3: Various Learning Preferences and Definitions organizes these various learning preferences types with definitions (Matheos, Daniel, & McCalla, 2012).

Table 3: Various Learning Preferences and Definitions

<table>
<thead>
<tr>
<th>Preference Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Style</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Independent/Self-directed</td>
<td>The learner is willing to learn with and without the help of others.</td>
</tr>
<tr>
<td>Collaborative</td>
<td>The learner prefers to learn with two or more students.</td>
</tr>
<tr>
<td>Technology-centered</td>
<td>The learner depends on technology to enhance the learning process.</td>
</tr>
<tr>
<td>Instructor-centered</td>
<td>The learner depends on an instructor to determine and direct learning needs.</td>
</tr>
<tr>
<td>Flexible</td>
<td>The learner needs to be able to make choices that can allow him/her to meet their own unique needs.</td>
</tr>
</tbody>
</table>


These preferences provide insight into how individual learners prefer to gain knowledge through instruction. Adult learners are most often aware of their preferences, which may help increase their successful outcomes during the learning process. All of these preferences are infused in blended learning courses. In blended learning environments, the learners’ preferences of learning and technology are essential. Singh (2003) emphasizes the significance of varying learning requirements and preferences for individual learners. To meet these differing needs, instructors need to design and implement instruction that uses a blend of various technology and learning approaches that enhance the content, support the learners, and deliver necessary instructional knowledge (Singh, 2003).
Personal control, independent, self-directed learning, and the responsibility for learning are at the forefront of andragogy. This theory is based on the individual motivation and learner initiative to drive their own learning (Wlodkowski, 2008). Based on andragogy, the successful student sustains motivation through a personal responsibility (Kasworm, 2003), which aligns with the concept of self-directed learning. Initially explored by Knowles (1975), self-directed learning is defined below.

In its broadest meaning, self-directed learning describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (Knowles, 1975, p. 18)

A self-directed learner is willing to learn with and without guidance or assistance from others. This type of learning is able to focus on the learning process and how to gain further knowledge and skills to continue growth.

Further, according to Knowles (1980), andragogical principles emphasize a teaching style that encourages student reflection, implementation of lessons learned, expanding knowledge, and connecting to expand previous learning. Andragogy takes into account the learner’s maturity and individual motivation to learn from the experience provided. This theory is in alignment with the guiding principles and framework of blended learning. Through facilitated learning in blended learning courses, the instructor provides resources and direction. The students are facilitated to
guide learning (Merriam et al., 2007). The theory of andragogy is relevant to be applied and considered in developing and implementing blended courses in innovative educational formats that consider the principles of andragogy, enhance learning, and expand the experiences for the learners.

As self-directed learning is a key component in the concept of andragogy (Merriam et al., 2007), andragogy provides insight into the design of blended learning courses. Adult learners demonstrate different needs from younger learners. Self-directed learning emphasizes the adult learners’ intrinsic motivation and desire to expand the learning experiences beyond the classroom. By connecting new learning to past experiences, the student can develop deeper and more robust skills. Allen and Seaman (2004) revealed that intrinsic motivation was increased when learning was relevant to their goals, interests, or experiences. Knowles (1975) described self-directed learning as "a process in which individuals take the initiative without the help of others, in diagnosing their learning needs, formulating goals, identifying human and material resources, and evaluating learning outcomes" (p. 18).

To guide in the application of andragogical principles, Caulfield (2011) developed a list of teaching tools and techniques that directly represent the basic application of adult learning. This is depicted in Table: Teaching Techniques Recommended by Andragogy to Increase Adult Learning.

Table 4

Teaching Techniques Recommended by Andragogy to Increase Adult Learning
**Principles**

- Learners need to know why information is important to learn; educators need to make this evident.
- Learning is the primary responsibility of the learner.
- Drawing on the individual’s personal experience and relating that experience to information from the discipline is the most frequently used method of teaching.
- Applying scaffolding techniques, such as group interaction, simulation, and case analysis, is frequently used to enhance each individual’s readiness to learn.
- Information is best learned when applied to real-life situations that are relevant to the learner.
- Intrinsic motivators (self-esteem, need to achieve) are more important than extrinsic motivators.

**Teaching tools and interactions**

- The instructor incorporates current material beyond the textbook.
- Some content, scheduling, and accountability measures remain flexible.
- Students give original information to the class by applying and relating to course principles.
- The student is given individualized, graded, and reflective assignments.
- The student has opportunities to express personal opinions and share personal experiences in meaningful collaborative group discussions.
- Students help set course expectations, objectives, and rewards.

*Note. Adapted from “How to design and teach a hybrid course: Achieving student-centered learning through blended classroom, online, and experiential activities”, by J. Caulfield, 2011, p. 88. Copyright 2011 by Stylus Publishing Company.*

With andragogy as the guiding principle for blended course design, Caulfield (2011) suggests these approaches be utilized in designing courses to incorporate the influences of the past learning experiences of the adults, to create a connection between the course learning goals and the learners’ individual needs, and to design various learning activities that encourage autonomous...
learning. Through the identification of the key elements, teaching tools, and interactions that can be applied in a blended learning course design, practices can be enhanced.

**Constructivist Theory and Conversation Theory**

One of the harshest criticisms of blended learning is that it focuses on the instructor to create and provide the learning information, rather than allowing the student to guide their own learning (Oliver & Trigwell, 2005). In order to overcome this negative implication in this learning format, Constructivism and the Conversational Theory should be applied in blended learning environments to increase students’ connectedness to the learning process, collaboration with peers and instructor, and their overall contribution in knowledge building based on their personal experiences. This will effectively result in increased learning outcomes (Oliver & Trigwell, 2005). Blended learning should focus on student-centered learning by applying Constructivism and the Conversational Theory in the design and implementation of learning activities.

**Constructivist Theory.** Constructivist theory stems from the early concepts of Dewey, Piaget, and Vygotsky. All of these theorists concluded through a constructivist approach that learners bring prior knowledge to different learning experiences, and this influences their response to new information (Hyslop-Margison & Strobel, 2008). Constructivism is considered effective in blended model format because it helps prepare students for problem solving in complex environments (Hyslop-Margison & Strobel, 2008). Further, based on these assumptions, the students engage more in building and creating knowledge, both individually and collaboratively, based on their personal experiences and understanding of information. As a
result, students will interpret taught information differently based on their prior experiences and their own meaning of that knowledge. Having an understanding of the foundational concept of the constructivist theory is beneficial in blended learning. Specifically relevant to this theory, the instructor will need to have an understanding and perspective on how the learners are interpreting and connecting to the information being taught in the class to help guide the learning process (Atherton, 2009).

In the constructivist approach, blended learning courses infuse different discussion forums (synchronous and asynchronous), email between students, and student collaboration on group projects in the online portion of the course (Mishra, 2002). With these principles in mind, the blended learning course can be designed to increase student participation in relevant, interactive learning activities and projects that are founded in collaborative practices (Bonk & Graham, 2006). Through a constructivist lens, the learner expectations are developed to allow the students to be self-directed and maintain control over their experience. Bonk and Graham (2006) found that few instructors actually designed blended learning courses according to these principles, which is contrary to students’ desire to have these activities in the online learning environment. Through this research, Bonk and Graham (2006) revealed that there was a discrepancy between student preferences and the experience of blended learning.

Constructivist approaches have the potential to improve learning quality and outcomes during blended learning courses. The blended learning environment should be planned and learning experiences executed, while guiding the learners through the process of collaboration and planned interaction through the students (Alfonso, Lopez, Manrique, & Vines, 2005).
Collaboration in a blended course may be planned through synchronized discussions. “The effectiveness of collaboration in a live or synchronous learning environment depends on dynamic and active communication between students that fosters knowledge construction and sharing” (Alfonso et al., 2005, p. 231). Synchronous discussions are essential for students who might not participate actively and collaboratively within the traditional classroom. Additionally, synchronous experiences foster instantaneous and efficient exchanges of ideas (Bremer, 1997). In contrast, in a traditional classroom not all students may be able to participate or guide conversation due to their own hesitation or time constraints.

Designing and implementing adjustable, stimulating, and interactive learning models, and utilizing technology in an innovative way in blended learning courses continues to be researched. The Constructivist theory provides a framework in guiding course developers and instructors to implement synchronized learning opportunities for learners to expand their collaboration, communication, and breadth of knowledge. The instructor in a blended learning course, under the principles of the Constructivist theory, is focused on understanding how students interpret knowledge and “to guide and help them to refine their understanding and interpretations to correct any misconception arises between students at an early stage and improve learned knowledge quality” (Al-Huneidi & Schreurs, 2012, para. 6).

Koohang (2009) developed a model based on these theories in the e-learning environments. This model includes three categories of elements based on Constructivism and the Conversation Theory, including the design of the learning activities, the learning assessment, and the role of the instructor (Koohang, 2009). Specifically, the design of learning activities
includes different forms of collaboration, application to real world experiences, reflection and perspective sharing, and social negotiation. The learning assessment component includes assessment by the instructor, collaboration between students in the assessment process, and self-reflection assessments. The instructor takes on different roles, such as a coach and mentor. The instructor also provides continual feedback and continually gauges student learning (Koohang, 2009). Blended Learning courses should center on student-centered learning by applying Conversation and Constructivism theories in designing and implementing learning activities.

Often misunderstood, the “Blended Learning environment has the characteristics to adapt, support, and facilitate applying Constructivism and Conversation theories in learning process” (Al-Huneidi & Schreurs, 2002, p.2). Instructors of blended learning courses can apply these theories to increase understanding about how students interpret knowledge. Their roles are to provide guidance and support to refine learning and clarify any misconceptions students may have during the learning process. In the Blended Learning environment, teachers utilize a variety of technology tools such as synchronous and asynchronous learning technologies to facilitate and encourage collaboration, interaction, communication, and knowledge construction and sharing among the students.

Constructivism is considered effective as it prepares students for complex problem solving (Schumann, 1996). Based on the principles of Constructivism theory, students are actively engaged in creating knowledge both individually and socially in groups, based on their experiences and interests (Al-Huneidi & Schreurs, 2012). A Constructivism Based Blended
Learning model was displayed by Al-Huneidi and Schreurs (2012), as displayed in the figure "Adapting Conversation and Constructivism Theory in Blended Learning." This model includes three categories for elements of Constructivism Blended learning courses. These elements include the features to modify, assist, and facilitate the applications of Constructivism theory in the course design. This blended format sets the foundation for open and improved communication, knowledge construction process, and collaboration.

**Figure 1**: Adapting Conversation and Constructivism Theories in Blended Learning Environment.


According to Harman and Koohang (2005), constructivism learning theory focuses on knowledge development and application based on learner’s previous experience. This theory is
an appropriate fit for blended learning because it ensures learning among learners. Further, Woolfolk (1993) states the following:

The key idea (of this type of learning) is that students actively construct their own knowledge: the mind of the student mediates input from the outside world to determine what the student will learn. Learning is active mental work, not passive reception of teaching. (p. 485)

In order to plan and design instruction aligned to these principles, different tools can be utilized. *Table 5: Constructivism Aligned Learning Activities and Technological Tools* illustrates the various characteristics of Constructivism and aligned learning activities and technological tools used to apply Constructivism characteristics in learning process in a blended learning approach.

<table>
<thead>
<tr>
<th>Constructivism Characteristics</th>
<th>Learning Activities</th>
<th>Technological Supports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personalization/Customization</td>
<td>Readings that are on a given electronically and discussed between the students and instructors</td>
<td>Online chat system</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internet Access</td>
</tr>
<tr>
<td>Responsibility</td>
<td>Interviews and then share interview outcome with class.</td>
<td>Online whiteboard system to present the PowerPoint</td>
</tr>
<tr>
<td></td>
<td>Independent reading followed by a whole class discussion on the reading topic</td>
<td>Online discussion forum</td>
</tr>
<tr>
<td></td>
<td>Participate in Online conferences and then report on via Online discussion</td>
<td>Online conference system</td>
</tr>
</tbody>
</table>
Engage in question answer type conversation

Critical Thinking

- Case Studies with a solution and collaboration to discuss the study
- Email system
- Threaded discussion tools
- Presentation tools

Self and Collaborative Assessment

- Group preparation of a presentation about a selected topic, followed by exchanging the reports among students to assess each other’s reports and then send them to teacher
- Email system
- Threaded discussion
- Screencast/recording software
- Presentation tools


Similar to a face-to-face format, in a blended learning environment, the students should have the opportunity to interact with each other and with their teacher. Additionally, learning processes should be guided and assessed throughout the course. Since some of this engagement and the learning process is provided through an online format, instructors need to reformat the way they are presenting information. The instructor should assess learning and application of knowledge to ensure that there are no misconceptions or confusion. In addition to the Constructivist theory, the Conversation theory is supportive of blended learning, and these theories interact and support the conceptual framework of blended learning.

Conversation Theory
Conversation Theory is generally a concept of interaction between the teacher and the learner where “…one participant (the teacher) wishes to expound a body of knowledge to a second participant (the learner)” (Scott, 2001, p. 3). This theory is founded on the belief that the interaction and collaboration between students and teachers play an essential role in the learning process. Based on this theory, an individual agrees to participate in the conversation in order to learn about something (Scott, 2001). The two participants in a conversation represent the cognitive structures of knowledge, and each has a different perspective and a role to play. The Conversation Theory, which was initially used to show how two systems gain knowledge by continuously interacting with users or other machines was applied to explain the role of conversation in learning (Pask, 1975). Learning occurs as a result of conversations which focus on a subject matter, and this conversation includes and depends on “mutual comprehension, agreements and agreements to disagree” (www.communicationtheory.org, n.d., para 3).

Pask (1976) believed that all teaching and learning interactions, whether conducted through technology or in traditional classroom settings, should be seen as a conversation. Further, the Conversational Theory was based on the belief that “the fundamental unit for investigating complex human learning is a conversation involving communication between two participants in the learning process, who commonly occupy the roles of learner and teacher” (Pask, 1976, p. 12). The success of this process relied on the rigid path of how knowledge was to be shared and learned. The instructor would prepare the definition and scope of the subject matter in advance. According to Ravenscroft (2003), this resulted in “limited opportunities for more creative ideas and knowledge construction” (p. 6).
Pask (1975) and Scott (2001) developed and later adapted the ‘Skeleton of Conversation’, which is depicted in Figure: Skeleton of Conversation. This representation maps out the basics of the interaction between a teacher and the learner(s). There is a flow of conversation in the form of questions and answers. According to Scott (2001), this verbal communication happens on two levels: the ‘Why?’ and the ‘How?’ The comprehension aspects of learning (why) sets out a context in which the learning (how) becomes more meaningful in the process. The learning process is focused on the understanding of the topic itself through guided discussions, feedback, and responses that occur in the conversation process (Scott, 2001).

*Figure 2*

*Skeleton of Conversation.*

*Figure 2. This representation maps out the basics of the interaction between a teacher and the learner(s). Adapted from “Gordon Pask's conversation theory: A domain independent constructivist model of human knowing”, by B. Scott, 2001. *Foundations of Science, 6*(4), p. 350. Copyright 2001 by Springer.*
The principles of this theory focus on continuous and sustainable interaction and conversation between students and teachers as depicted in the Figure 2 *Skeleton of Conversation* (Scott, 2001). Based on this foundation, the Conversation Theory of learning fits into the constructivist framework, since the emphasis of both theories is on the student being the center of learning and knowledge. Some of the underlying assumptions of Conversation Theory include that human beings are learning systems, motivation should focus on what is being learned and how this learning can be applied, and mastery can be demonstrated by teaching back something (Scott, 2001). The particular conceptions and misconceptions about learning and questions about learning can be broadly classified as ‘knowing why’ and ‘knowing how’ (Scott, 2001, p. 4).

Conversational Framework is widely used in educational institutions to analyze the value and implementation of technology in learning. Educational institutions have applied a framework for designing blended learning and the educational tools required to implement an effective learning model. According to Laurillard (2002), higher education is much about acquiring diverse ways to see the world through different lenses. Further, Laurillard (2002) claims that there are four main aspects of the teaching-learning process and that different educational media can be analyzed (and used) in terms of these dimensions. In the Conversational Framework, these dimensions of the learning process include the conception of the teacher and student, the instructors constructed environment, and the student’s actions.
Building on the Socratic tradition of questioning, the learning theories of Vygotsky and Piaget, and the conversation theory, Laurillard (2002) maintains that all complex learning involves:

A continuing iterative dialogue between teacher and student, which reveals the participants’ conceptions and the variations between them… There is no escape from the need for dialogue, no room for mere telling, nor for practice without description, nor for experimentation without reflection, nor for student action without feedback. (Laurillard, 2002, p. 55)

The nature of blended learning is centered on the subject matter, the learners, and the instructor, which are pivotal in the Conversation Theory. Additionally, the focus is on creating a connection and facilitating meaningful interactions. This framework was designed to explain the learning process as the student and instructor engage in discussion (Laurillard, 2002). The challenge lies in how this framework transfers to online learning or blended learning models using technology to support this process. Instructors of blended learning courses need to be effective communicators during the learning process. The challenge in communicating online is determining how to share information successfully with the learners, especially since body language and other non-verbal indicators are not there to reveal behavioral clues (Pappas, 2016).

In a blended learning environment, it is evident that these relationships may become more complex than the infusion of technology into the blended classroom results in a change to the educational landscape and how learners communicate with each other (Muller, Lee & Sharma, 2008). According to Hillis (2008), with blended learning the integration of content and technology creates a path for the teacher to establish an effective method to transfer knowledge
and information to students. This also allows for increased flexibility and diverse communication pathways (Hillis, 2008). According to Laurillard (1993), technology with the Web is a very well designed platform for learning and can be utilized to enhance instruction. Keengwe, Onchwari, and Wachira (2008) supported these claims since this format allows for increased collaboration, scaffolded instruction, deeper reflection, and allows students to develop deeper knowledge, which will enable them to be more involved and responsible for their learning.

**Community of Inquiry**

Constructivism and conversationalism are the underlying foundational perspectives of the Community of Inquiry framework perspective of teaching and learning (Garrison & Anderson, 2003). The Community of Inquiry model developed by Garrison et al. (2000) refers to a learning community in which the learners are involved in collaborative, interrelated discussions and reflection related to learning that will help guide them to the development of deeper meaning and confirmation of mutual understanding. The key stakeholders in the educational process of a community of inquiry are the teachers and the students.

