Exploring Blended Learning: A Case Study of Adult Learners Using a
Learning Management System in Face-to-Face Classes

Dissertation Manuscript

Submitted to Northcentral University

Graduate Faculty of the School of Education
in Partial Fulfillment of the
Requirements for the Degree of

DOCTOR OF EDUCATION

by

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Prescott Valley, Arizona
November 2016

Approval Page

Exploring Blended Learning: A Case Study of Adult Learners Using a
Learning Management System in Face-to-Face Classes

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Abstract

Higher education has changed markedly since the beginning of the 21st century. Two of

the most significant changes are a sharp increase of non-traditional students and a rise in

instructional technology. According to research, many college campuses are comprised

of more non-traditional than traditional students. Researchers have concluded

instructional technology is not an option for colleges to consider, but an essential

component of learning in the 21st century. The general issue to be addressed in this study

was based on a report by the National Center for Education Statistics (NCES, 2014) that

stated since 2000, adults have returned *en masse* to colleges across the United States.

The problem was although college enrollments increased due to this newer student

demographic, research showed colleges did not have a comprehensive strategy for

effectively using learning management systems (LMSs) to facilitate learning in face-to-

face courses. The purpose of this qualitative, multiple case study was to evaluate how a

learning management system (e.g., Moodle), was used by students and instructors in a

non-traditional, degree-completion program at a private, four-year college. The

phenomenon being studied was how a learning management system was used to facilitate

the learning process in a non-traditional, degree-completion program and what impact

that learning process had on learning outcomes. The target college was given a

pseudonym of Midwest University with an approximate annual enrollment of 100

students and up to 40 faculty members in a non-traditional, accelerated program. A group

of 10 students (10% sample size), and 10 instructors (20% sample size) were interviewed

using a semi-structured interview protocol to collect their perceptions of how the learning

management system was used in their courses and how it has facilitated the learning

process (n=20). Participants for this study were in one U.S. Midwestern state. A multiple

case analysis was conducted to identify unifying and diverging themes associated with

this phenomenon. The findings of this study produced two primary themes consisting of

Information, including data management and knowledge acquisition and Integration,

including application/engagement and communication/feedback of an LMS in face-to-

face courses. Five recommendations for further academic research and five

recommendations for practical application were presented.

Acknowledgements

I am blessed to have a loving family, supportive friends, and wonderful colleagues. I would like to acknowledge them for their contributions and support to me in this doctoral program. Importantly, first and foremost, I return all glory and honor to my Lord and Savior, Jesus Christ. By His strength I was able to complete the journey of earning my doctoral degree.

Although he passed away much too soon in 1993, my father was one of the most important influences in my life. I admired his patience, kindness, and humility. I have also marveled at how other people regarded my father. He was very well-respected by anyone who was fortunate enough to know him. Although he rarely acknowledged the formal title himself, my father was known to many people as Dr. Edward G. Downs. At an early age, I gained a high esteem for the nomenclature of "doctor." I desired to someday reach the same academic level of my father while silently doubting it would become a reality. My father means more to me than can be expressed on these pages. Thank you, Dr. Downs.

Although my father inspired me by his legacy, my mother, Jeanette, motivated me through continuous interest in my doctoral journey. She has been a very constant and wonderful presence in my life. My step-father, Jim, earned his Ph.D. in psychology shortly after he married my mother. I vividly recall my mother giving Jim an ultimatum of when he needed to finish his doctorate degree because she thought it had dragged on too long. I vowed to work as diligently as possible so I would not receive the same

charge.

Perhaps, the person who has sacrificed the most during my doctoral studies is my awesome son, Kaden. There have been countless days, evenings, and weekends consumed by my coursework, research, and endless writing and rewriting of my dissertation. My son has often remarked that when he grows up he would like to be a professor like his dad. Like most fathers, I believe one of life's greatest blessings is inspiring our children to want to be just like us. However, when I answered my son's question about how much school he would need to complete to become a doctor, his mind quickly changed.