In order for a higher educational experience to be achieved within a community of inquiry (COI) framework, there are three components: social, cognitive, and teaching presence. The underlying foundational perspective of this framework is a collaborative constructivist perspective of teaching and the process of learning (Garrison & Anderson, 2003). In this model, both the teaching and social presence directly connect and develop the cognitive presence of the learner. An overlap exists between teaching, social, and cognitive presence. Research by
Garrison, Cleveland-Innes, and Fung (2010) resulted in findings that showed the cognitive presence factor in online and blended learning could be predicted by the quality of teaching presence and social presence. To establish this level of inquiry-based learning, these components must overlap. A quality, blended community of inquiry should include activities that target each of these areas. The focus of this process is to have a shared responsibility as a community of learning (Garrison, et al., 2010).

To gain a better understanding of the Community of Inquiry framework, each individual component can be defined. Garrison (2009) has defined social presence as “the ability of participants to identify with the community, communicate purposefully in a trusting environment, and develop interpersonal relationships by way of projecting their individual personalities” (p. 352). Social presence is an important piece to the process of collaboration as it facilitates cognitive learning objectives through investigation, sustaining, and critically thinking amongst a community of learners (Garrison & Anderson, 2003). The three categories of social presence are affective expression (emotions, humor, self-disclosure), open communication (encouragement, reflective participation, and interaction), and group cohesion and identification of individual and roles.

Garrison, Anderson, and Archer (2001) defined cognitive presence as “the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication” (p. 11). Cognitive presence involved four phases. These phases are initiating the inquiry process (triggering event,) the process of understanding the problem (exploration phase), focusing on the meaning of the problem and
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possible solution (integration phase), and finding a solution (resolution phase) (Garrison & Anderson, 2003). Finally, the teaching presence was defined by Anderson, Rourke, Garrison, and Archer (2001) as “the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (p. 5). Teaching presence brings “all the elements of a community of inquiry together in a balanced and functional relationship congruent with the intended outcomes and the needs and capabilities of the learners” (Garrison & Anderson, 2003, p. 29). Teaching presence involved three categories including design and organization, facilitating discourse, and direct instruction. The Table 6 Blended Learning and Community of Inquiry Instructional Practices, identifies the instructional implications of each presence.

Table 6

Blended Learning and Community of Inquiry Instructional Practices

<table>
<thead>
<tr>
<th>Presence</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Presence</td>
<td>Individual and partner/group online projects that promote inquiry and collaboration</td>
</tr>
<tr>
<td></td>
<td>Selection of challenging but accessible content with clear connections to current and future practice</td>
</tr>
<tr>
<td></td>
<td>Online Discussions, grounded in that course content, that promote critical</td>
</tr>
</tbody>
</table>


thinking

Online Assignments (e.g., journal entries, self-assessments) that promote reflection

Social Presence

Virtual space for introductions of students and professors and personal note to students from instructor

Explanation about course and assignment expectations through virtual webinars and course overview

Opportunities for formal and informal collaboration through online site

Processes that encourage and recognize active participation and further inquiry to learning

Opportunities for students to showcase their work and projects through visual posters, online activities, recorded webcasts

Teaching Presence

Instructor provides clear communication about goals, assignments, online format, and submission requirements.

Instructor is engaged in online discussions, appropriately challenging presence in discussions

Instructor takes lead from students’ interests and further inquiry to provide
additional resources

Instructor is aware of student participation and continually engaging in online discussions as well as individually with students to ensure comfort and progress

Expecting and engaging in critical reflection

Providing timely feedback on assignments and online discussions

Establishing activities which allow students to be leaders of online discussions

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The pedagogical design of blended learning and the implementation of the course require consideration to these different presences. The instructional design should include attention to the selection, planning, and introductory presentation of content. Overall, the role of the teaching presence is to emphasize the elements of social and cognitive presence with a final vision to meet the desired educational outcomes (Beck, 2015).

In blended learning, there is an emphasis on building learning communities in order to foster student participation and to increase learning in online and blended learning environments (Colachico, 2007). According to Conrad (2005), a community is defined as “a general sense of connection, belonging and comfort that develops over time among members of a group who
share purpose and commitment to a common goal” (p. 1). However, it can be a challenging process to establish an effective learning community both in traditional and online environments unless the design and lessons are carefully planned and allow for interaction opportunities (Colachico, 2007).

All participants in a collaborative learning environment must assume various teaching and learning responsibilities. These principles have provided decades of understanding to enhance teaching in higher education (Vaughan, Cleveland-Innes, & Garrison, 2014). However, these guiding principles need to be updated to reflect the changing world and needs in higher education settings. As this is an evolving approach to teaching in higher education settings, an understanding of different principles is essential to develop coherent practice strategies and techniques under theoretical frameworks.

The Community of Inquiry framework is applied to establish an engaging, connected, learning community that enhances and supports deep approaches to learning and cognitive presence. With careful planning and development, community of inquiry develops in an online and blended learning environment. Blended learning courses designed under the guiding principles of Community of Inquiry are very successful in creating a successful and enriched learning environment (Vaughan, Cleveland-Innes, & Garrison, 2014). Garrison and Kanuka (2004) found that the blended learning environment is highly effective in supporting a community of inquiry. Specifically, the identified strengths of blended learning courses include group cohesion, higher levels of inquiry, and higher rates of student satisfaction.
Barriers to Blended Learning

While there are theoretical frameworks being developed and applied to blended learning practices, the transition from traditional teaching practices, development of courses, professional development practices, and implementation are still evolving. Different challenges and barriers continue to be identified as these practices are evolving and being implemented. The research covers many different areas of consideration to blended learning practices that need further attention and development to enhance these practices and to provide instructors with a clear understanding of how to apply the underlying principles.

Researchers have explored how blended learning affects the experiences and learning of the students. Additionally, studies have discovered the barriers and challenges of designing and implementing blended learning in regard to instructor perceptions. Much of this research has been explored through case studies in which common themes have been identified based on instructor perspectives (Bliuc, Goodyear, & Ellis, 2007). The perceptions of faculty teaching blended learning courses have also been studied and helped lay the foundation for future needs in research.

According to research by Osguthorpe and Graham (2003), instructors may be attracted to blended learning practices as a pathway to improve pedagogy, increase access to knowledge, and facilitate more opportunities for social engagement. Different factors about blended learning have resulted from research that focuses on a variety of variables, factors, and different instructional approaches in an attempt to gain knowledge about the usefulness of blended learning. As a result of this somewhat complex research focus in the area of blended learning,
additional research is needed to gain further insight into the principles for the development, integration, and application of blended learning in academia (Bliuc, Goodyear, & Ellis, 2007).

Barriers to Developing Blended Courses

The process of developing and implementing a blended learning course requires additional time and training. Instructors teaching a blended learning course need to invest more time in order to become familiar with available technology, to create activities to complete in-class, and reflecting and adapting on overall course structure (Edginton, 2010). Additionally, ongoing classroom assessment should be done frequently throughout the course. Due to these factors, faculty may require additional support and resources when teaching blended learning courses (Ocak, 2011).

All participants in a collaborative learning environment must assume various teaching responsibilities. These principles have provided decades of understanding to enhance teaching in higher education (Vaughan, Cleveland-Innes, & Garrison, 2014). However, these guiding principles need to be updated to reflect the changing world and needs in higher education settings. As this is an evolving approach to teaching in higher education settings, an understanding of different principles is essential to develop coherent practice strategies and techniques under theoretical frameworks (Vaughan, Cleveland-Innes, & Garrison, 2014).

Research by Smith, Dekhane, and Napier (2010) identified different themes of challenges for instructors of blended learning courses. These areas included being able to create a balanced blend, creative management of class time, engagement of students, and ensuring students were
keeping up with online expectations. Additionally, through this research the faculty identified several success factors for successfully teaching and designing blended learning.

Following are key recommendations that resulted from the study by Smith, Dekhane, and Napier (2010). The instructors should know their strengths, which will guide their planning to determine which activities to plan and which activities can be successfully carried out online. By laying this foundation to planning and development, barriers in blended learning will be reduced. The instructors should build a classroom that allows students to participate in groups and with each other. The instructors should foster a sense of community by designing different activities and interactions, which allow students to form an online community. Instructors can reinforce a sense of community through online discussions, instant messages, online chat, and email notifications of new content being available. Instructors can provide tutoring and online support. Interactive tutorials allow for review and students benefit from the extra practice.

**Barriers to Teaching Blended Courses**

Although the overall student rating blended courses has been positive, the reduced traditional teaching and communication format and required self-discipline, autonomy, and time-management skills may be challenging for some students. Increasing awareness about what a blended course entails and laying the foundation at the beginning of the course is essential for those students taking a blended course for the first time. Being prepared for online learning is an area that may require further attention to help students be more aware if blended learning meets their individual needs. Additionally, it is also essential to provide ongoing support and provide clear expectations about the blended learning requirements to the students. According to
research by Smith, Dekhane, and Napier (2011), increased success can occur when faculty allow for face to face office hours or through consultation time in which students can get additional assistance. This requires the instructor to be proactive in reaching students who require additional support or assistance.

According to Bliuc, Goodyear, and Ellis (2007), challenges have also been identified by instructors teaching blended courses in the process of balancing the blend. For example, creatively managing in-class time with face-to-face time in blended learning courses is a challenge. Instructors found that face-to-face time was more valuable and did not want to use this time for activities such as having experts speak to the class, tests or quizzes, or trips to the library to find resources. Balancing face-to-face and online components was a challenge for instructors, as they needed to shift their approach during the different environments. During face-to-face time, instructors focused more on collaborating with students in the learning process and promoting discussions.

According to Bliuc, Goodyear, and Ellis (2007), the online portion was shifted to allow technology to play a critical role in developing materials/tutorials that could be viewed during online sessions. Engaging and motivating students was identified to be a challenge for instructors of blended learning. Students were reported to come unprepared without reading online assignments. Instructors implemented more quizzes to increase their participation and responsibility. Instructors also found it difficult to ensure sufficient out-of-class support by providing access to online resources. Assessing student level of autonomy for online environment was considered complex. Instructors found that not all students were able to work
independently to complete required online components of the course (Bliuc, Goodyear, & Ellis, 2007).

Additional barriers to effectiveness of blended learning methods have been identified. The U.S. Department of Education (2010) has cautioned researchers regarding implementation of blended courses without consideration to aligned theories.

The combinations of technology, content, and activities used in different experimental conditions have often been ad hoc rather than theory based. As a result, the field lacks a coherent body of linked studies that systematically test theory-based approaches in different contexts. (p. 49)

Furthermore, in a meta-analysis, Lack (2013) discusses several barriers to engaging in research about blended learning.

Yet it is also important to understand how challenging it is to do rigorous research on educational outcomes, especially where human subjects and Institutional Review Board requirements are involved. Barriers to randomization, including resistance from faculty, students, and administrators, can be difficult to overcome, and implementing proper research protocols is not easy. (p.13)

As practices continue to shift towards developing and enhancing a technology based learning platform, it is important that successful models of learning be identified. This is required at the institutional, program, and course levels. This transition will require deeper understanding and a way to profit from the learning opportunities available in both face-to-face and computer mediated or online learning environments. This research will continue to explore
blended learning as well as discuss the benefits of blended learning. In the implementation and development of blended learning practices, there are different barriers to blended learning. In this research, additional information will be obtained and analyzed to determine patterns of identified barriers, which may lead to a better understanding of how to cope or overcome with these challenges.

**Barriers to Institutional Adoption of Blended Courses**

There continues to be limited research that addresses institutional adoption of blended learning. This research would benefit higher education institutions in moving towards systematic and strategic adoption and implementation of blended learning. Graham, Woodfield, and Harrison (2013) proposed a framework for institutional adoption of blended learning by identifying three stages. These stages include increased awareness and exploration, adoption and early implementation, and mature implementation and continued growth. The framework also identified essential strategies, structures, and barriers in the supports provided that universities may utilize at each stage of the process (Graham et al., 2013).

The research by Porter and Graham (2016) focuses on the process by which institutions implement blended learning. Additional research must determine how to facilitate faculty adoption and buy-in to blended learning. Without this instructor support, institutions seeking to change the instructional format to blended learning formats will not meet this transition with success (Christo-Baker, 2004). This is founded on the assumption that instructors are the primary pedagogical decision-makers and, without their support, these initiatives will not be successful (Graham & Robison, 2007).
Adopting a new teaching approach is often an extremely challenging task. Researchers have explored faculty adoption of various types of educational technology to support blended learning environments, open educational resources, technology used in distance education, and specific technologies, including the use of social networking sites (Mtebe & Raisamo, 2014, Zhou & Xu, 2007). Much research has examined the barriers of faculty adoption of blended learning. Buchanan, Sainter, and Saunders (2013) researched faculty in Britain to discover their perceived barriers to adopting different technologies for blended learning. Through this research, the greatest barrier was the availability of technology and support.

Humbert’s (2007) research involved faculty members at a higher education institution identification of blended learning adoption barriers. Findings revealed that instructors were concerned about the amount of student interaction, increased time needed to prepare the online portion of learning, and difficulty interacting with students through technology compared to face-to face interactions.

**Barriers in Professional Development about Blended Learning**

With the advanced development of technology, both the way in which knowledge is shared and communication in adult education have changed in many ways (Frazier & Boehm, 2012). With this advancement, the need for reform in education is the center of discussions among educational policy developers and researchers. Factors that influence educational reform are multifaceted, but instructors remain at the core of these discussions (Borko, 2004). At the same time, educational institutions and the instructional demands consist of many different connected parts. In any classroom or educational program, learners arrive with a wide range of
experiences and backgrounds. Despite these variables at any level, instructors are required to be prepared to address their needs in a constantly evolving world.

Due to these changes and needs, instructor education and training may not be sufficient, based on past practices of professional development. There is an imminent and constant need for growth through professional development that will provide instructors with the knowledge and skills to keep up with the demands of the changing and interconnected world. According to Theodosiadou et al. (2017), the required professional development and ongoing training is not being met. According to a survey distributed by Organization for Economic Cooperation and Development (OECD) (2009), instructors feel they have not received a sufficient amount of training, and more than half of the respondents wanted more training than received in the past 18 months. This research revealed that there are barriers that prevent instructors from taking necessary professional development. Three specific barriers were identified that affected professional development in blended learning. These barriers were conflicts with schedules, lack of meaningful professional development on blended learning, and cost (OECD, 2009).

Professional development barriers are essential areas of concern that required focus in an effort to increase instructor access to meaningful professional development. Theodosiadou et al. (2017) suggest that online forms of education will result in increased flexibility and costs that are more efficient. Therefore, an effective way to the aforementioned barriers may be development of online training and professional development opportunities.

Preparing faculty to design and deliver this format of instruction effectively is an important process necessary for implementation of blended learning courses (Kaleta, Skibba, &
Joosten, 2007). According to Kim, Bonk, Teng, Zeng, and Oh, (2006), faculty training is essential in quality blended learning design and implementation. Furthermore, Dukes, Waring, and Koorland (2006) found that faculty need specific knowledge, skills, and genuine interest to teach blended courses. The downfall continues to be that many of these instructors do not receive necessary training in both pedagogy and technology. Research revealed that instructors often seek out their own professional development to enhance their skills (Duke et al., 2006). In order to enhance practices, Duke et al. (2006) suggested that instructors experience this format of learning first hand and work with a peer mentor in the development and design of blended learning courses.

Further, Aycock, Garnham, and Kaleta (2002) described blended learning adoption as a shared responsibility among colleagues. Chizmar and Williams (2001) discussed the benefits of establishing collegial connections to share experiences with implementing technology in the courses. In addition to professional development and collegial support, it is essential to provide instructors with time to learn the technological aspects and to prepare their courses. Additional support can be provided financially through grants and adoption of reliable technology (Vignare, 2007). Similarly, Oh and Park (2009) identified barriers to adoption of blended learning that included heavy workloads, decreased motivation, and not enough financial support to execute this format effectively.

**Benefits of Blended Learning**

Through a synthesis of information, it is evident that there are barriers to blended learning. However, once implemented with efficiency and fidelity, the potential benefits are
favorable. Several meta-analyses have been conducted to assess the effectiveness of blended learning. These studies will be included in the discussion below about the benefits of blended learning. However, additional empirical research is needed to enhance practices to increase benefits for the learner and instructors.

This section will review the potential benefits of blended learning as well as identify potential limitations in the empirical research and how information is collected to measure these benefits. Studies conducted to assess the effectiveness of blended learning have been faced with some criticism and barriers. Despite the research conducted, scholars believe that more empirical research on blended learning is needed (Picciano, Dziuban, & Graham, 2014).

There is existing research in the effectiveness of blended learning that suggests this learning platform can provide a favorable approach to establish learning environments that allow learners to adjust the process of learning to meet their personal preferences, schedules, and interests. According to Bianco, Collis, Cooke, and Margaryan, (2002), supporters and advocates for this approach believe that blended learning can enhance learning in both learning environments, the classroom setting and the online component. Singh and Reed (2001) suggest that blended learning allows for a cost effective environment that can enhance learning experiences and increase overall outcomes. Oliver and Trigwell (2005) have further synthesized research about blended learning by drawing from both the corporate sector and academia. Through this research, Oliver and Trigwell concluded that the blended learning approach must be grounded in learning theory, and a shift must occur from teacher centered to student centered. The U.S. Department of Education (2010) discovered in a review of research that “on average,
students in online learning conditions performed better than those receiving face-to-face instruction” (p. ix). The same study found that this may be due to blended learning, including “additional learning time and instructional elements not received by students in control groups” (U.S. Department of Education, 2010, p. ix). These studies reveal benefits of blended learning in educational outcomes, higher enrollment rates, increased autonomy, and a variety of accessibility features and enhancements that allow for individualized learning.

**Learning Outcomes Benefits**

With regard to learning outcomes, blended learning has impressive results in student performance. Research has found that the blended learning format of teaching has resulted in reduced dropout rates, an increase in exam grades and passing scores, and an overall increase in student grades. López-Pérez, Pérez-López, and Rodríguez-Ariza (2011) examined the use of blended learning with 985 first-year university students. Results of this research revealed that by using various formats of online materials and activities to consolidate the content of the face-to-face lessons, student dropout rates were reduced and overall exam pass rates improved. Final grades also improved, and the instructor felt a higher degree of involvement with the learners was achieved throughout the course. Additionally, students felt that the blended learning format resulted in higher motivation and overall satisfaction. Similar findings were revealed in a study by Vaughan (2010), who conducted a case study with 70 participants. This research compared a course before and after the redesign process and focused on alignment of learning outcomes, assessments, and the integration of technology. This course was part of an institutional initiative to shift teaching and learning from a passive lecture approach to a more
engaging and collaborative approach through a blended learning format. The redesigned course resulted in a 25% increase in student satisfaction (from 50% to 75%), while overall retention of information improved, and the class grade average increased substantially.

Similar studies found a significant impact on student motivation and overall satisfaction in a blended course. Collopy and Arnold (2009) studied undergraduate teacher candidates who engaged in learning modules that were delivered in one of three ways: online only, partially blended, and fully blended. Results from this student concluded that learners in the two types of blended classes reported “significantly greater feelings of competence and comfort in putting what they learned into practice” (Collopy & Arnold, 2009, p. 97). Additionally, these learners were more satisfied with group interactions and functioning in the blended format compared to the online-only course format. Additionally, students in blended learning courses reported “significantly higher levels of learning” (Collopy & Arnold, 2009, p. 96). Educational research suggests blended courses are more effective compared to both face-to-face and solely online courses (Graham & Stein, 2014).

**Enrollment Growth Benefits**

A survey (Allen & Seaman, 2013) including more than 2,800 colleges and universities reported a significant rise in the percentage of students taking some form of online classes. Further, with online and blended course enrollments growing by approximately 10 percent per year since 2002 and 69 percent of colleges projecting online and blended instruction to be a critical focus on long range plans (Allen & Seaman, 2013), higher education institutions continue
to increase blended course offerings. With this increase in availability of blended learning offerings, research about the benefits has emerged.

According to Seaman, Allen, and Seaman (2018), distance education enrollments are on the incline for the fourteenth year in a row. This continues to increase at a rate much higher than in the past several years. Since 2012, online learning formats have increased steadily, while overall higher education enrollment numbers have declined over a four-year period, faster than they had for the past several years (Seaman, Allen, & Seaman, 2018). While the overall enrollment rates in higher education are declining, online learning formats are becoming increasingly more popular with continuous growth rates. According to Seaman, Allen, and Seaman (2018), in the year 2016, 6.36 million higher education students, or 31.6 percent of all higher education students, took at least one course that was fully online or blended. About half of these students studied through blended learning formats.

Blended learning courses provide institutions of higher education with an opportunity to expand educational access to students and increase student enrollment. An additional consideration to blended learning course offerings can be increased student retention. This is particularly evident for students who do not want to drop out due to a professional or personal shift in schedule, which could be related to several factors including employment status, deployment, medical changes, family, extended travel, or other barriers. Research indicates that when students drop out of a course, they experience greater risk of non-completion (National Student Clearinghouse Research Center, 2015). Blended learning and student retention require a shift in planning and an institutional commitment to implementing innovative approaches to
program and course formats that include consideration to student engagement and individualization. According to Poon (2013), blended learning in higher education has reduced student withdrawal rate and potential cost and resource savings through the implementation of blended learning (Poon, 2013).

According to research by Marcucci, Johnstone, and Ngolovoi (2008), the institution of higher education worldwide is caught between growing pressures of public and private demands for the product, increase in costs of education, and decreasing financial support from the government. Three universal demands that characterize higher education globally are the demands for higher quality, increased access, and greater equity (Marcucci, Johnstone & Ngolovoi, 2008). The change to the learning environment and structures of higher education to increase opportunities and access is overwhelming. There is an overall recognition that higher education is a major contributing factor to national economic status. Blended learning has become popular due to the potential for providing additional access to content and instruction that are flexible and barrier free.

**Autonomy Benefits**

Learner autonomy has been referred to by many different terms, including self-directed learning, self-planning learning, and independent learning. These labels have been applied to indicate learners’ ability to become responsible for their own learning through making independent choices (Asuman, 2010). According to Cotterall (2000), learner autonomy requires that the students take ownership and charge of their learning by managing their learning. Several
researchers investigate the significance of learner autonomy as a characteristic of successful learners in a blended learning environment (Cotterall, 2000).

Based on research by Poon (2013), blended learning benefits students and institutions by facilitating enhanced outcomes, increasing flexibility, improving a sense of community, and strengthening student satisfaction. This approach also can offer instant and specific feedback to all students, rather than just the students actively engaging in class discussions (Patchan, Schunn, Sieg, & McLaughlin, 2015). By providing students with control and autonomy in their learning experience through blended learning courses, students may better integrate the new knowledge with existing knowledge, thus facilitating deep, meaningful learning (Kim, Bonk, & Oh, 2006).

For many years, traditional teaching has placed instructors in the center of the class as the provider of knowledge. The traditional approach to instruction was founded on the principles that knowledge flows from the instructor to the students (Benson, 2001). The understanding and principle of facilitated teaching date back to the late 1900s (Candy, 1991). Instead of transmitting knowledge, autonomy suggests that the teacher should act as a facilitator during the process of learning. Contrary to traditional practices, knowledge should not flow from one source to another. Instead, to allow for authentic learning to take place, knowledge should be constructed by the learner (Candy, 1991). The blended learning environment allows the facilitator to provide experiences that increase curiosity, enthusiasm, and highly productive environment for learning (Benson, 2001).

According to Lee (1998), important considerations regarding autonomy in the learning process is that “learning is a lifelong endeavour” (p. 282) and that, through the use of computers
and devices, students are able to learn more than they do in class. Technology facilitates learner autonomy in and outside of the classroom. Blended learning lessons allow different lesson goals to be established, increased use of media, more variety of input and output, and increased learner autonomy (MacKenzie et al., 2010). MacKenzie et al. (2010) identified three areas in which learning is facilitated in blended learning environments to increase autonomy: individualization, interaction, and interdependence. Individualization is fostered through allowing the learner to make choices in how they access input. An example would be watching a video or webinar at his or her own leisure. Interaction in a classroom environment is through shared spaces, and in an online environment, this can be achieved through threaded discussions. Collaborative practices occur through the Internet and remove the expectation of face-to-face interaction.

Additionally, this benefits the students who are less talkative than others and may be more comfortable sharing and responding through technology (Iida, 2009). Studies by Iida (2009) found that if learners and instructors engaging in dialogue about the learning process, learner autonomy is promoted by this collaboration. Further, autonomy is not just about learning independence in a blended environment, but more the interdependence between the learner and teacher (Iida, 2009). There continues to be a need for in-depth investigation on its impact on learners’ ability to translate their interests and motivation into autonomy and how it can be used to allow learners to do so. Particularly, Graham (2006) suggests that four critical dimensions of interaction to consider in choosing a blended learning model are space, time, fidelity, and humanness. It seems that interactions that occur in blended learning system needs to have a positive impact on the learners themselves in a manner that will foster their autonomy as well.
Accessibility Benefits

Online learning has a history in higher education that goes back at least 100 years. With the development of the Internet and the World Wide Web, learners across the world are able to access learning, and today’s online learning environments offer a variety of educational resources in different formats and the technological capacity to support both synchronous and asynchronous interactions. Based on the technological advancements and accessibility, this instructional format was quickly adopted by institutions of higher education and within the corporate world for training of staff.

According to the United States Department of Education (2010), there are contributing factors that result directly in better outcomes in a blended course. The first identified factor is that blended learning increases the accessibility of learning for students who would not be able to attend traditional classes. Additionally, blended learning allows for accessing content in a more efficient and cost effective manner. This format also allows instructors to instruct more students while maintaining rigorous learning outcomes comparable to traditional face-to-face instruction (United States Department of Education, 2010). These components increase accessibility, flexibility and, in effect, result in favorable outcomes for the learners. Stein and Graham (2014) also present several factors that may contribute to making this approach more effective. These ideas include improved instructional design, increased guidance by instructor, earlier and continued access to learning materials, individualized learning adjustments, increased engagement, and more time on task (Stein & Graham, 2014). Blended learning courses intensify the student’s focus on the most relevant work through the course website.
Educational methods, pedagogy, and technology used in and for teaching and learning in higher education settings are changing. Diversity, gender, and societal and personality differences among students have made teaching higher education a challenging job in the current world (Bonk, 2006). The World Wide Web and the Internet have changed these teaching practices by creating new platforms for learning. With this evolution, this is a transitional time, and educators must make changes to current practices.

When planning and providing instruction in a digital world, educators must be cognizant of time and how it is being utilized. Students have access to knowledge that is implicit within the digital academic community. Similar to the flipped classroom method, blended learning allows students to be exposed to tacit knowledge before classroom discussion. This allows the conversation to go deeper because the background knowledge is already established. Furthermore, Garrison and Kanuka (2004) found that blended learning environments share similar values of traditional classes. This improves the effectiveness of meaningful learning experiences.

Blended learning increases educational opportunities by removing any barriers. Edwards, Nicoll, and Lee (2002) believed that through the delivery of instruction through technology, the boundaries between education and work are opened, an increase in access to higher education is established, and any barriers to accessing higher education are removed. Similar to the core principles of Universal Design for Learning (UDL), technology has allowed for universality and equity for all learners by drawing on individual strengths and unique needs to extend and enhance learning (Ministry of Education, 2011). Furthermore, the Internet allows students to
participate in discussions synchronously and to share their thoughts and work. These discussions and opportunities were previously not accessible, but now open a network of connections and resources. Essentially, blended learning creates a barrier-free educational environment.

**Designing Blended Learning Courses**

While there are many different potential benefits, transitioning from traditional face-to-face course to blended learning courses can be challenging. One aspect of consideration identified is that students require a set of skills and abilities to experience success in the blended environment. Faculty teaching blended learning courses are required to adopt new technology tools and transitional mindsets to allow for positive outcomes (DeLacey & Leonard, 2002). Considering these potential challenges, transitioning to and designing the blended learning course require careful management and planning to increase benefits of this approach. Successful design of blended learning requires institutions to focus on traditional classroom learning experience while also exploring how different technology solutions can increase and enhance student learning, studying, and accessibility both on and off campus.

There is an important difference between designing a new blended course and redesigning an existing course to be a blended format. A new course allows for a careful development using a blank slate. In contrast, the redesign of an existing course requires a careful selection and possible redesign of activities, instruction, and assessment. Direct transfer of face-to-face activities to an online format may not translate to the blended design. For example, the traditional format may not be applied to online delivery due to sequence of course activities
or the instructor’s ability to facilitate online discussions. McGee and Reis (2012) emphasized that it is essential to focus on the redesign rather than trying to plug an existing syllabus into a blended format. Further, this focus on redesign or design should be on what the instructor and learner are expected to do, rather than how this mode is delivered. Specifically, according to Simpson and Anderson (2009), redesign planning should be driven from the educational principles rather than the technological potential utilized in the blended course.

Blended learning is essentially about redesigning the connection between teaching and learning. Instructors need to move beyond the notion of delivering content simply in a new medium (McLuhan, 1964). It is imperative that instructors and designers of blended learning reflect on how to design and deliver blended learning courses. Blended learning offers possibilities to transform learning environments that can facilitate higher level and critical thinking skills. This presents a new process for higher education instructors as they create a transformative learning environment through blended learning courses.

The focus on designing blended learning is the careful combinations of educational theory and the use of technology. Blended learning is a term used to define courses that are designed to meet in a combination of delivery modalities. MacDonald (2006) advocated a learning context that accommodates students by providing clear expectations, especially if students have no prior experience in blended learning. MacDonald (2006) also advocated that constructivist learning activities would increase learner engagement. Another conceptualization is the belief that face-to-face expectations and online learning requires interactions although the learners and the instructor are not physically together.
While the literature includes varying definitions of blended learning, a more useful definition will better communicate the process of blending the content. Therefore, McGee and Reis (2012) propose the following:

Blended course designs involve instructor and learners working together in mixed delivery modes, typically face-to-face and technology mediated, to accomplish learning outcomes that are pedagogically supported through assignments, activities, and assessments as appropriate for a given mode and which bridge course environments in a manner meaningful to the learner. (p. 9)

The question of the relative efficacy, implementation practices, and technological tools of blended instructional model require additional studies and research. This form of learning can include a wide range of Web resources and technological components to enhance the learning experiences of the college students. Transitioning from the established and historical practice of traditional teaching to include online learning opportunities is a challenging process because there is limited guidance in this transformation process. Instructors are taking the traditional course format and blending the learning process. However, through the redesign process to develop a blended course, many new variables emerge and must be considered (Stein & Graham, 2014).

Blended learning has become increasingly popular in higher education settings with the technological advances and convenience of this pedagogy. Traditional learning approaches continue to be common and appropriate methods to teach courses; blended learning has the potential to provide support and is a convenient replacement to traditional learning. Challenges
and continued research is in the overall development, transition, and implementation process (Stein & Graham, 2014). However, in designing and implementing blended learning, certain factors and considerations need to be made prior to implementation. Simply replacing onsite activities with online ones will not yield great results (Stein & Graham, 2014).

Blended learning reduces the traditional, face-to-face instruction by introducing online learning experiences (Garrison & Vaughan, 2008). The blended learning model has experienced an increase in popularity and use in higher education. This growing trend can be attributed to the flexibility offered, the impact of overcrowded classrooms, and the perceived improvement in the teaching and the overall learning experience (Napier, Dekhane, & Smith, 2012). One consideration is that students’ success in blended learning courses requires the learner to be independent, demonstrate effective time management skills, and have a comfort level with technology (Napier & Smith, 2009). Instructors of blended learning courses are required to utilize new technology and have a plan to implement this new approach (DeLacey & Leonard, 2002). Considering the framework of blended learning and required redesign of the course, instructors will need to develop and implement the blended learning format.

According to research by Stein and Graham (2014), the most important focus in the development and design process are “the concepts of mixing synchronous with asynchronous interactions, planning for learning time, and incorporating the right technologies” (p. 19). Using technology and the Internet, communication with others and the ability to access information can be instantaneous. This redesign process should focus on and infuse asynchronous interactions, which allow for increased sense of community while maintaining the benefits of flexibility.
Asynchronized interactions do not have to occur at the same, or synchronized, time.
Synchronized interaction occurs in real time. In a blended course, synchronous interactions may
occur face-to-face or via online methods such as video conferencing. A blended course can
provide either of these formats in the design of courses.

In blended learning environments, technology is used to support and assist the teaching
and learning process. The course learning objectives should be the focus of the planning and
design process. The course content is the driving force behind the development of the blended
course. It is important, during the planning process, to deliver instruction and learning
expectations in a way to allow for individualization and universal design for learning (UDL). A
consideration to the students’ learning styles and preferences should be made, and the course
adjusted to include those factors.

With the diffusion of computers and the Internet, instructional designers and instructors
have the ability to utilize technology to enhance the activities, increase accessibility, and meet
individual needs of students. Specifically, technology allows access to an extensive amount and
variety of information, including “dynamic data and visualizations of complex phenomena”
(Woo, Herrington, Agostinho, & Reeves, 2007, p. 37). Through creative planning, this
information can be presented through technology in a variety of ways to enhance the learning
process.

The use of technology in blended courses can be perceived as an innovative shift to
reformat the instruction delivery and learning process by integrating independent, collaborative,
and interactive work into the format of instruction. Therefore, the course needs to be designed
with consideration of access to technology and the infrastructure of the learning management system (LMS) being utilized. The information for the online portion of the blended learning course is most often shared through an LMS. This format will aid in accomplishing the overall set up and organization of the lessons, tasks, grading, attendance, and discussions.

During a transition from traditional to a blended teaching approach, adjustments are necessary to apply classroom practices in a blended learning environment. Blended courses may be more intentionally designed than the traditional model and may require instructional designers or technological support in the redesign process (Stein & Graham, 2014). According to Stein and Graham (2014), a true blended course is not simply “a digital facelift of the traditional onsite formal learning to informal learning” (p. 26). Instead, a blended learning environment “can create opportunities to bridge formal learning to informal learning, and encourage lifelong learning habits” (p. 26).

In designing these courses using a blended environment, the course experience typically mixes synchronous with asynchronous activities. When selecting and designing these activities, the instructor needs to select and organize the experiences and assessments which support the course objectives while emphasizing the strengths and reducing the weaknesses of both the online and onsite learning environments (Stein & Graham, 2014).

In theory, blended learning is combining traditional teaching with technology to expand communication, accessibility, and interaction. Blended learning allows the convergence of both traditional teaching and online learning. Blended learning emphasizes autonomy of the learner in how they pace their learning and guide their own discovery of knowledge. As referred to by
Stein and Graham (2016), the “blended rhythm” (p. 46) of a course should be “different for each student based on individual needs” (p. 46).

Different strategies and approaches can be utilized to design blended courses that will engage learners. While there is no formula or absolute plan to engage all learners, in evaluating the quality of the instructional experience, one can consider effectiveness, engagement, and efficiency (Stein & Graham, 2014). By providing a mix of approaches, both the instructor and the learners can determine which approaches or combination of approaches work best for the diverse population. Through careful planning of the blended course, engagement through different interactions can be infused into the different experiences. Specifically, instructional activities that allow for different types of interaction will allow for higher engagement in the learning process (Stein & Graham, 2014).

Stein and Graham (2014) described the different types of interaction. Student-instructor interaction can be one-on-one, online, or in person. The ratio can also be one instructor to the group of learners as a whole during a lecture, lesson, or discussion. Student-student interaction can take place during informal discussion or through group learning activities. These interactions can be structured online or in-person during different activities in class such as discussions, threaded discussions, forums, or group projects. Student interaction with content (student-content interaction) is most commonly presented through readings, textbooks, or other text-based materials. Through blended learning formats, students also have access to digital content (including videos, simulations, Web-based information, etc.).
All of these interactions can occur during online or in-person learning, and they each have valid strengths and weaknesses. In the transition from traditional to blended, course designers need to consider the strengths and limitations to guide in the development of human and content interaction. As depicted in Table 7 *Strength and Limitations of Human Versus Content Interactions*, these strengths and limitations are identified by Stein and Graham (2014).

Table 7

*Strengths and Limitations of Human Versus Content Interactions*

<table>
<thead>
<tr>
<th>Human Interactions</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotions: Humans are able to connect based on different emotions (i.e., happy, empathy, concern). These emotions allow humans to show passion and excitement for a topic.</td>
<td>Patience/Consistency: Humans have difficulty repeating the instructions or feedback consistently. Due to the boredom of repetition, errors are made.</td>
</tr>
<tr>
<td>Complex Diagnostics: Humans who have content knowledge and experience can diagnose student learning challenges.</td>
<td>Access/Availability: Humans have difficulty multitasking in a way that benefits many different learners at the same time. A limitation is that humans are not available all of the time/24 hours per day.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content Interaction</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patience/Consistency: Computers are designed to provide errorless repeated instruction and feedback with consistency.</td>
<td>Emotions: Computers do not possess emotions such as enthusiasm. Therefore, it is difficult for learners to connect on an emotional level.</td>
</tr>
<tr>
<td>Access/Availability: Content</td>
<td>Complex Diagnostics:</td>
</tr>
</tbody>
</table>
Interactions are available 24 hours a day as needed. Computers can multitask and meet the needs of multiple learners simultaneously. Computers are able to perform complex diagnostics/There are still limitations in diagnosing and providing feedback on complex learning tasks.