My family has been very supportive of my studies. Although my brother, Michael, his wife, Jenn, and their three wonderful children, Max, Miley, and Makenna, moved to Maryland during my program, they remain close and very important to me. My sisters Sheri and Amy have always encouraged me through get-togethers, phone calls, e-mails, and texts. My cousin Alison was one of the people who asked me most frequently how things were going in my program.

Almost every weekend, I met up with my good friends Scott and Stefanie. Having an opportunity to relax from a busy work and constant school work was very important. My friend Beth has been one of my strongest supporters and believers that I could achieve whatever I put my mind to.

My colleagues and friends at MWU have probably endured the most updates, provided the most positive feedback, and supported me the closest during my journey.

Our School of Business Dean, my supervisor, Jamie, was incredibly gracious to allow me time and opportunity to pursue my doctorate. My colleague LeAnn began her doctoral program within two weeks of mine. So, we checked in with each other constantly during the past four years. Thank you LeAnn for helping me feel like I was not going through this process alone. I have often joked with my friend Mary that she must have earned her Ph.D. when she was twelve. She breezed through a doctoral program in economics, amazing! A fellow department chair, Bob finished his Ed.D. about five years prior to me. So, he was able to provide valuable insight into what lay ahead in my studies. Our wonderful administrative assistants, Brenda and Kathy have been so kind and patient as talk of doctoral coursework, research, and dissertations often swirled around our office.

Last, but certainly not least, I extend my sincere appreciation to my dissertation chair, Dr. Converso, who has steadily guided me through the dissertation labyrinth. She encouraged, supported, and reassured me each step of the way. I received great feedback and advice from my subject matter expert, Dr. Bradley, and my methodologist, Dr. Fore. I am honored and privileged to earn an Ed.D. in Organizational Leadership from a highly reputable college such as Northcentral University!

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Chapter 1: Introduction

According to the National Center for Education Statistics (NCES, 2014) from

2000-2012, adult learners (age 25 and over) dramatically changed the composition of

colleges across the United States. During that 12-year period, the percentage of adult

learners comprised as much as 73% of total student enrollment among two and four-year

colleges in the nation (NCES). Ross (2011) reported that adult enrollment spiked

following the economic downturn of 2008-2009. As workers' wages were frozen, cut, or

jobs eliminated altogether, many adults returned to college to complete associate and

bachelor degrees. By returning to college, adults hoped to improve their employment

opportunities in an increasingly competitive job market (Ross, 2011). The adult learners

returning to college were known in literature as non-traditional students (Ross, 2011).

Most colleges did not have a comprehensive technology plan to assist non-

traditional students in academic success in degree-completion programs at four-year

colleges (Burrell, Finch, Fisher, Rahim, & Dawson, 2011; Messemer & Hansman, 2012).

Ross (2011) identified that non-traditional students represent one or more of the

following seven characteristics; entry to college delayed by at least one year following

high school, having dependents, being a single parent, being employed full-time, being

financially independent, attending part time, or not having a high school diploma. Using

Ross's criteria, Choy (2012) found that as many as 73% of students are non-traditional.

According to the National Center for Education Statistics (NCES, 2012), 63% of students

were non-traditional based solely on age parameters (age 25 and older). NCES also

reported that students aged 25 and older should continue to grow another 20% by 2019

(Bell, 2011). However, the numbers reported by Choy and NCES appeared much higher compared to Weimer (2014) who placed the percentage closer to 40%.

Background

According to Goddu (2012), adult students learned one of three ways: self-directed learning, situational/experiential learning, or narrative learning. Goddu found that college instructors can help adult learners draw from personal life experiences to enrich their learning experience. The additional responsibilities of adult learners placed a premium on time. Time is in even shorter supply for adult learners than it was for traditional students (Hart, 2010). Traditional students were those learners who transitioned to college directly from high school and maintained consistent enrollment (Ross, 2011).

Although there were marked differences between traditional and non-traditional students, Burrell (2011) asserted that both traditional and non-traditional students expect technology to be part of their learning experience. However, unlike most traditional students, non-traditional students lived off-campus. Adult learners had multiple roles and responsibilities they maintained outside of the classroom including spouses, children, homes, and usually full-time employment (Burrell, 2011).