As with any pedagogy or instructional strategy, there are strengths and limitations. A carefully designed blended learning course can address limitations to enhance learner engagement. There are different approaches to apply in the online learning portion of the course that enhance the limitations of learner engagement in traditional face-to-face environment. As identified in Table 8, the instructor can utilize online capabilities to improve participation, pacing, authenticity, interaction, and preparation (Stein & Graham, 2014).

Table 8

<table>
<thead>
<tr>
<th>Area</th>
<th>Online Capabilities</th>
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<tbody>
<tr>
<td>Participation</td>
<td>100 percent of learners can be expected to engage and participate in the activity</td>
</tr>
<tr>
<td>Pacing</td>
<td>Pacing can be individualized. Students can go back and review lesson to increase understanding. Students have opportunities to expand their learning through further research</td>
</tr>
<tr>
<td>Authenticity</td>
<td>Develop live authentic videos, webcasts, and virtual learning.</td>
</tr>
<tr>
<td>Personal Interaction</td>
<td>One to one learning interactions through technology formats such as email, texting, or video chat. Students can select their preferred modality of communication.</td>
</tr>
</tbody>
</table>
Instructors can access data and online assessments to guide lesson development for both in-class and online sessions.


Graham, Woodfield, and Harrison (2013) provided a framework for adoption of blended learning that has identified a specific strategy and structure for institutions to address while implementing this practice. Their study focused on the adoption of blended learning and explored how decisions on these issues may facilitate or affect the decision to adopt this practice. Additionally, the contrasting characteristics of the instructors have been analyzed. Based on studies by Graham (2003), there are six reasons to implement blended learning in higher education settings. These reasons included (a) to enrich teaching approaches, (b) access to knowledge and materials, (c) social interactions, (d) autonomy, (e) cost, and (f) ease of adjustment or change as needed, as identified in this study (Graham, 2003).

**Professional Development**

A study by Kenney and Newcombe (2011) included an action research approach to review instructors’ experiences associated with adopting a blended learning approach and transitioning from a traditional approach. This research concluded that faculty training is critical, and that “Not every faculty member has the knowledge, skills, and attitudes to teach a technology-based learning course and in many cases do not receive the necessary pedagogical and technical training” (p. 49). From this study, guidance to consider in the development of blended courses is provided to instructors. Specifically, Kenney and Newcombe (2011) stated:
Get training. Re-designing a course to work in a blended format is not easy. Learning how to effectively integrate online with face-to-face instruction so students see the connection and your course does not become a ‘course and a half’ is essential for effective blended learning. Online learning is best understood when instructors have a chance to engage in the experience themselves through online workshops conducted by qualified trainers. A valuable part of the online training is interacting with and learning from other workshop participants using the approach. (p. 54)

As described by Palloff and Pratt (2013):

The online classroom is a potentially powerful teaching and learning arena in which new practices and new relationships can make significant contributions to learning. In order to harness the power this creates in education, instructors must be trained not only to use technology but also to shift the ways in which they organize and deliver material. Making this shift can increase the potential for learners to take charge of their own learning process and facilitate the development of a sense of community among them. (p. 30)

When designing a blended course, instructors must consider the principles of effective adult learning and determine the balanced blend between online and in-class activities. Additionally, they must be proactive during planning and address student challenges, which may be lack of experience using the technology or lack of time management skills that are essential for blended learning format (Garnham & Kaleta, 2002).
Vaughan, Reali, Stenbom, Van Vuuren, and MacDonald, (2017) has focused on the impact of blended learning courses to enhance student learning and engagement, essentially increased performance. This research also revealed that blended learning provides an opportunity to transform existing curriculum and complete a restructuring with enhanced learning outcomes (Vaughan et. al, 2017). This approach will allow students to engage with the content in a different way using technology. Blended learning requires instructors to think differently about teaching, assessment, and learning. Vaughan and Cloutier (2017) conducted a study that examined the student-faculty partnership to evaluate the effectiveness of a blended four-year education program. For this study, students completed surveys using the National Survey of Student Engagement (NSSE) framework. Results revealed that the students shared positive reactions about blended learning. Additional recommendations included that it would be beneficial to expand the online activities with the introduction of virtual office hours and social media for collaborative and community focused assignments (Vaughan & Cloutier, 2017).

Moskal, Dziuban, and Hartman (2012) evaluated the implementation and practices of a blended learning model at the University of Central Florida. This revealed a positive institutional transformation. This research describes blended learning as a way to connect the traditional and transformative practices in higher education.

Blended learning enhances the integration of new technologies to improve teaching and learning. Critical to a successful implementation of blended learning requires alignment of “institutional faculty and student goals, resource reallocation, support for students and faculty
and a robust infrastructure” (Matheos & Cleveland-Innes, 2017, p. 240). While the model requires time and investment, the result can be improved teaching, learning, performance, and overall satisfaction in this approach.

Willcox, Sarma, and Lippel (2016) take a unique approach to study blended learning in the report, *Online Education: A Catalyst for Higher Education Reform*. This report outlines the role for online learning in higher education reform and in transformative models of instruction. This study stressed the importance that blended learning must be in alignment with learning sciences and the role of the instructor requires a new role (Willcox et al., 2016). Critical to this research is viewing and approaching blended learning instruction differently. The instructors need professional development to move beyond their traditional views of teaching. This revision process requires integration of theory, research findings, instructional design, and support to teach and learn in this environment.

**Summary**

Information advancement and enhanced use of communication technologies has transformed instruction in higher education settings. Instructors have the ability to share knowledge in a new way to enhance the learning experiences of students (Frazier & Boehm, 2012). Blended learning has been characterized as transformational in terms of learning and teaching. Throughout this chapter, different definitions, a theoretical framework for blended learning, identified barriers, persuasive benefits, the design of courses, and professional development practices were introduced.
From this literature review, several keys areas of research require further exploration and development. The instructors’ attitudes on the implementation of the blended learning method may differ based on their overall experience and comfort with the technological aspects of blended learning (Garrison & Vaughan, 2013). There is much research based on student perspective and experiences. The literature review revealed the lack of quantitative studies that examine the relationships between instructors’ attitudes toward blended learning courses and their professional development. The lack of empirical research corroborates and validates the importance of this research study. The majority of the studies found in the literature review, were qualitative studies. Lack of research on the topic of professional development, perceived barriers, and effectiveness of blended learning, created a gap in the literature.

This research focuses on bridging the gap in blended learning research by gaining insight into the instructor views and ratings of blended learning, institutional barriers, and professional development. This research also aims to promote a more comprehensive understanding about blended learning practices, training, and adoption. The methods used to conduct this research study, which examines how instructors rate blended learning, aspects that are considered barriers, and professional development practices will be reviewed in Chapter Three.
Chapter Three: Research Methods

The research methods utilized in this study are explained in this chapter. Specifically, the research methodology overview includes the following components: (a) an overview of the research design, (b) a description of the survey instrument that was used to gather the data, (c) a description of the sample that will be used for the analysis, (d) an overview of the statistical procedures that will be conducted, and (e) a discussion of the limitations of the study. The purpose of this quantitative research study was to research instructor ratings of blended learning courses and analyze how instructors are acquiring the knowledge and skills they need to develop and implement blended learning courses to enhance the quality of the educational experience. The overall goal of this national study was to gain further knowledge about practices being implemented in higher education settings by combining traditional and online learning formats. Based on extensive review of research on blended learning, Bliuc et al. (2007) propose that current research should be more comprehensive in nature than previous research. This research took into account the benefits of the learning experience, potential and identified barriers, and professional development to enhance practices. Further, this research was connected to the overlapping factors of influence.

Research Design

A blended learning environment provides an opportunity for integrating the learning management system (online learning) with face-to-face classroom interaction. Given the importance of student learning and effective teaching practices in higher education courses, it is
imperative to ensure that the practices in place to support student success and overall growth. Similarly, Bonk and Graham (2006) emphasize that the focus in the blended learning research should be the pedagogy and the learning process rather than the technology utilized.

To investigate research questions, this study utilized a purposive sampling using an Internet-based survey to focus on instructor ratings of blended learning as well as different barriers in this learning format and professional development to enhance this pedagogy. This study used a quantitative, non-experimental correlational design to examine how professors rate blended learning compared to traditional teaching (face-to-face) formats and to identify potential barriers to the design and implementation of blended learning. The study analyzed how instructors are acquiring skills and knowledge needed to design and implement blended learning courses.

The study design was consistent with Creswell’s (2012) explanation that quantitative research is the process of collecting data, analyzing the information collected, interpreting the results, and writing the findings of a study. Specific to this study, the researcher did not attempt to control or manipulate the variables in an experiment. Instead, the descriptive research approach will allow the researcher to examine the data collected. According to Leedy and Ormrod (2001), this type of research involves identification of attributes of a particular phenomenon (blended learning) based on an analysis of the data. This analysis was utilized to compile data in an organized way and to determine patterns in the overall outcome. This study provided a summary of the data and numerically described the features of each set of data collected using descriptive statistics.
Participants and Sampling

This section describes and justifies the selection of the research setting, participants, and sampling, thereby providing the background and issues germane to the problem. As the blended delivery continues to be implemented as a hallmark approach in higher education, a continued need for professional development, course designs, shared beliefs, and effective practices need further development. Articulated theories, processes, and principles aligned to blended learning will need further exploration as practices in higher education coursework are implemented.

Participant Selection/Procedure or Recruitment

The survey participatory group was composed of instructors in higher education who taught at least one blended learning course in any level of higher education (two-year, four-year, graduate, vocational) to participate in the study. Participants were excluded from the study if they have not taught at least one blended learning course in a higher education setting. In the event that participants were not found to meet all eligibility criteria, that data was excluded from findings.

Survey response rates in this national study were an unknown variable, which increased the importance of using efficient recruitment strategies. Therefore, the researcher utilized recruitment procedures directly through different organizations instead of directly to individuals. Links to the survey were distributed and posted on national based websites, social media, and email distributions. The researcher utilized various connections to disseminate a Web-based survey. Additionally, participants were collected through the cooperation of national
organizations that provided a link to distribute the survey to professors willing to participate in the study. Further, the researchers increased the number of connections through social media (Twitter, Facebook, and LinkedIn) with higher education organizations and institutions through search fields. The survey was posted on Twitter, Facebook, and LinkedIn. These social media avenues were a way to connect and build resources with professionals in the field on a national level.

SurveyMonkey was the tool utilized for this study. This tool allowed the researcher to collect strictly anonymous responses. By default, the social media messengers (Facebook, Twitter, and LinkedIn) survey collector in SurveyMonkey recorded the respondent's first and last name in survey results. To maintain anonymity, the researcher turned on ‘Anonymous Responses’ to prevent sites from name tracking. Additionally, by default, most collectors record the IP addresses of respondents in survey results. The researcher turned on ‘Anonymous Responses’ to prevent IP tracking. The projected number of participants expected was 30-100. There were 61 (n=61) eligible responses to the survey.

The data collected was organized under different categorization approaches to analyze ratings, barriers, and professional development practices to enhance blended learning design, implementation, and instruction. In the opening introduction to the survey, the researcher defined a blended course as an instructional model that includes a schedule in which some of the sessions during the semester are within a traditional classroom and other sessions are delivered online. After receiving this email or information on the websites, professors read a message requesting their consent and participation in the study. The invitation relayed the purpose and
goals of the study, its intent, and its importance in the advancement of research on blended learning in higher education settings. The email and the link directed each participant to the online survey via a link to Web based survey. The survey (Appendix A) included questions to seek primarily to learn about the instructor ratings, professional development, and barriers to blended courses.

**Archival Data**

Data will be stored for three years electronically on researcher’s password protected computer drive, which is stored at researcher’s home address. During the three years, this data will not be shared with anyone and only accessible by researchers. Ultimately, data will be deleted from the drive and then into ‘trash’, which will be emptied to remove from hard drive.

**Instrumentation**

Survey research was utilized in this quantitative study to describe trends, to determine patterns of opinions, and to help identify important practices and ratings of individuals (Creswell, 2002). Surveying allowed for a systematic, standardized approach to collecting information consisting of sampling, inference, measurement, and analysis (Marsden & Wright, 2010). According to Fink (2003), the best surveys have the following features: specific objectives, straightforward questions, sound choice of sample, and a reliable and valid survey instrument.

Participants were asked a variety of questions to gain further insight about overall experiences with blended learning to identify potential benefits, barriers, and professional development for instructors. Questions ranged in format from Likert scale, multiple choice
questions, and rating scales. Questions were included to obtain basic demographic information. The survey questions were adapted from the eLearning Guild (2003, 2006) using *The Blended Learning Best Practice Survey*. Additional questions were obtained from *Going the Distance: Online Education in the United States (2011)* from Babson Research Group. Permission was granted to use the survey questions as part of this research. A representative from eLearning Guild and Dr. Jeff Seaman from Babson Research Group provided written consent to the researcher to utilize the survey questions in this study.

An online survey method was considered best suited for the purpose of collecting data on the different approaches to teaching blended learning classes and the effectiveness of these models with technology integration. A survey allowed for the exploration and investigation of the teaching experiences of professors implementing blended learning classes. Questions in the survey were formatted with pre-selected responses using binary, multiple choice, and checklist formats. The survey asked several questions about the instructor’s experience and rating of blended teaching and solicited data that supported the research questions.

Data collection sources for the study included a 15-question survey meant to answer the three research questions and investigate instructor ratings about the effectiveness of blended learning, instructor training, and current and potential barriers. Survey questions included demographic information including number of years they have been teaching, number of courses taught per year, size of organization and level of courses currently teaching. Questions in the survey focused on instructor training and exposure to blended learning formats, identification of advantages and effectiveness of blended learning from the perspective of the professor, areas of
Instructors were asked which modality they prefer to utilize in a blended learning course. To gather data to support and help answer the research question of this study, the survey questions were created to yield the most insight into the different barriers and strengths of blended learning. Ultimately, the survey was developed and available to potential participants through a Web based survey tool. No identifying information from participants was collected.

**Validity and Reliability of Instrumentation**

In an effort to determine the reliability of measures, the researchers conducted a pilot study. This was necessary as the questions within the survey were collected from a variety of resources. An important factor of this process was to ensure that the survey questions addressed the research questions accurately. The pilot also tested whether the instrumentation was comprehensible. The participants were asked to review the questions to ensure that the items were well written and clearly understood. Additional input was solicited about if changes were needed to enhance the survey. On average, the pilot study participants took five minutes to complete the survey.

The pilot study was beneficial to determine the feasibility of the survey protocol and identify weaknesses in a study. This process also tested whether the survey instrument was valid to test the research questions. It was also essential to determine if the survey will function as a reliable and valid research tool for this study. The researcher utilized an individual debriefing procedure to gather explicit feedback and reactions to the pilot study. The participants were asked to discuss any wording changes, the value of each individual question, and how the survey
questions aligned to the research questions. Although one recommendation was to add ‘other’ as an option for some survey questions, it was noted that ‘other’ was only selected by one respondent in the pilot study and only to one question. Additionally, the pilot study participants were a heterogeneous group; therefore, there was expected variation in their responses related to their experiences in blended learning.

**Background Information on Survey Tool and Developers**

The survey tool was developed by Guild Research, which is made up of Guild member volunteers. They take part in a selection of survey topics, composition of the survey instruments, and the analysis and commentary included with each report. Committee members represent the population of Guild membership and include members who are managers, instructional designers, course developers, instructors, and consultants from both the vendor and learning communities (Pulichino, 2005).

Guild Research surveys are designed and developed by the Research Committee. Each year the Guild compiles an extensive list of survey topics, which are considered to be of interest to the members and associates. After developing a list of topics, the team narrows these themes down to create a schedule to disseminate the surveys. The team sends out an average of one survey per month. Often, surveys are used to collect data on different survey topics that are of interest to the Guild community. Guild surveys are open to members and associates as well as to visitors to the Guild website (www.eLearningGuild.com). These surveys are accessible via the survey link on the homepage of the organization. There are approximately 16,000 Guild members and associates who receive email notification when a survey is created.
Therefore, these surveys can be classified as random samples because all members and associates have an opportunity to participate, and their participation is random. There were a total of 4,023 responses to the surveys developed by the eLearning Guild (Pulichino, 2005).

The objective of these surveys was to provide ideas and to learn how some members of the eLearning Guild are establishing the value of their efforts and different formats of online learning. The eLearning Guild is a global community of practice for e-learning designers, developers, and managers. The research team develops and disseminates surveys to gather additional insight and knowledge about e-learning practices. Through this member-driven community, the eLearning Guild provides research based training opportunities, networking services, resources, and publications.

The Babson Survey Research Group at Babson College conducts regional, national, and international research projects, including survey design, sampling methodology, data integrity, statistical analyses, and reporting. All data was analyzed using Statistical Package for Social Sciences (SPSS). The survey was proven reliable and valid. Permission was granted to the researchers to utilize the survey questions (Appendix B).

**Data Analysis**

This section describes the data analysis procedures of this study, beginning with the Institutional Review Board process, followed by data cleaning and preparation, the testing of assumptions, and finally a description of how the statistical analysis will be conducted. The quantitative data was designed to detect data entry errors, to allow for the validity of the data collected. A data analysis included the use of categorizing the questions to correlate to research
questions. This was established through a triangulation of data plan prior to distribution (Table 9). By aligning the survey questions to the research questions, a data analysis was specific to the research questions and subquestions of this study.

Table 9

*Triangulation of Data for Blended Learning Research*

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: How do professors rate the quality of the educational experience in their blended courses compared to the face-to-face format?</td>
<td>Survey Questions: 9, 10, 12, 13, 14</td>
</tr>
<tr>
<td>RQ 2: What do instructors consider barriers to the growth and effectiveness of the blended learning environment in higher education?</td>
<td>Survey Questions: 8, 14</td>
</tr>
<tr>
<td>RQ 3: How are instructors acquiring the knowledge and skills they need to develop and implement blended learning courses to enhance the quality of educational experience?</td>
<td>Survey Questions: 7, 8, 11</td>
</tr>
</tbody>
</table>

Responses were analyzed during the data collection through the survey by closed and open question formats. Some questions allowed a response of “other” with a write in section. The researcher looked for common themes in an attempt to gain further insight and explanation to the research questions. The responses led to the discovery of key concepts needing more investigation. This will allow the researcher to connect themes and areas of discovery into current study as extension questions. In seeking for patterns and explanations, the researcher
looked for both patterns that fit and patterns that do not fit, so the outliers’ responses were identified (Ritchie, Spencer, & O’Connor, 2003).