Colleges made several notable changes that benefitted adult learners including distance and online education. However, those course delivery changes were more a response to new technology and increasing enrollment than a strategic plan to accommodate adult learners (Parsad & Lewis, 2008). Other research indicated that even if colleges have technology resources dedicated for adult learners, those resources were not used consistently in non-traditional programs (Ross-Gordon, 2009).

Statement of the Problem

The general issue addressed in this study was based on a report by the National Center for Education Statistics (NCES, 2014) that stated since 2000, adults have returned *en masse* to colleges across the United States. The problem was that although college enrollments have increased due to the growing non-traditional student demographic, research results suggest that college leaders did not have a comprehensive strategy for effectively incorporating learning management systems in non-traditional, degree-completion programs (Messemer & Hansman, 2012; Burrell, Finch, Fisher, Rahim, & Dawson, 2011; Weimer, 2013). There was little research connecting the use of an LMS, such as Moodle, to learning outcomes in non-traditional programs in which most adult learners are enrolled (Messemer & Hansman, 2012; Burrell, Finch, Fisher, Rahim, & Dawson, 2011; Weimer, 2013).

Although there were marked differences between traditional and non-traditional students, adult learners expect technology to be part of the learning experience similarly to traditional students (Burrell, 2011). Research showed adult learners prefer an LMS to be used in face-to-face classes (Weimer, 2013). Weimer (2013) asserted that an LMS can reinforce content presented in face-to-face classes through weekly discussion boards.

Colleges made several notable changes that increased accessibility to college programs and scheduling flexibility within college programs through distance and online education. However, those course delivery changes were more a response to increased technology and campus growth than a strategic plan to accommodate adult learners (Dahlstrom & Bichsel, 2014). Researchers found even if colleges have technology resources dedicated for adult learners, those resources were not used consistently in non-

traditional programs (Ross-Gordon, 2009). The majority of adult students expected technology to be part of their learning experience, adult learners return to college with different levels of comfort and familiarity with technology (Weimer, 2013). Although there was extensive information regarding learning management systems and adult learners, much less was known about the direct relationship between the two.

Purpose of the Study

The purpose of this qualitative, multiple case study was to gain insight and understanding on how a learning management system (LMS), such as Moodle, was used by students and instructors in a non-traditional, degree-completion program at a private, four-year college. The phenomenon that was studied was how a LMS was used to facilitate the learning process and achieve learning outcomes for adult learners in a non-traditional, degree-completion program. Yin (2014) contended that a sample size should be based on how many individuals were needed to establish reliability for a study. However, Yin asserted that typically the sample size should be a minimum of five percent of the total population. The college studied has been given a pseudonym of Midwest University. It had an approximate annual enrollment of 100 students and up to 50 faculty members an accelerated program. Accordingly, a group of 10 students (n=10), representing 10% of the total population and 10 instructors (n=10), representing 20% of the total population was interviewed using a semi-structured interview protocol to collect their perceptions of how the learning management system was used in their courses and how it facilitated the learning process (N=25). Participants for this study were in one Midwestern state. A case analysis was conducted to identify unifying and diverging themes associated with this phenomenon within the accelerated program (Yin, 2014).

The intent of the findings was to provide meaningful information that provided best practices for future non-traditional, face-to-face courses.

Research Questions

The purpose of this qualitative, multiple case study was to evaluate how a learning management system, Moodle, was used by students and instructors in a non-traditional, degree-completion program at a private, four-year college. To address that purpose, the following questions were posed.

Q1. How does a learning management system (LMS), such as Moodle, influence non-traditional students' learning outcomes managed in a blended learning setting in the Applied Organizational leadership (AOL) degree completion program at Midwest University as perceived by students and instructors?

Q2. How can a learning management system (LMS), such as Moodle, improve non-traditional students' learning in the Applied Organizational Leadership (AOL) degree-completion program at Midwest University as perceived by students and instructors?