Based on Miles and Huberman (1994) the researcher used three strategies to analyze the data collected in this quantitative study: data reduction, data display, and conclusion drawing and verification. Data reduction was an activity where the researcher was able to select, focus, abstract, and transform the data to draw conclusions that would be verified. Additionally, data was displayed after collected, which allowed conclusions to be drawn, and the researcher was able to analyze and conclude data (Miles & Huberman, 1994). Conclusion drawing and verification required the “researcher to begin deciding what data may mean by noting the patterns, regularities, causal flows, explanations, propositions, and possible configurations” (Miles & Huberman, 1994, p. 11).

This study included a cross-sectional survey, which involves the collection of data at a single point in time from a sample drawn from a purposive sample. Cross-sectional surveys do offer the opportunity to assess relations between variables and differences between subgroups in a population. This was a Web survey, which had a number of advantages over other modes of interview (Granello & Wheaton, 2004). Web surveys are considered convenient for respondents to take on their own time. Since there is no systematic way to collect a traditional probability sample of the general population using the Internet, the researcher used two strategies for surveying the general population using the Internet. One communication strategy was to randomly sample and contact instructors at different universities via email. Another strategy was to utilize social media contacts to post a link to the survey.
Data results obtained from the survey were organized and coded before applying to test the hypothesis (Creswell, 2013). Data collected from the Blended Learning Survey were downloaded to the SPSS Version 24.0 to be analyzed. The scores of the 5-point Likert-type scale were used for data analysis of the instructors’ attitudes toward implementing blended learning and the overall effectiveness of blended learning courses. Additionally, data analysis through the Statistical Package for the Social Sciences© (SPSS) calculated descriptive statistics such as mean, frequency, and standard deviation for demographic data. In addition, the software was used to make statistical assumptions and normal distribution in the data.

Ethical Considerations

Ethical considerations were respected throughout the research process. The researcher submitted a proposal to the dissertation chair. Once the proposal was approved and permission granted by the dissertation chair, the application to the Institutional Review Board (IRB) committee was submitted and subsequently approved. Ethical consideration for this research included both the permission to utilize the survey questions and assurance of anonymity for all respondents.

A Letter of Intent, which included ethical considerations for the respondents, was presented to the participants. The researcher provided notification that ethical considerations were necessary prior to initiating the survey. All measures were taken to ensure that adequate privacy and secure accommodations were provided for the study's participants. Participation was voluntary, and there was no external incentive offered for the participants. Each survey was
completed by a participant willing to assist in furthering the research body on blended learning in higher education.

Additionally, a debriefing page (Appendix A) was available immediately after the last question on the survey was completed. Contact information for the researcher and the researcher dissertation chairperson were provided to the participants. Survey data was populated into an excel spreadsheet from SurveyMonkey. All of the IRB procedures for ethical considerations were followed. Additionally, all necessary approvals were granted proper to the start of the research process. Additional ethical consideration was followed as the researcher completed the NIH training and certification on protecting human research subjects.

Threats to Validity

Validation confirms the intended use of results by measuring the outcomes of a study. Data validation confirms the credibility of the results obtained from the participant’s sample. External validity occurs when the findings have transferability and generalizability (Creswell, 2012). Due to size limitations of the purposive sample, the study had limited transferability and generalizability to a similar population. The research was analyzed with consideration to the implications of both transferability and generalizability of research. In order to make a generalizable claim, there will be a careful examination of the variables involved in the study. For this study, generalizability focused on making predictions based on a recurring experience. With sufficient data to support the research questions, the data was formulated to allow for generalization to similar circumstances.
Summary

This chapter explains the research methods, participant selection, validity and reliability, and review of instrumentation. Methodology describes the way in which this research will utilize data from the survey to answer three research questions. Additionally, the pilot study procedures are included in this chapter to support the research validity and reliability of outcome. Ethical considerations were maintained throughout the research process and described for the study. The results of this study will be analyzed and reviewed in chapter four.
Chapter Four: Reflections and Conclusions

The overall purpose of this national study was to gain further knowledge about practices being implemented in higher education settings by combining traditional and online learning formats. The study used a quantitative approach to explore and evaluate the instructors’ ratings and background experiences and training in teaching blended learning classes in higher education in an effort to increase course effectiveness and uncover barriers that may decrease blended learning effectiveness. Through the analysis of data from this research study, additional exploration will seek to discover potential barriers to blended learning and how instructors compare traditional teaching to this approach. The conceptual and theoretical framework of the study was derived from gaps in the literature about effective practices in a blended learning course. A careful review of exercises, pedagogical approaches, and strategies was analyzed in an effort to decipher quality, successful blended learning in a higher education environment.

This research was conducted on a national level through an online survey. To analyze the purpose of this quantitative study the following research questions were addressed.

RQ1: How do instructors rate the quality of the educational experience in their blended courses compared to the face-to-face format?

RQ 2: What do instructors consider barriers to the growth and effectiveness of the blended learning environment in higher education?

RQ 3: How are instructors acquiring the knowledge and skills they need to develop and implement blended learning courses to enhance the quality of educational experience?
Data Collection

The Blended Learning Course Instructor Research Survey was utilized for this research and data was collected electronically using SurveyMonkey. The data collection period was October 20, 2018 through December 20, 2018. The survey was shared on social media as a post for the public to view on sites including Facebook, Twitter, and LinkedIn. Based on analytic data in SurveyMonkey, the closed question survey took respondents an average of 2.1 minutes to complete.

Data results obtained from the survey were organized and coded to answer the research question (Creswell, 2013). Data collected from the Blended Learning Survey were downloaded to the Statistical Package for the Social Sciences© (SPSS Version 24.0) to be analyzed. The scores of the five-point Likert-type scale were used for data analysis of the instructors’ attitudes toward implementing blended learning and the overall effectiveness of blended learning courses. Additionally, data analysis through SPSS and SurveyMonkey calculated descriptive statistics such as mean and standard deviation for demographic data. SPSS Version 24.0 was used to conduct the descriptive statistical analysis and compare means of different data sets. In addition, the software was used to make statistical assumptions and normal distribution in the data.

Reliability and Validity

In order to validate and determine the reliability of the modified survey, the research conducted a small pilot study (n=5). For the purpose of this study, this process is defined as a small test study to research protocols, instrumentation, sample recruitment strategies, and other research techniques in preparation for the larger study (Stewart, 2016). This proved to be an
important stage in the research project; this was conducted to identify potential problem areas and ways to improve the research instrument. As a result of the pilot study, there were changes made to the instrument prior to the full study. The participants were also asked to identify which research questions they felt were being answered by the questions from the survey. There was one question removed from the survey prior to distribution and certain questions allowed for an open-ended response if the given choices did not fit the participant’s response.

**Response Rate**

Participants in this research were instructors from a national purposive sampling. The initial intent was to focus on a national sampling; however, due to the anonymous sampling, the demographics were not monitored. The higher education instructors were included in the study if they taught a minimum of one blended learning course. The study received 65 (n=65) anonymous instructors’ responses to the survey. Incomplete responses (n=4) were not utilized in the findings and removed. Therefore, this study was completed by analyzing the data from 61 responses (n=61). The quantitative data was reviewed to detect data entry errors, to allow for the validity of the data collected. A data analysis included use of categorizing the questions to correlate to research questions using statistical measures.

**Data Analysis**

Descriptive statistics such as mean and standard deviation were used to describe the demographic data. Standard deviation is a dispersion index that measure variability in this study (Huck, Cormier, & Bounds 2012). The standard deviation was used to describe the variability of the number of courses, level of courses, and academic discipline taught by the
participants. Additionally, the size of the institution was analyzed with descriptive statistics. Data collected from the survey were downloaded to the SPSS Version 24.0 for data analysis.

For research question one, the focus was to determine how instructors rate the quality of the educational experience in their blended courses compared to the face-to-face format. In order to answer this question, survey question 12 asked instructors to rate the quality of blended learning in comparison to face-to-face instruction using a Likert scale. The Likert scale included a rating of superior (5), somewhat superior (4), same (3), somewhat inferior (2), and inferior (1). Descriptive statistics were utilized to determine the frequency of responses as categorized. A t-test analysis was selected to gain further insight to see if there was a difference between instructors’ ratings of blended learning and instructor rating of how much they interact with students in this learning format compared to traditional courses. This helped determine whether significant differences existed between the instructor rating and interaction with students in blended learning courses. Additionally, the researcher utilized survey question nine to gather greater insight into the factors instructors consider to be the greatest advantage about blended learning. Survey question 13 obtained data about the level of interaction in blended learning classes using a Likert scale. This question was added to provide additional insight into instructor perspectives about blended learning courses and the level of interaction occurring in the courses. Survey question 14 was included to support research question one about instructor experiences with blended learning. This survey question allowed instructors to select as many indicators as they felt would answer the question.
For research question 2, the researcher aimed to determine what instructors consider barriers to the growth and effectiveness of blended learning environments in higher education. In order to answer this question, descriptive statistics were utilized to analyze survey question eight, which asked instructors to select three barriers to blended learning instruction. Additionally, question 14 was included to support research question one about instructor experiences with blended learning. This survey question allowed instructors to select as many indicators as they felt would answer the question and some indicate a negative view or challenges with blended learning.

Research question 3 focused on how instructors of blended learning courses are acquiring the skills and knowledge needed to enhance practices in higher education. Survey question 7 was analyzed using descriptive statistics to determine how instructors are acquiring knowledge about blended learning. Additionally, to provide insight about the focus of blended learning needed for future training, survey question 11 was analyzed.

**Demographic Data**

At the beginning of each questionnaire, demographic information was collected. This information was utilized to complete a comparative analysis of responses in the survey. Descriptive data were reported for the following demographic variables: years teaching higher education, number of courses taught per year (on average), course level, discipline area, and size of organization. The respondents also indicated the course level on which they would focus when responding to the survey.
Table 10

*Demographic Data*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Years Teaching Higher Education (Years)</td>
<td>61</td>
<td>10.11</td>
<td>0.5</td>
<td>45.0</td>
<td>8.49</td>
</tr>
<tr>
<td>Number of Courses Taught Per Year</td>
<td>61</td>
<td>05.82</td>
<td>1.0</td>
<td>12.0</td>
<td>3.20</td>
</tr>
</tbody>
</table>

Table 2 represents the descriptive statistics for number of years taught and number of courses taught. The average number of years teaching higher education was 10.11. The respondent with the lowest number of years teaching was 0.5 years, and the highest rate was 45 years. Data reflected a standard deviation of 8.49.

Based on results from the survey, the average number of courses taught per year was 5.82. The minimum number of courses taught was one, and the maximum was 12. There was a 3.20 standard deviation. The table below provides an overview of data collected with descriptive categories identified.
Table 11

*Level Taught and Demographic Discipline*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level Taught</td>
<td>Undergraduate</td>
<td>22</td>
<td>36.07%</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>30</td>
<td>49.18%</td>
</tr>
<tr>
<td></td>
<td>Post Graduate</td>
<td>5</td>
<td>8.20%</td>
</tr>
<tr>
<td></td>
<td>Technical/Other</td>
<td>4</td>
<td>6.56%</td>
</tr>
<tr>
<td>Discipline</td>
<td>Education</td>
<td>25</td>
<td>41.00%</td>
</tr>
<tr>
<td></td>
<td>Business</td>
<td>12</td>
<td>19.70%</td>
</tr>
<tr>
<td></td>
<td>Psychology</td>
<td>15</td>
<td>24.6%</td>
</tr>
<tr>
<td></td>
<td>Criminal Justice</td>
<td>3</td>
<td>4.90%</td>
</tr>
<tr>
<td></td>
<td>Health Care</td>
<td>1</td>
<td>1.60%</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>4</td>
<td>6.60%</td>
</tr>
<tr>
<td></td>
<td>Political Science</td>
<td>1</td>
<td>1.60%</td>
</tr>
</tbody>
</table>

Table 11 *Level Taught and Demographic Data* described the level of instruction primarily taught by the respondents as well as the academic area they teach.

The respondents were asked to select a focus level of instruction. This allowed instructors of different levels to identify the level of instruction on which they focused for the survey. Respondents were not limited to answering one survey; therefore, they may have responded multiple times based on the different levels taught. Table 13, Focus Level and Teach Level, provides a correlation between these two variables.
The respondents were asked to identify the size of the organization. Table 12 identifies the different size categories of the institutions based on the student population.

Table 12
Size of the Organization Represented in the Study (Based on Student Population)

<table>
<thead>
<tr>
<th>Size</th>
<th>Percent</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 100</td>
<td>4.92%</td>
<td>3</td>
</tr>
<tr>
<td>101-500</td>
<td>4.92%</td>
<td>3</td>
</tr>
<tr>
<td>501-2,500</td>
<td>13.11%</td>
<td>8</td>
</tr>
<tr>
<td>2,501-5,000</td>
<td>11.48%</td>
<td>7</td>
</tr>
<tr>
<td>5,001-10,000</td>
<td>19.67%</td>
<td>12</td>
</tr>
<tr>
<td>10,001-50,000</td>
<td>31.15%</td>
<td>19</td>
</tr>
<tr>
<td>More than 50,000</td>
<td>3.28%</td>
<td>2</td>
</tr>
<tr>
<td>Not sure</td>
<td>11.48%</td>
<td>7</td>
</tr>
</tbody>
</table>

Minimum 1.00
Median 5.00
Mean 5.00
Standard Deviation 1.83

Note. The participants’ demographic information was transformed into numerical values. 1=Under 100, 2=101-500, 3=501-2,500, 4=2,501-5,000, 5=5,001-10,000, 6=10,001-50,000, 7=More than 50,000, 8=Not Sure

Based on the data collected in the survey about the size of the organization, the mean distribution was between 5,001 and 10,000 students. The standard deviation of 1.83 indicated that the highest response rate included institutions with students between 2,501 and 50,000 students. The highest rate of respondents was from institutions with 10,001-50,000 students.
The lowest rate of respondents was from institutions of more than 50,000 students. Of the responses, 11.48% indicated that they were not sure of the size of the institution.

Table 13

Comparison of Level Taught and Focus Level for Survey

<table>
<thead>
<tr>
<th>Level</th>
<th>% Taught</th>
<th>% Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35.59%</td>
<td>35.00%</td>
</tr>
<tr>
<td>2</td>
<td>49.15%</td>
<td>51.67%</td>
</tr>
<tr>
<td>3</td>
<td>8.47%</td>
<td>8.33%</td>
</tr>
<tr>
<td>4</td>
<td>6.78%</td>
<td>5.00%</td>
</tr>
</tbody>
</table>

Note: The participants’ demographic information was transformed into numerical values. 1=Undergraduate, 2=Graduate, 3=Post-Graduate, 4=Technical/Other

Based on the results, there was not a high rate of difference in respondents’ level taught and focus area for survey in undergraduate and postgraduate levels. There was a slight increase in focus for graduate levels and a slight decline in technical/other.

Quantitative Results

In this section, quantitative results will be discussed. Descriptive statistics were used in reporting and analyzing the results of the nationally distributed, anonymous survey. Standard deviation is a dispersion index that will measure variability in this study (Huck, 2012). Data collected from the survey were downloaded to SPSS Version 24.0 for data analysis.

Research Question 1

How do instructors rate the quality of the educational experience in their blended courses
compared to the face-to-face format? To answer this question, the null hypothesis, which stated
that instructors do not rate the quality of the educational experience in their blended learning
courses as somewhat superior or superior compared to the traditional face-to-face format of
instruction, was tested.

Table 14
Rate Educational Experience with Cumulative Sums

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Sums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inferior</td>
<td>1</td>
<td>1.6</td>
<td>Inferior and</td>
</tr>
<tr>
<td>Somewhat Inferior</td>
<td>7</td>
<td>11.5</td>
<td>Somewhat Infer</td>
</tr>
<tr>
<td>Same</td>
<td>18</td>
<td>29.5</td>
<td></td>
</tr>
<tr>
<td>Somewhat Superior</td>
<td>30</td>
<td>49.2</td>
<td>Somewhat Superior and Superior</td>
</tr>
<tr>
<td>Superior</td>
<td>5</td>
<td>8.2</td>
<td>57.4</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Maximum</th>
<th>Median</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>5.00</td>
<td>4.00</td>
<td>3.46</td>
<td>0.88</td>
</tr>
</tbody>
</table>

Note. The participants’ rating was transformed into numerical values. Superior=5, Somewhat Superior=4, Same=3, Somewhat Inferior=2, Inferior=1

Based on the preliminary review of data, 57.4% of instructors rated blended learning as
superior or somewhat superior to traditional instruction. Of the respondents, 29.5% rated
blended learning as the same as traditional methods. Blended learning was rated as somewhat
inferior or inferior by 13.1% of the respondents. The most commonly occurring value of the data
set (Mode) was 4 (somewhat superior). The mean was 3.46, which was midway between a
rating of same and somewhat superior.
Table 15

Rate Educational Experience by Rating

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inferior</td>
<td>1</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Somewhat Inferior</td>
<td>7</td>
<td>11.5</td>
<td>11.5</td>
<td>13.1</td>
</tr>
<tr>
<td>Same</td>
<td>18</td>
<td>29.5</td>
<td>29.5</td>
<td>42.6</td>
</tr>
<tr>
<td>Somewhat Superior</td>
<td>30</td>
<td>49.2</td>
<td>49.2</td>
<td>91.8</td>
</tr>
<tr>
<td>Superior</td>
<td>5</td>
<td>8.2</td>
<td>8.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The t-test used distribution of sample means to determine if significant differences existed between mean scores (De Winter, 2013). The t-test was selected to gain further insight to see if there was a difference between instructors’ ratings of blended learning and instructor rating of how much they interact with students in this learning format compared to traditional courses. This helped determine whether significant differences existed between the instructor rating and interaction with students in blended learning courses.