Nature of the Study

The purpose of this qualitative, multiple case study was to evaluate how a learning management system, Moodle, was used by students and instructors in a non-traditional, degree-completion program at a private, four-year college. The phenomenon being studied was how an LMS, such as Moodle, was used to facilitate the learning process in a non-traditional, degree-completion program. A qualitative method inquiry was believed the most appropriate choice for this study.

Qualitative research includes five primary research approaches; biography, case

study, ethnography, phenomenology, and grounded theory (Padgett, 2004). Each approach included its own method, data analysis, and research report. In this proposed study, a case study was considered most appropriate. A case study was beneficial when little was known about a particular situation or to monitor change over a period of time (Yin, 2014). Because there was limited amount of qualitative information about the research topic in the literature, the case study approach was used. Further, interview data was collected and analyzed over a period of six to ten weeks which was consistent with a case study.

According to Johnson and Christensen (2012), qualitative research involved relationship phenomena. The relationship phenomena in this study included targeted interaction between a study group (adult learners and instructors) and a learning medium (learning management system). Another distinguishing characteristic between the qualitative and quantitative research pertained to the study groups (target samples) themselves. In this study, a smaller group was fixed or purposefully selected to get an in-depth understanding of the perceptions and experiences, whereas a quantitative approach used a larger pool randomly selected to examine and statistically test variables. A third comparison between the two methods was qualitative research implies subjectivity by the researcher, but quantitative research expected objectivity. The comparisons suggested a qualitative case study was the most appropriate fit for the research. Because this qualitative case study explored non-traditional students in one degree-completion program, a single case study was conducted, and not a multiple case study. The non-traditional student and the non-traditional instructor were the units of analysis.

Significance of the Study

Since 2010, there has been a growing volume of research on blended learning and research on adult learners (Burrell, Finch, Fisher, Rahim, & Dawson, 2011; Messemer & Hansman, 2012; Weimer, 2013). McDonald provided a foundational assessment of variations among adult learners in blended learning in higher education. However, McDonald did not evaluate accelerated learning nor learning outcomes as separate foci. Dias and Diniz (2012) and Ross-Gordon (2012) studied the basic functionality of learning management systems and blended learning. Although functionality of an LMS and blended learning practices could be applied to non-traditional learning, non-traditional learning was not the focus of either research project. Gary (2013) researched an LMS from the perspectives of students. However, Gary did not distinguish between traditional and non-traditional students. Yong and Mills (2014) evaluated interdisciplinary learning using an LMS, but they did not analyze adult learners. Vogten and Koper (2012) assessed the relationship between an LMS and cloud-based technology, but a specific student profile was not addressed.

Liu and Li (2012) investigated the relationship between an online learning system and adult learning. So, their research was closely aligned with the author's research. Liu and Li evaluated how a learning system functioned as a collaborative media support for adult learners. Their research did not evaluate blended learning. So, although there was research for non-traditional learning and learning management systems, there was little research connecting the two.

This study addressed the research gap by evaluating how adult learners use learning management systems (LMS) in a blended learning environment. By

understanding how adult learners used an LMS, educators, including curriculum and instructional designers, can make more informed decisions regarding the organization, structure, and learning activities in accelerated, blended learning courses. This study may be valuable to instructors, instructional designers, and administrators of instructional curricula for the benefit of adult learners and students in blended learning courses. The research may provide new information about student and instructor preferences using a learning management system in blended learning, non-traditional courses. Lastly, the research may evaluate if improved blended learning courses produce higher learning outcomes. If the study were not conducted, instructors, instructional designers, and administrators would not have specific information about how to design, teach, and evaluate courses in which an LMS is used in blended learning. Also, if the study were not conducted, more students may not meet learning outcomes in courses in which an LMS is used in blended learning.

Definition of Key Terms

The following terms were defined and were included operationally in the study.

Accelerated learning. Accelerated learning is defined as formal or informal learning, typically within a non-traditional program, that consists of fewer contact hours and a shorter duration than a traditional educational program (Wlodkowski, 2003).

Access. Access is the ability of an adult learner to enter a formal or informal educational program (Adelman, 2007).