Table 16

One-Sample Statistics Comparing Rate and Experience

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate Educational Experience</td>
<td>61</td>
<td>3.51</td>
<td>.868</td>
<td>.111</td>
</tr>
<tr>
<td>Rate Interactions</td>
<td>61</td>
<td>3.38</td>
<td>.969</td>
<td>.124</td>
</tr>
</tbody>
</table>
The two-tailed $P$ value equals 0.4366. By conventional criteria, this difference is considered not to be statistically significant. The mean of Rating minus Interaction equals 0.13000. The 95% confidence interval of this difference is from -0.19979 to 0.45979. The means of the instructors’ rating of their educational experience and interactions with students in blended learning are consistent without significant variance.

For higher education institutions to make decisions about the strategic design of blended learning, the instructors’ beliefs about this learning format needs further exploration. This research reviewed instructor rating about interactions with students in a blended learning course. Instructor beliefs about blended learning provided additional insight that could help guide institutions in the process of developing necessary implementation strategies and improve pedagogy. Instructors rated the interactions with students using a Likert scale.

Table 17

<table>
<thead>
<tr>
<th>Rating on Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Much Less</td>
</tr>
<tr>
<td>Less</td>
</tr>
<tr>
<td>Same</td>
</tr>
<tr>
<td>More</td>
</tr>
<tr>
<td>Much More</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Based on the preliminary review of data, 49.1% of instructors rated interaction with students as more or much more compared to traditional class format. Of the respondents, 18.0% rated the interaction with students as less or much less compared to interactions within traditional class. The figure below highlights the instructor ratings about their interaction with students in blended classes.

Figure 3
*Interaction Rating.*

Figure 3. This figure illustrates the instructor rating of blended learning.

In order to understand instructor ratings of blended learning further, the responses to the survey question about beliefs towards blended learning were examined. Respondents were asked to select three responses that applied to their beliefs about blended learning.
Table 18  
*Instructor Beliefs about Blended Learning*  

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>More effective than traditional classroom instruction</td>
<td>22</td>
<td>48.9</td>
</tr>
<tr>
<td>Less effective than traditional classroom instruction</td>
<td>3</td>
<td>6.7</td>
</tr>
<tr>
<td>Learners like it</td>
<td>46</td>
<td>80.0</td>
</tr>
<tr>
<td>Learners don't like it</td>
<td>3</td>
<td>6.7</td>
</tr>
<tr>
<td>Learners aren't even aware they are participating in Blended Learning</td>
<td>8</td>
<td>17.8</td>
</tr>
<tr>
<td>Takes less time to develop than a non-blended program</td>
<td>3</td>
<td>6.7</td>
</tr>
<tr>
<td>Takes longer to develop than a non-blended program</td>
<td>28</td>
<td>62.2</td>
</tr>
<tr>
<td>It's more difficult to administer a Blended Learning program</td>
<td>12</td>
<td>26.7</td>
</tr>
<tr>
<td>Sum</td>
<td>125</td>
<td>255.6</td>
</tr>
</tbody>
</table>

As demonstrated in the table above, the instructors selected a total of 125 different responses (n=125) to respond to this survey question. Of the responses, 80.0% revealed that instructors believed that learners like blended learning courses, 62.2% reported that blended learning takes longer to develop, and 48.9% felt that this format is more effective than traditional classrooms. Only 6.7% felt that learners do not like blended learning formats and that blended learning is less effective than traditional formats of instruction.
Figure 4. This figure shows the respondents selections about their beliefs towards blended learning.

Respondents were asked to identify which of the following apply to your experience teaching blended learning. This question allowed for multiple responses. Based on the survey results, 46 of the instructors feel that learners like blended learning. From the survey, 22 of the responses felt that blended learning was more effective than traditional classroom instruction. Since this question allowed for multiple responses, the data was also converted to percentages based on number of choices selected (N-125). As depicted in the Chart #, 36.8% of the total responses indicated that learners like blended learning. Of the responses, 22.4% indicated that blended learning takes longer to develop than traditional courses. Additionally, 17.6% revealed that blended learning is more effective than traditional courses. Only 2.4% felt learners did not like this approach and 2.4% felt it was less effective than traditional approaches.
The respondents were asked to identify one of the criteria provided which was used to measure effectiveness of blended learning courses. The Table *Effectiveness Rating* shows that 50.8% of instructors use the course objectives to determine the effectiveness of blended learning. Of the responses, 23.0% measured the benefits of the course by how learners expanded their learning in response to the instruction received. Of these instructors, 18.0% measured how students transferred new learning to determine course efficacy. Course evaluations were the least identified way that instructors measured the success of the course (3.3%, n=2).

In response to Research Question 1, 57.4% of instructors rated the quality of the educational experience in their blended courses compared to the face-to-face format as superior or more than superior. Similarly, 49.1% of Instructions feel they have more or much more interaction with students in blended learning courses. Additional confirmation was provided in the instructors beliefs about blended learning. Of the responses, 80.0% selected reported that

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Learning Experience</td>
<td>3</td>
<td>4.9</td>
</tr>
<tr>
<td>Met Course Objectives</td>
<td>31</td>
<td>50.8</td>
</tr>
<tr>
<td>Transferred New Learning</td>
<td>11</td>
<td>18.0</td>
</tr>
<tr>
<td>Expanded Learning</td>
<td>14</td>
<td>23.0</td>
</tr>
<tr>
<td>Course Evaluations</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td></td>
<td>61</td>
<td>100.0</td>
</tr>
</tbody>
</table>
“learners like (blended learning)” and 48.9% of the responses indicated that it is “more effective than traditional learning”. Instructors rated the effectiveness of the blended learning course through course objectives (50.8%, N=31). In response to research question 1, instructors rate the quality of the educational experience in their blended courses as superior or very superior to traditional face-to-face instruction.

**Research Question 2**

Research Question 2 asks, “What do instructors consider barriers to the growth and effectiveness of the blended learning environment in higher education?” Table 20 *Barriers in Blended Learning* represents a descriptive analysis of the identified barriers to the growth and effectiveness of blended learning.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Needed</td>
<td>24</td>
<td>39.3</td>
</tr>
<tr>
<td>Quality of Technology</td>
<td>25</td>
<td>41.0</td>
</tr>
<tr>
<td>Low Student Retention</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>Lack of Faculty Acceptance</td>
<td>14</td>
<td>23.0</td>
</tr>
<tr>
<td>Lack of Training</td>
<td>37</td>
<td>60.7</td>
</tr>
<tr>
<td>Lack of Strategic Plan</td>
<td>14</td>
<td>23.0</td>
</tr>
<tr>
<td>Lack of Collaboration</td>
<td>20</td>
<td>32.8</td>
</tr>
<tr>
<td>Lack of Shared Resources</td>
<td>11</td>
<td>18.0</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------</td>
<td>------------</td>
</tr>
<tr>
<td>Student Discipline</td>
<td>3</td>
<td>4.9</td>
</tr>
<tr>
<td>Student Motivation</td>
<td>4</td>
<td>6.6</td>
</tr>
<tr>
<td>Learning Management System</td>
<td>7</td>
<td>11.5</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>4.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>164</td>
<td></td>
</tr>
</tbody>
</table>

The descriptive frequency table shows the number of times each barrier was selected and the corresponding percentage. Based on a preliminary review of the data, 60.7% of the respondents identified lack of training to be a barrier in the implementation of blended learning courses. Of the respondents, 41% identified quality of technology to be a barrier and 39.3% selected time needed to develop blended learning courses as a challenge. Barriers that involved the student learner were consistently the least frequently selected with percentage ranges from 3.3-6.6%.
Figure 5. This figure depicts the respondents’ selections of barriers in blended learning.

Respondents were asked to identify barriers to blended learning. This question allowed multiple responses. Therefore, the data was also converted to percentages based on number of choices selected (N=164). As depicted in the Figure 5, 23.7% of the instructors identified lack of training as a barrier to blended learning. Out of a total of 164 selections of barriers, this category was selected 37 times. Of the instructors, 15.5% felt the quality of technology was a barrier to blended learning. Similarly, 14.9% of responses identified time need to develop blended learning courses to be a barrier. Lack of collaboration amongst instructors was identified to be a barrier by 12.4% of responses. Only 2.9% of the responses focused on student motivation as
being a barrier and 1.9% considered student discipline to be a challenge that affected blended learning.

Table 21
*Individual Barriers and Theme*

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Technology</th>
<th>Student</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Needed</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Quality of Technology</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Student Retention</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Lack of Faculty Acceptance</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Lack of Training</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Lack of Strategic Planning</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Lack of Collaboration</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Lack of Shared Resources</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Student Discipline</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Student Motivation</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Learning Management System</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the data collected, barriers in blended learning were categorized into three themes: technology, students, and implementation. Technology included quality and learning management system. Students included low student retention, student discipline, and student
motivation. Implementation included time needed, lack of faculty acceptance, lack of training, lack of strategic plan, lack of collaboration, and lack of shared resources.

Table 22

<table>
<thead>
<tr>
<th>Theme</th>
<th>N</th>
<th>Theme by %</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>32</td>
<td>18%</td>
<td>19.9%</td>
</tr>
<tr>
<td>Student</td>
<td>9</td>
<td>27%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Implementation</td>
<td>120</td>
<td>55%</td>
<td>74.5%</td>
</tr>
<tr>
<td>Total</td>
<td>161</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

To identify which barriers existed in blended learning courses, themes were organized by technology, students, and implementation. Implementation barriers were identified by 74.6% of the responses and considered significantly higher than technology and student themes.
Table 23

*Frequency Table of Barriers by Theme*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Percent (%)</th>
<th>95% Confidence Interval (+/-12.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>19.9</td>
<td>7.4-32.4</td>
</tr>
<tr>
<td>Student</td>
<td>5.6</td>
<td>&gt;1-18.1</td>
</tr>
<tr>
<td>Implementation</td>
<td>74.5</td>
<td>62.0-87.0</td>
</tr>
</tbody>
</table>

The total population size of professors who teach blended learning courses could not be obtained. The base population of 10,000 was used to determine the confidence interval. The survey system population size is an estimate. The confidence interval assumes that there is a genuine purposive sample of the relevant population. The margin of error for this study was +/-12.5. This formula was applied as an indicator to determine how the results of the survey data could be interpreted with 95% confidence. With 95% confidence, the implementation of blended learning courses was identified as a barrier by 62.0-87.0 (%) of the population. There was minimal impact of the student learner on the implementation of blended learning >1-18.1 (%). Less than 50% of the population surveyed felt technology was a barrier (7.4-32.4%).

To gain more insight into how the respondents blend their courses, a survey question asked the instructors to select the format used in these classes.

Table 24

*Format of Blended Instruction*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face to Face</td>
<td>1</td>
<td>1.6</td>
<td>3.3</td>
</tr>
</tbody>
</table>
Instructors (n=34, 55.7%) design blended learning courses with an equal mix of online and face-to-face instruction. Of the instructors 31.1% (n=19) supplement face-to-face instruction with online resources. With 95% confidence, instructors consider implementation of blended learning to be a barrier to the growth and effectiveness of blended learning environment in higher education. The underlying factors identified were the amount of time it takes to implement blended learning courses. Instructors felt there was a lack of shared resources and collaboration at the institution level. Additionally, institutions are implementing blended learning without sufficient training and strategic planning. These factors all affect the implementation and create barriers to blended learning.

In the survey, instructors were asked to select options that applied to their experience with blended learning. Two items that could be selected indicating possible barriers were, “It's more difficult to administer a Blended Learning program” and “Takes longer to develop than a non-blended program.” Based on the analysis of the survey question, 36 respondents (59%) selected that blended learning takes more time to administer compared to a traditional course. There were 15 respondents who selected blended learning is difficult to administer (24.6%).
Therefore, additional data supports that the amount of time it takes to administer a course and the complexity of blended learning instruction are also contributing barriers.

Research Question 3

Research Question 3 asks, “How are instructors acquiring the knowledge and skills they need to develop and implement blended learning courses to enhance the quality of educational experience?”

Table 25

<table>
<thead>
<tr>
<th>Knowledge of Blended Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Informal Learning Situations</td>
</tr>
<tr>
<td>Learning by Performing</td>
</tr>
<tr>
<td>Formal Education Programs</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Based on a descriptive analysis, to develop skills and knowledge of blended learning, 59.0% of instructors engaged in informal learning situations (either intentional or accidental) comprising interactions with peers or management or subject matter experts or observations and/or personal investigation into the subject such as reading or free webinars or attending conferences. Of the instructors, 29.5% learn by performing the knowledge or skills or attitudes and/or behaviors in on-the-job situations with the potential of real performance consequences. Of the respondents, 11.5% learn about blended learning through formal education programs
and/or systems where learning objectives have been established and published and in which knowledge or skill is acquired in activities or exercises.

Table 26  
*New Knowledge*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent (%)</th>
<th>95% Confidence Interval (+/-12.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal Learning Situations</td>
<td>59.0</td>
<td>46.5-71.5</td>
</tr>
<tr>
<td>Learning by Performing</td>
<td>29.5</td>
<td>16.5-41.5</td>
</tr>
<tr>
<td>Formal Education Programs</td>
<td>11.5</td>
<td>&gt;1-24.0</td>
</tr>
</tbody>
</table>

The confidence interval assumes that there is a genuine purposive sample of the relevant population. The margin of error for this study was +/-12.5. This formula was applied as an indicator to determine how the results of the survey data can be interpreted with 95% confidence. With 95% confidence, new knowledge about blended learning was obtained through informal learning opportunities by 46.5-71.5 (%) of the population. Blended learning was learned through formal opportunities by >1-24.0 (%). Less than 50% of the population surveyed learned about blended learning by performing (16.5-41.5%). Based on the interpretation of this data, a majority of the population learn through informal opportunities. To gain further insight into professional development needs, instructors were asked to identify different areas of focus needed to learn about blended learning.
Table 27
*Professional Development Needs*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing and Developing BL</td>
<td>26</td>
<td>42.6</td>
<td>42.6</td>
<td>42.6</td>
</tr>
<tr>
<td>Developing BL Strategy</td>
<td>7</td>
<td>11.5</td>
<td>11.5</td>
<td>54.1</td>
</tr>
<tr>
<td>Deploying and Using Tools</td>
<td>12</td>
<td>19.7</td>
<td>19.7</td>
<td>73.8</td>
</tr>
<tr>
<td>Addressing Learner</td>
<td>1</td>
<td>1.6</td>
<td>1.6</td>
<td>75.4</td>
</tr>
<tr>
<td>Managing and Measuring BL</td>
<td>1</td>
<td>1.6</td>
<td>1.6</td>
<td>77.0</td>
</tr>
<tr>
<td>Increasing Technology Capabilities</td>
<td>4</td>
<td>6.6</td>
<td>6.6</td>
<td>83.6</td>
</tr>
<tr>
<td>Collaboration with Colleagues</td>
<td>1</td>
<td>1.6</td>
<td>1.6</td>
<td>85.2</td>
</tr>
<tr>
<td>BL Theories</td>
<td>9</td>
<td>14.8</td>
<td>14.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

To gain further insight into the professional development needs of instructors utilizing blended learning instruction, the respondents were asked to identify one area of focus that would enhance these practices. Based on this descriptive analysis, 42.6% of the respondents felt learning about designing and developing blended learning courses would be beneficial. Of the respondents, 19.7% felt it would be essential to learn more about deploying and using the
technology tools to teach blended learning courses. Of the population, 14.8% felt it would be beneficial to learn about blended learning theories.

**Summary**

Chapter Four detailed the contents and structure of this research study by including data presentation and results of the current quantitative study, *Blended Learning: Beyond the Thread*. This chapter also further clarified the demographics of the participants, analysis, and organization of data, and results. The study used descriptive statistics to answer the research questions. The modified survey focused on blended learning was utilized to assess instructor ratings, beliefs, perceived barriers, and professional development experiences in higher education. The study measured the variables of disciplines taught, level of instruction provided, size of institution and experience teaching blended learning courses. The uses of the research design and methodology provided the basis to answer the research questions and test hypotheses as described in Chapter 3.

The survey responses of 61 instructors were used to analyze instructors’ beliefs about blended learning, barriers to blended learning, and instructors’ training for blended learning. The t-test used distribution of sample means to determine if significant differences existed between mean scores (De Winter, 2013). The t-test was selected to gain further insight to see if there was a difference between instructors’ ratings of blended learning and instructor rating of how much they interact with students in this learning format compared to traditional courses. This helped determine whether significant differences existed between the instructor rating and interaction with students in blended learning courses.
In response to Research Question One, 57.4% of instructors rated the quality of the educational experience in their blended courses compared to the face-to-face format as superior or more than superior. Similarly, 49.1% of instructors feel they have more or much more interaction with students in blended learning courses. Additional confirmation was provided in the instructors’ beliefs about blended learning. Of the responses, 80.0% reported that “learners like [blended learning]” and 48.9% of the responses indicated that it is “more effective than traditional learning”.

With 95% confidence, instructors consider implementation of blended learning to be a barrier to the growth and effectiveness of blended learning environment in higher education. The underlying factors identified were the amount of time it takes to implement blended learning courses. Instructors felt there was a lack of shared resources and collaboration at the institution level. Additionally, institutions are implementing blended learning without sufficient training and strategic planning. These factors all affect the implementation and create barriers to blended learning.

With 95% confidence, new knowledge about blended learning was obtained through informal learning opportunities by 46.5-71.5% of the population. Blended learning was learned through formal opportunities by >1-24.0%. Less than 50% of the population surveyed learned about blended learning by performing (16.5-41.5%). Based on the interpretation of this data, a majority of the population learn through informal opportunities. To gain further insight into professional development needs, instructors were asked to identify different areas of focus needed to learn about blended learning. Based on this descriptive analysis, 42.6% of the
respondents felt learning about designing and developing blended learning courses would be beneficial.

Chapter Five will include the interpretation of the findings, study generalizations, limitations, the implication of the study to leadership, recommendations for future actions and studies, summary and conclusions. Additional information will be discussed to include open-ended responses as included on the survey.
Chapter Five: Discussions, Conclusions, and Recommendations

Introduction

This chapter includes a purpose of the study, a discussion of the findings, implications for blended learning in higher education, recommendations for further research, and conclusions. A summary and discussion of the findings is organized around the research questions. In Chapter Four, the results for data collected from the sample population who participated in the study by responding to a survey were discussed through descriptive statistics. In this chapter, the findings obtained from the data are discussed with recommendations for further research. Each research question is analyzed and discussed separately. The final section includes implications and recommendations for future research with regard to the blended learning in higher education.

Purpose of the Study

The purpose of this quantitative methodology research study was to examine how instructors rate their experiences in blended learning courses, barriers of blended learning, and how skills are acquired to develop and implement blended learning courses. This research does not examine specific learning formats or types of technology used in blended learning courses. Rather, through this purposive national research, different patterns and trends were identified that expand across institutions despite demographic differences. Through this research, it is evident that barriers exist due to lack of instructor training in blended learning approaches, implementation, and shared visions. Additionally, there was the opportunity to review patterns and trends in developing blended courses that promote quality higher education instruction. This
chapter will find closure to the study as it relates to current literature and research. Implications of the research will also be discussed, together with recommendations that were derived from an analysis and interpretation of the data.

The problem that launched the need for this study was a desire on the part of the Researcher to gain greater insight into the implementation of blended learning classes in higher education. The researcher aimed to uncover if, after more than a decade of this learning format, there have been increased effectiveness, removal of barriers, and professional development to enhance these practices. Additionally, the focus was to determine if the blended learning format provided an educational environment that has enhanced traditional practices in the digital world. This research uncovered the beliefs of professors, presenting barriers, and professional development approaches to enhance practices. Increased understanding and enhancement of this approach must be examined to ensure that practices are implemented with fidelity and the true potential of this teaching approach is achieved.

As institutional leaders and instructors must take steps in improving blended learning practices, identifying, and understanding the benefits and barriers to this approach create a framework in which to produce change. This will also help guide common visions and strategic planning to implement blended learning courses and support instructors in maximizing the true potential of this approach. This study focused on the existing beliefs, barriers, and professional development from the perspective of instructors who taught at least one blended learning course. From this study, areas were identified that continue need to enhance practices in higher
education. With this knowledge, future planning and development are important, as they are essential to continuing on a trajectory of improved practices.

The questions addressed in this study were to determine how instructors rate the quality of the educational experience in their blended courses compared to the face-to-face format. Additional focus was on what are considered barriers to the growth and effectiveness of blended learning environment in higher education. Finally, the study reviewed how instructors are acquiring the knowledge and skills they need to develop and implement blended learning courses.

**Discussions of the Research Results**

Based on this research, the following conclusions were drawn. First, it was concluded that instructors rate the quality of the educational experience in their blended learning courses as superior or very superior compared to the traditional face-to-face format of instruction. Additionally, instructors identified lack of professional development and training as the primary barrier to the growth and effectiveness of the blended learning environment in higher education. Finally, instructors primarily engage in informal learning situations (either intentional or accidental) comprised of interactions with peers or management of subject matter experts or observations and/or personal investigation into the subject, such as reading, free webinars or attending conferences to develop skills and knowledge to implement blended learning courses.
Research Question 1: Quality of Education

Research Question 1 asked, “How do instructors rate the quality of the educational experience in their blended courses compared to the face-to-face format?” The survey asked different questions to obtain input from instructors about how they rated the overall educational experience in blended learning courses. The response was reported using a Likert scale (1-5) rating. Instructors (57.4%) rated blended learning as superior (4) or somewhat superior (5) to traditional instruction. The most commonly occurring value of the data set (Mode) was 4 (somewhat superior). It was concluded that instructors rate the quality of the educational experience in their blended learning courses as superior or very superior compared to the traditional face-to-face format of instruction.

Overall, the initial question revealed that instructors rate blended learning courses as somewhat superior or superior compared to traditional courses. There was a connection to instructor rating of the interactions with students in blended learning as being more or much more in blended learning courses. The results were interesting to the Researcher to find that instructors felt that students interacted more in blended learning courses in which their face to face time was somewhat replaced with virtual learning. Findings supported that although traditional teaching allows for teaching within the same physical space, the online portion of blended learning allows for more student interaction and higher level of engagement. These findings were found consistent with Garrison and Vaughan (2008), and it was concluded that teaching presence is the connection that helps sustain a community of inquiry when students are shifting between traditional learning and computer mediated communication (blended learning).
The means of the instructors’ ratings of their educational experience and interactions with students in blended learning are consistent without significant variance. Therefore, it is concluded that instructors rate blended learning as a better platform of teaching and allows for higher levels of interaction with students.

To provide further insight into instructor beliefs about blended learning, instructors were asked to select three responses that applied to their beliefs about blended learning. Of the responses, a majority of instructors believed that learners like blended learning courses. It was also revealed that a majority of instructors reported that blended learning takes longer to develop, and almost half of the respondents felt that this format is more effective than traditional classrooms. An examination of the literature on blended learning in higher education revealed advantages for students and faculty. These considerations were discussed throughout the literature review to gain further insight into current practices, research, and gaps in what is known about blended learning practices.

This current study is consistent with the findings of Bonk and Graham (2006) and determined that the level of interaction and communication surpass traditional methods of teaching. Often, there are students in a class who do not willingly participate or tend to dominate the conversation. This format allows for a balance of those personalities in the online format.

It is hypothesized that instructors need more training and focus on the pedagogical and foundational theories of blended learning to understand the principles and underlying factors that enhance this shift. This research did not assess instructor knowledge based on the application of theories that align to blended learning, but there was a question that allowed the respondents to
identify theories as an area to gain more training. While the instructors were asked to identify an area of most need for blended learning, the highest response was to get training in the development and implementation. In order to successfully design and implement blended learning courses, it is essential to have the foundational knowledge about theoretical frameworks. Through application of these theories in this process, engagement and learning may be enhanced in blended learning courses.

Another factor of consideration in this study was to determine how instructors determine that blended learning practices are effective. Based on this study, more than half of the instructors rated the effectiveness of the blended learning course through meeting course objectives. It is interesting to note that course evaluations were the least identified way that instructors measured the success of blended learning courses. Instructors of blended learning are primarily reviewing course objectives to determine if the course and learning were successful. Through a review of literature, there are mixed findings and suggestions on how to rate course effectiveness.

**Research Question 2: Barriers to Blended Learning**

Research Question 2 asked, “What do instructors consider barriers to the growth and effectiveness of the blended learning environment in higher education?” Of the instructors that responded to the survey, a majority identified lack of training to be a barrier in the implementation of blended learning courses. Barriers were categorized into three themes: technology, students, and implementation. Implementation barriers were identified by a majority of the responses and considered significantly higher than technology and student themes. With
confidence, it is reported that instructors consider implementation of blended learning to be a barrier in the blended learning environment in higher education. The instructors were able to identify barriers to blended learning in higher education.

For the purpose of this study, the implementation theme included the amount of time it takes to develop and design blended learning courses. Instructors also identified that there is an overall lack of shared resources and collaboration at the institution level. Additionally, institutions are implementing blended learning without sufficient training and strategic planning. These factors all affect the implementation and create barriers to blended learning. These findings are in alignment with literature.

It was of interest that the technology component was not identified as a significant barrier to blended learning. From a simplified lens, technology is the added component to this learning format. It was assumed that technology would be seen as a barrier. However, as technology was identified by less of the respondents, instructors expressed more concern and challenges with the implementation process. Less than 12% of the instructors identified the learning management system as a barrier. About 40% of the respondents identified quality of technology as a barrier. However, over 60% of the instructors identified lack of professional development as a challenge to successful implementation and delivery of blended learning courses.

This study revealed that instructors identified barriers that exist because of the lack of shared resources, lack of collaboration, and undeveloped strategic plan to implement these courses. As per Ocak (2011), research supports the findings in this research and states that instructors need additional support and resources. Collaborative learning principles have
provided decades of understanding to enhance teaching in higher education (Garrison & Cleveland-Innes, 2014). However, these guiding principles need to be further examined to align with blended learning approaches and implementation. Additional findings and research have reviewed the instructional format and the benefits of creating a blended learning course that is enhanced through the online components.

**Research Question 3: Professional Development**

The third research question examined how instructors are acquiring the knowledge and skills they need to develop and implement blended learning courses to enhance the quality of educational experience. Data from the survey questions about barriers also aligned to answer this question, as the most identified barrier was lack of professional development. Instructors identified informal learning as their primary way of learning and growing professionally to enhance blended learning courses in higher education.

Over 50% of the instructors responded that they engage in informal learning situations (either intentional or accidental) comprising of interactions with peers or management of subject matter experts or observations and personal investigation into the subject, such as reading, free webinars, or attending conferences. Less than 30% of the instructors learn by performing the knowledge or skills or attitudes and/or behaviors in on-the-job situations with the potential of real performance consequences. Only 11.5% of the respondents reported that they learn about blended learning through formal education programs. Based on the interpretation of this data, a majority of the population learn through informal opportunities.
Additional insight into specific professional development needs was explored. Less than 50% of the respondents felt learning about designing and developing blended learning courses would be beneficial. There is an imminent and constant need for growth through professional development that will provide instructors with the knowledge and skills to keep up with the demands of the changing and interconnected world. These findings are consistent with Theodosiadou et al. (2017); the required professional development and ongoing training is not being met. Similarly, according to a survey distributed by Organization for Economic Cooperation and Development (OECD) (2009), instructors felt they have not received a sufficient amount of training, and more than half of the respondents wanted more training than received. This research is consistent with these findings and revealed that there are barriers that prevent instructors from taking necessary professional development, and instructor education and training may not be sufficient based on past practices of professional development.

Specific barriers were identified that affected professional development in blended learning. It is essential to find a solution to these barriers by increasing opportunities to professional development while allowing flexibility and costs that are more efficient. Therefore, an effective way to the aforementioned barriers may be development of online training and professional learning opportunities on the development and implementation of blended learning courses for professors. This would allow professors to access training while allowing firsthand experience from the learner’s perspective. If professors are given the opportunity to learn about blended learning from the learner’s perspective by taking a simulation of a blended learning course, practices may improve and enhance.
Furthermore, Dukes, Waring, and Koorland (2006) found that faculty need specific knowledge, skills, and genuine interest to teach blended courses. The downfall continues to be that many of these instructors do not receive necessary training in pedagogy and technology. Additionally, there was a definite lack of interest and presumed lack of awareness about the different underlying theories for blended learning. In this study, only 14.8% of the respondents felt that professional development should be focused on the theoretical frameworks for blended learning.

In education, there are many schools of thought on the learning process through different applications of pedagogy and learning theories. However, there is not one exclusive theory used to apply to designing and implementing blended learning practices. Therefore, different combinations of theories can be employed to develop blended learning courses. The literature identified different theories that provided an underlying framework for blended learning. These theories include andragogy, constructivism, conversationalism, and community of inquiry. In a review of current research, a gap that combined practice and theoretical concepts for blended learning was evident. It is also concluded that there is a need for the theoretical understanding of blended learning related practice in education.

Figure 7 depicts the interlocking theories which support the design, implementation, and practices of blended learning. The theoretical framework, along with a focus on community, communication, and knowledge provide a model to frame instructional practices in higher education. The theory of andragogy, constructivism, conversationalism, and community of inquiry will be further explored in relation to blended learning practices.
As the blended delivery continues to be implemented as a hallmark approach in higher education, there is a continued need for professional development, course designs, shared beliefs, and effective practices. The researcher focused on blended learning for this study to gain deeper insight into the different theories, processes, and principles aligned to blended learning. Additionally, as technology is developing at a rapid pace, the blended model requires continuous enhancement of teaching through integration of technology. Professors are learning a new way of teaching as they transition from an approach of traditional teaching to blended learning models. The challenge is determining how to take solid teaching of the past and infuse it in a way to bring life to teaching in the online setting. Additionally, further thought and review needs
to be focused on policy and procedures that were developed in alignment with traditional teaching. Further consideration is needed at the institutional level about how to adapt and change such policy to reflect these practices.

As blended learning becomes universal, opportunities are also expanding in the field of research. This research is able to be utilized in higher education to gain further knowledge about the benefits of blended learning and the barrier which is due to lack of professional development. Additionally, the review of literature in this dissertation reveals that there is much information about blended learning, but there is also a lack of cohesive definition and practices, leaving many questions left unanswered. It is concluded that this field will benefit from additional research to provide a clear definition, guidelines, and professional development in key areas of theoretical framework and practices.

When instructors design and implement blended learning courses, it is necessary to make a fundamental transformation of the course. Comprehensive redesign of course instruction to transform from traditional to blended requires much time and effort. The challenge may include lack of training, comfort level and knowledge of technological application, schema of course content, and theoretical framework. When instructors implement the courses, it is necessary to think ‘beyond the thread’ and infuse learning opportunities that transition knowledge into practice. Blended learning allows for much flexibility in the learning environment, and students can be provided with different experiences that increase problem solving and exploration. This study emphasizes the value and benefit of this learning platform. Additional emphasis needs to be put into place to lift these barriers.
The overall findings of this study indicate clearly that blended learning is rated as an effective practice in higher education. A majority of instructors rated blended learning as superior or somewhat superior to traditional instruction. With this approach to teaching, instructors have identified professional development practices as a barrier to successful implementation and enhancement of this approach to teaching.

Another area of focus from this research is lack of collaboration and shared vision, and the need for strategic planning. Instructors have identified that much learning is self-directed and there is not much sharing and collaboration to enhance these practices. As institutions are implementing these courses, instructors should be included in discussions and planning to create a shared vision. In institutions of higher education, there are different levels of instructors. These shared vision and planning discussions should include all levels. Professional learning in higher education often focuses on the academic rather than pedagogy. This study supports that the greatest changes can result when instructors are given the training to determine how to change what is being taught and how it is being taught via blended learning courses. Further implications of this research indicate that collaboration should increase, and professional development opportunities should be planned to support this format of teaching.

**Recommendations and Future Research**

As a result of this research, there were different areas identified which require further discussion and need additional research to enhance practices. The three research questions revealed that instructors rate blended learning as a superior learning platform. However, there are barriers that need to be further reviewed to determine ways to enhance practices.
Specifically, professional development in higher education has been primarily available to instructors of blended learning courses through informal practices. The implementation process of blended learning is challenging, and institutions and instructors need to consider these implications to enhance practices. While blended learning is rated as an effective practice in higher education, instructors have identified areas of needed focus and development. Areas of focus are professional development, educational policy, and strategic planning in higher education. Figure 8 depicts the focus of future consideration and areas of needs for successfully implementing blended learning in higher education.

Figure 8

*Future Planning for Blended Learning*

*Strategic Planning*

Institutions may need to develop a strategic plan that includes the key stakeholders (instructors of blended learning) in the decision making process. As in any discipline, including these stakeholders in the process will increase engagement and helps build commitment to the end plan. The instructors of blended learning courses can provide insight into issues, challenges,
concerns, and opportunities that may not have been fully understood. It is evident that a majority of the instructors surveyed felt that learners enjoyed blended learning. Therefore, this is a proven practice that will continue to be implemented and needs further focus on the development and implemental stages of this process.

As with any educational institution, it is essential to align initiatives with an institution’s mission. This alignment creates a rationale for ensuring that resources are allocated, and the focus of the mission is aligned to during this planning process. In order for blended learning to be effective and sustainable, the strategy and plan must be clearly defined and planned. As part of this process, institutions can engage faculty in a professional community to engage in course design while increasing overall collaboration. By creating a learning group of instructors with a shared professional mission, they can engage in the design and building of blended courses through a common vision.

The existing research and review of trends indicates that blended learning is a growing practice and focus in higher education learning settings. Given this significant implementation of blended learning practices in higher education, it is important to create strategic implementation and development plans. There is a need to focus on pedagogy, professional development, policy, and technology that will be used in these blended environments. Although learning management systems (LMS) have increased rapidly and provide the foundation for the rapid increase in online learning enrollments during the past decade, the learning management systems are ways to organize assignments and learners through administrative tasks. There should be increased focus and research on the ways to promote engaging, interactive learning
experiences aligned to the philosophy of andragogy. Further research is needed into the pedagogical techniques that are embedded within blended learning designs and how those techniques could have implications for the design and implementation of blended learning. Additional discussion is needed to center on active learning, problem solving, authentic learning, and collaboration in blended learning courses.

With the initial development of blended learning, the primary functions and benefits have been viewed as a replacement to face-to-face learning. Additionally, this has become increasingly popular due to the reduced travel time and time away from home. Further research can address how blended learning can be used to foster learning communities, extend training and professional development, offer follow-up and accessible resources, provide timely feedback, and deliver pre-work or supplemental course materials. As blended learning moves into another decade of extensive use in higher education, the forms and formats of blended learning need further research and development.

**Professional Development**

In the area of skill development, it is important to note that many participants identified the lack of professional development to be a barrier to blended learning in higher education. Based on the data collected, barriers in blended learning were categorized into three themes: technology, students, and implementation. The implementation barriers far exceeded the other barriers. Implementation included time needed, lack of faculty acceptance, lack of training, lack of strategic planning, lack of collaboration, and lack of shared resources.
This may suggest that the implications of this research could be critical if working with higher education instructors and focusing on the approaches to professional development. Professional learning in this setting could be offered in a faux blended setting in which instructors are engaging in the course as the learners. The model lessons and assignments could be designed to allow opportunities for instructors to collaborate on the different learning theories utilized to enhance practices.

Additionally, it was evident that through different questions, instructors identified professional development as an area of need to be enhanced as well as a barrier to blended learning. A majority of the respondents reported that they engage in informal learning situations (either intentional or accidental) comprised of interactions with peers or management or subject matter experts or observations and/or personal investigation. Faculty are generally not well versed in designing and facilitating interactive online learning activities aligned to the different theoretical frameworks of blended learning (Brooks & Pomerantz, 2017).

Instructors also identified interest in professional development about the design and development of blended learning courses. Initially, this the topic of blended learning was explored as an isolated research question; however, it was connected to identify future needs and barriers. Implications suggest that if professional development related to the design and development of blended learning courses was offered, the instructors would find this valuable. Other relevant and identified areas for professional development included learning more about the technological components of the learning management system and blended learning theories.
Purposeful and exploration research into instructor preparation is needed to identify practices that are at the forefront of innovation and that prepare professionals to instruct in blended environments. Most literature on professional development for higher education instructors is informal and academic professional development appears to be regarded as supplementary. Faculty tend to equate continued professional learning through research in their discipline. As evident in this research, most professional development is informal and does not appear to be a continuous expectation in higher education. However, instructors identified a need for a more cohesive plan for implementation, and professional development in blended learning is needed to enhance this area of instruction. Additionally, much professional development is focused on delivering instruction rather than creating a learning opportunity that simulates a blended learning format. This type of authentic learning may provide additional insight into the design and implementation of courses. Future research should focus on how blended learning professional development is delivered. There are different models being adopted that can be researched to determine the most effective approaches and key concepts to be addressed.

As blended learning is an evolving practice in higher education, instructors need to learn about the theoretical frameworks. At this time, research and literature focuses on different theories as the foundation of blended learning. There is not one theory that is at the core of the foundation of this practice. Research can be used to explore the educational and pedagogical foundation of blended learning further for the development of a framework for designing and implementing blended learning courses in higher education. As the transition from traditional
courses to blended learning, there is a simultaneous transition from teacher centered (behaviorist) to a learner-centered (constructivist) model. In order for this transition to be successful, instructors need to utilize the integration of technology to empower the learners into the different aspects of the teaching and learning process.

When learning technologies are utilized as a platform for learning and teaching, attention is often paid to the technology implementation. Additional research needs to focus on the actual design of the content. As referred to by this researcher as thinking “beyond the thread” (Kastner, 2019), instructors need to learn interactive ways to engage learners in the learning process. This research could provide additional insight into higher-level active learning through the asynchronized portion of the blended learning courses. This research could also provide insight into the approaches that can improve the connections between the virtual and in-person elements of blended learning courses. Online professional development has proven to be an effective delivery system at educational institutions worldwide and would allow a simulation of content being presented in the virtual format.

Researchers need to identify the potential barriers and research ways to overcome these obstacles. Additionally, further research is needed to understand not only what are the philosophical beliefs backing the implementation of this approach in academia, but how these courses are designed to allow engagement and integration of technology to transform blends. Several areas for future research on targeted demographics could add to the findings in this study. Specifically, additional demographic information can be obtained which includes specific ways informal professional development and trainings were accessed and offerings through
universities. The researcher also has experience as a learner in blended learning courses. This data could also be included in future studies to determine if there is a benefit to those experiences in enhancing teaching practices for blended learning courses.

**Educational Policy**

Another consideration revealed from this study is the need for a more enhanced educational policy to support the professional development and enhancement of blended learning. The challenge may be that blended learning does not align with the current policy and procedures in place. In this study, instructors identified that blended learning courses take much more time to develop and implement. Institutions may consider teaching a blended learning course to be a position of less demand, due to the online component of the course. However, teaching an online course can take more time and effort than does teaching traditional courses. Institutions can review policies and develop recognition systems that instructors recognize as reasonable and fair practices. Furthermore, if higher education administrators and policy makers recognize that this learning format takes more time and effort, it would be in the best interest of the institutions to recognize these contributions. As blended learning continues to be in high demand in higher education, there is a need to continue to recognize these contributions to maintain the expanding development and enhancement of blended learning courses.

Research has mostly utilized student grades and professor and student performance reviews to determine how blended learning is perceived. Moreover, most research on blended learning has focused on the modality, comparing success rates or student and/or faculty satisfaction. The concern with this approach is the variability in teaching styles. Larson and
Sung’s (2009) findings supported that these approaches to measuring success of blended learning may not be valid. They state, “If the instructor uses best practices for whatever delivery mode they will be using, then the mode of delivery will not be a major factor in student performance” (p. 41). In order to determine if practices are effective, research approaches need to be adjusted to obtain greater insight. Educational policy about course evaluation procedures and practices may need additional review and consideration to adjust based on the principles of blended learning.

Further research needs to focus on the development of a comprehensive set of best practices to share with instructors that will serve as a guide to implement effective blended learning opportunities in their courses. Developing such guidelines can lead to more interactive and flexible virtual learning formats.

**Actionable Research Plan**

The research and results from this study suggest areas for further investigation using this survey as a tool. For individual institutions, this tool may provide further guidance and details for institutional leaders about the implementation and sustainability of blended learning instruction in the higher education setting. By engaging in further research, institutions could establish a set of standards and criteria that blended instructors could utilize to guide practices and establish standards and expectations.

Specifically, individual institutions can adopt and distribute this survey to gain further insight into the perception, barriers, and needs of the institution. The data obtained from the results of this survey can then be analyzed to apply to the strategic planning process to enhance
practices. It is suggested that institutions can distribute to individual departments to utilize this data. This will lead to further insight about existing or potential barriers of blended learning. By knowing what limits exist, planning can be put in place to develop a cohesive plan with all stakeholders.

As evidence by the data within this study, blended learning instructors need additional support and professional development to improve practices. This research could provide a road map about what the training needs are and align the professional learning opportunities to the goals and mission of the institution. Planning and designing are critical features for success of blended instruction in higher education. However, the implementation and creating a culture and environment in which the programs are sustainable are essential.

Another option for institutions is to engage in long range planning to implement and monitor ways to enhance practices, professional development, and development of programs. A longitudinal study would be beneficial for institutions looking to implement changes over a long period of time and assess the overall responsiveness. Preliminary data can be utilized to create a strategic plan and then re-distribution of survey will yield data to determine if the initiatives are leading to change. This study presents a design model that provides the necessary tools and analysis protocol to adapt to individual institutions.

This study examined blended learning from a national perspective in higher education. For this study, the highest level of responses was received from instructors teaching higher education courses at the graduate level. Future research could analyze data based on level of courses taught. This would allow the researcher to compare graduate to undergraduate levels of
instruction and determine if challenges, barriers, and ratings change based on the level of
students being taught. Based on the assumption that the average age of graduate students is
higher than the average age of undergraduate students, the principles of andragogy may be more
applicable for the older population. Additionally, the research could also result in an analysis of
data that compares experience teaching blended learning. With increased experience and more
courses taught in this format, data could be compared in response to the research questions. It
may also be valuable to add questions about blended learning design and the respondents
experience with designing blended learning course. By going through the transition process from
the traditional format of instruction to develop a blended learning course, the instructor ratings,
professional development, and barriers could be examined to determine if this process enhances
knowledge and outcomes.

Another area of future research is to examine the different departments and analyze data
to determine if a difference exists in the overall rating, professional development, and barriers. It
also may yield conclusions that some areas of disciplines are adaptable to a blended format while
other areas of discipline are not based on instructor experiences. This may lead to additional
questions about the format utilized in blended learning in the different disciplines. Research has
focused mostly on the amount of online learning compared to face-to-face instruction. Instead,
additional studies can examine the different approaches to integrating both worlds and how this
various based on the discipline being taught.

In summary, future research in these different areas could enhance blended learning
efficacy. Additionally, blended learning professional development practices could improve by
utilizing existing research to identify best ways to prepare instructors to design and implement these courses. Moreover, providing instruction in a blended learning format requires additional analysis on how to remove barriers, apply different theories to increase collaboration, communication, and ways to gain knowledge and expand offerings in this setting. By utilizing this research to gain further insight into areas of need and further development, blended learning has the potential to expand and improve effectiveness and learning efficiency in higher education settings.

**Limitations and Generalizability**

The acknowledgment of the limitations of the study is important for proper interpretation of the findings and for preventing other researchers to replicate. The study was limited to the number of instructors who teach blended learning courses and were willing to participate. The second limitation was the participants’ ability and willingness to respond openly and honestly to the survey questions. The third limitation was the participants' selection bias, since there was no guarantee that the participants who completed the survey had the same characteristics as the ones that did not participate, despite their qualifications to be included in the study. This was also a purposive sampling, which inherently has limitations. The goal of this purposive sampling was not to randomly select units from a population. Rather, the goal was to collect a national sampling from an expert panel of instructors who have taught a minimum of one blended learning course. The main goal of this purposive sampling was to focus on particular characteristics of a population that are of interest, which resulted in data to answer specific research questions.
While the researcher still agrees that quantitative research was the right choice for this study, more credibility could be given to this study if coupled with qualitative research. However, a survey designed for quantitative research and subsequent statistical analysis is able to offer more evidence to strengthen the data. Inherently, research design and research instruments have limitations. Moreover, this research design may be considered limited due to the quantitative format. It seems relevant to note that there may have been additional value added to the findings by utilizing qualitative data from the participants. While the survey allowed for open responses to some survey questions, limited participants provided an open-ended response.

**Conclusion**

This study added to the blended learning body of knowledge by investigating the instructors’ beliefs about the benefits and barriers to blended learning. Additional insight was obtained about the professional development practices and needs for blended learning practices and implementation. Blended learning provides flexibility for the institution, instructors, and learners. Integration of the virtual and face-to-face platforms allows both instructors and students to engage in active learning. However, this practice is most effective when there is institutional support for professional development and support to redesign the course for a blended format.

General themes that surrounded and affected the study’s results, moreover the benefits and continued development of blended learning practices were identified. First, implementation of blended learning is a theme identified as a common barrier to blended learning. Additionally,
professional development is not consistent in institutions, and most instructors rely on informal training. As instructors are working to enhance their practices, it is evident that there are informal steps being taken through these initiatives. However, there lacks a cohesive plan to design and implementation of blended learning. Finally, it is evident, based on this study, that blended learning is a highly preferred platform and rated as superior and very superior when comparing traditional teaching approaches.

It was evident through this research that the lack of strategic planning and professional development are barriers to the implementation of best practices of blended learning. Further research is needed to determine how these practices are planned, designed, and implemented. Additional insight is needed to formulate a definition and alignment to a theoretical framework. As instructors design and implement blended learning courses, there is a need to think “beyond the thread” and allow opportunities to increase the level of engagement through the integration of technology. With this knowledge, instructors and researchers increase use of technology that correlates with the fundamental shifts in teaching, learning, and student outcomes in blended learning courses.

Based on this research, the following conclusions were drawn. First, it was concluded that instructors rate the quality of the educational experience in their blended learning courses as superior or very superior compared to the traditional face-to-face format of instruction. Additionally, instructors identified lack of professional development and training as the primary barrier to the growth and effectiveness of the blended learning environment in higher education. Finally, instructors primarily engage in informal learning situations (either intentional or
accidental) comprised of interactions with peers or management of subject matter experts or observations and/or personal investigation into the subject, such as reading or free webinars or attending conferences to develop skills and knowledge to implement blended learning courses.
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Appendix A

Internal Review Board Approval

Date: October 22, 2018

TO: Jenine Kastner

FR: Tara Veerman, IRB Chairperson

RE: IRB APPLICATION – *Blended Learning: Quality of Blended Learning and Instructor Experiences*

Your IRB application was reviewed via exempt procedures and has been accepted. Your IRB approval for data collection runs through *October 21, 2019*. If further time is needed for data collection, please contact the IRB prior to that date.

If during the data collection period any component of the study changes please contact the IRB regarding guidance on how to amend your application.

Otherwise, please see the IRB Manual and/or committee regarding end-of-year reporting procedures.

Best of luck on your study.

IRB committee
Appendix B

Consent to use Survey

Permission request to use surveys

Dear Sir/Madam:

I am a doctoral student from Centenary University in Hackettstown, New Jersey. I am in the process of writing my dissertation titled *Higher Education and Blended Learning: Beyond the Thread.*

I would like your permission to use components of the survey in my research study. I would like to use and print your survey under the following conditions:

- I will use the surveys only for my research study and will not sell or use it with any compensated or curriculum development activities.
- I will include the copyright statement on all copies of the instrument.
- I will send a copy of my completed research study to your attention upon completion of the study.

If these are acceptable terms and conditions, please indicate so by replying to me through email: jeninekastner@gmail.com.

Sincerely,

Jenine Kastner
Doctoral Candidate
Hi Jenine-

Thanks for your email. I'm glad to hear you find our report useful for your research. Consider this email my approval of your request as indicated in your email.

Good luck on your dissertation. Feel free to reach out if there's any additional assistance we can provide.

David Kelly
EVP & Executive Director, The eLearning Guild
Main 707-387-1889 | Cell 516-474-1852 | Skype or Twitter: LndDave

Check out our upcoming events...

Jeff Seaman
<jspeaman@seagullhaven.com>

Jenine,

We would be happy to provide permission for you to use questions from our surveys.
Appendix C

Instrumentation

Consent Form for Participation in a Research Study
Centenary University

Researcher: Jenine Kastner

Dissertation Topic: BLENDED LEARNING IN HIGHER EDUCATION

My name is Jenine Kastner, and I am a Doctoral student at Centenary University. For my dissertation, I am studying blended learning in higher education settings. This form is called a Consent Form. It will give you information about the study so you can make an informed decision about participation in this research. I am requesting that you participate in this research study by completing the survey, which can be initiated by clicking on the link below.

Inclusion Criteria: The participants will be required to have taught one blended course in a higher education setting (2 year, 4 year, Graduate, Vocational) to participate in the study. For the purpose of this study, blended learning is defined as a combination of face-to-face instruction with online learning that utilizes different instructional modalities to enhance engagement and learning.
The following questionnaire will require approximately 5 minutes to complete. There is no compensation for responding, nor is there any known risk. In order to ensure that all information will remain confidential, please do not include your name. If you choose to participate in this project, please answer all questions as honestly as possible and return the completed questionnaires promptly. Participation is strictly voluntary, and you may refuse to participate at any time. The potential benefits expected to accrue to the population the participant represents or to society in general is an advancement of knowledge about blended learning practices in higher education settings. The researcher believes that there are no greater than minimal risks associated with this research study.

Thank you for taking the time to assist me in my educational endeavors. The data collected will provide useful information regarding blended learning in higher education. Completion and submission of the survey will indicate your willingness to participate in this study.

If you have any questions or concerns regarding this study, its purpose or procedures, or if you have a research-related problem, please feel free to contact the researcher at Jenine.Kastner@centenaryuniversity.edu. If you have other concerns about this study or would like to speak with the Dissertation Chair, Dr. Lisa Plantamura at Lisa.Plantamura@centenaryunivesity.edu or Dr. Tara Veerman, Institutional Review Board of Centenary University, 400 Jefferson Street, Hackettstown, NJ 07840 at Tara.Veerman@centenaryuniversity.edu.

Thank you,
**Blended Learning Course instructor Research Survey**

Please answer the following questions as clearly as you can.

1. How many years have you been teaching in a higher education setting? Write in

2. How many courses per year on average do you teach? Write in

3. What is the general academic discipline you teach? Write in

4. Size of Organization: Number of Employees
   - Under 100
   - 101-500
   - 501-2500
   - 2501-5000
   - 5001-10,000
   - 10,001-50,000
   - 50,001 or more

5. Level of courses you currently use blended instruction:
   - Undergraduate
   - Graduate
   - Post Graduate
   - Technical/Other

6. Indicate which level of courses you will focus on when answering survey:
   - Undergraduate
   - Graduate
7. When you think back on the past twelve months what was the primary way in which you acquired new knowledge and/or skills related to blended learning practices?

- Informal learning situations (either intentional or accidental) comprising interactions with peers or management or subject matter experts or observations and/or personal investigation into the subject such as reading or free webinars or attending conferences.
- Learning by performing the knowledge or skills or attitudes and/or behaviors in on-the-job situations with the potential of real performance consequences.
- Formal education programs and/or systems where learning objectives have been established and published and in which knowledge or skill is acquired in activities or exercises.
- Other (write in)

8. What are the barriers to the growth and effectiveness of blended learning courses? Select 3.

- Time needed up front to develop blended course
- Quality of technology/Technology issues
- Low student retention
- Lack of faculty acceptance
- Lack of instructor training on blended learning
- Lack of strategic plan
- Lack of collaboration between instructors
- Lack of shared resources
- Student discipline
- Student motivation
- Learning Management System
- Other (write in)

9. In your own experience as an instructor, what are the THREE biggest advantages or benefits of blended learning? Select 3.

- Immediate interaction with students
- Collaboration of learners in multiple locations
- Reduced travel costs for instructor and students
- Reduced time away from work or home for instructor and students
- Noticeable greater motivation to learn compared to asynchronous
- Events/communication are retrievable/recordable/archivable
- Other (write in)
10. How do you measure the effectiveness of your blended learning courses?

By determining whether the learner(s):

__ Had a positive learning experience

__ Met the objectives of course and retained the learning

__ Transferred the new learning to the environment

__ Students expanded their learning beyond the course requirements

__ Other : Write in

11. For blended learning to be successful in your organization, which professional development learning activity will need the most focus and attention? (Select only one)

__ Designing and developing blended learning content

__ Developing a blended learning strategy

__ Deploying and using blended learning tools and technologies

__ Addressing learner requirements and preferences

__ Managing and measuring blended learning initiatives

__ Increasing the technology capability to support blended learning

__ Collaboration on design with colleagues

__ Shared resources between instructors

__ Understanding about blended learning theories

__ Other (write in)
12. How would you rate the quality of the educational experience for students in your blended courses compared to the face-to-face format?
Inferior
Somewhat Inferior
Same
Somewhat Superior
Superior

13. Would you rate your interactions with students in a blended class as much more, more, less, much less, or about the same amount as you interact with students in a face to face setting?
Much more
More
The same amount
Less
Much less

Other (please specify)

14. When you use Blended Learning, which of the following apply to your experience with it? (Select all that apply)
More effective than traditional classroom instruction
Less effective than traditional classroom instruction
Learners like it
Learners don't like it
Learners aren't even aware they are participating in Blended Learning

Takes less time to develop than a non-blended program

Takes longer to develop than a non-blended program

It's more difficult to administer a Blended Learning program

Other (please specify)

15. How do you prefer to provide instruction in a Blended Learning Course?

Instruction is always delivered face-to-face by the teacher

An equal mix of face-to-face instruction and Web based instruction

Most instruction is delivered by the teacher and supplemented with digital lessons

The student may seek instruction from the teacher according to his/her needs

Instruction is provided entirely in a digital format
Debriefing Form for Participation in a Research Study
Centenary University

Thank you for your participation in this study! Your participation is greatly appreciated.

Purpose of the Study:

As previously informed, the purpose of the study was to research blended learning in higher education settings. The goal of this research is to analyze how instructors rate the quality of blended learning, what instructors consider barriers to the growth and effectiveness of blended learning, and how instructors are acquiring the knowledge and skills they need to develop blended learning.

Final Report:

If you would like to receive a copy of a summary of the findings when it is completed, please feel free to email Jenine Kastner at JenineKastner@gmail.com.

Useful Contact Information:

If you have any questions or concerns regarding this study, its purpose or procedures, or if you have a research-related problem, please feel free to contact the researcher at Jenine.Kastner@centenaryuniversity.edu. If you have other concerns about this study or would like to speak with the Dissertation Chair, Dr. Lisa Plantamura at Lisa.Plantamura@centenaryuniversity.edu or Dr. Tara Veerman, Institutional Review Board of
Centenary University, 400 Jefferson Street, Hackettstown, NJ 07840 at
Tara.Veerman@centenaryuniversity.edu.

***Please keep a copy of this form for your future reference. Once again, thank you for your
participation in this study!***

THANK YOU MESSAGE: “Thank you for completing our survey! This survey will remain
anonymous. No email addresses, names, or IP addresses have been collected during this survey.”