Adult and Continuing Education (ACE). ACE is the exploration and study of aspects of theory building, research, and professional practice in the field of adult and life-long learners (Wilson & Hayes, 2000).

Adult learner. Adult learners are those whose academic journey has been disrupted or delayed, due to age, social perception, or self-awareness, from a traditional approach to formal or informal education (Merriam & Brockett, 2007).

Andragogy. Andragogy is the art, science, or practice of informing, instructing, or mentoring adult learners (Knowles, 1980).

Applied Organizational Leadership (AOL). AOL is a business, cohort-oriented, degree-completion program for non-traditional or adult learners at MidAmerica Nazarene University (Downs, 2015).

Assessment. Assessment is the collection and measurement of information and achievement based on standardized comparisons (Queeney, 1995).

Center for Accelerated and Professional Education (CAPE). The CAPE is the academic department that administers short-term courses, academic testing, and the accelerated Associates of Arts business and general education degrees (Downs, 2015).

Degree-completion program. A degree-completion program is a formal academic program for non-traditional students who have completed most their college credit hours, but have not satisfied the requirements of a major field of study nor a bachelor's degree (Wlodkowski, 2003).

Digital divide. The digital divide is a term used to emphasize the difference between computer users and non-computer users or technology-savvy from novice technology individuals (Selwyn, Gorard, & Furlong, 2006).

Electronic learning (e-learning) / Online learning. E-learning, or online learning as it is also known, is a movement within distance education that focuses on the

role of technology in learning. The "e" represents "electronic" signifying learning that is facilitated by online technology (Carliner & Shank, 2008).

Experiential learning. Experiential learning addresses the connection of an individual to an event, or series of events, in which he or she develops or enhances understanding of a subject. One does not need to have experienced something to know about it; however, one likely knows about something when one has experienced it (Kolb, 1984).

Evaluation. Evaluation is the application of assessment findings to academic or programmatic achievement (Galbraith & Jones, 2010).

Formal learning. Formal learning is learning that occurs in an accredited institution, such as a college or university, wherein credits may be earned toward a certificate or degree (Hrimech, 2005).

Generational learning. Generational learning is the theory of how different generations of students learn based on unique characteristics associated with their generation or life experiences (Shragay & Tziner, 2011).

Higher education. Higher education is formal learning that occurs following the earning of a high school diploma or equivalent, also known as postsecondary education. Higher education is practiced most commonly in two and four-year colleges and universities (Merriam, Caffarella, & Baumgartner, 2007).

Informal learning. Informal learning is learning that occurs outside of an accredited institution, usually independently or civilly wherein credits are not earned toward a certificate or degree (Merriam, Caffarella, & Baumgartner, 2007).

Instructional design. Instructional design is the practice of creating learning activities and exercises that facilitate the acquisition of knowledge. This practice is most commonly associated with online or hybrid learning methodologies (Reiser & Dempsey, 2007).

Lifelong learning. Lifelong learning is the concept that one's learning is an ongoing and ever-expanding process without a predetermined ending point (Kasworm, Rose, & Ross-Gordon, 2010).

Non-traditional program. A non-traditional program is a formal educational program that is designed for adult learners often in an accelerated format. The term denotes a break from a traditional program which is typically associated with 18-25 year-old students (Merriam, Caffarella, & Baumgartner, 2007).

Pedagogy. Pedagogy is the art, science, or practice of teaching children (Peterson & Ray, 2013).

Transformational learning. Transformational learning is learning that occurs through an experience, or series of experiences, also known as a disorienting dilemma. This significant experience produces a shift in learning perspective (Mezirow, 1997).

Summary

The majority of four-year colleges did not have a comprehensive technology plan to help adult learners succeed in degree-completion programs at four-year colleges (Burrell, Finch, Fisher, Rahim, & Dawson, 2011; Messemer & Hansman, 2012). The problem was that although college enrollments have risen due to more non-traditional students, four-year colleges did not have a comprehensive strategy for effectively incorporating learning management systems in non-traditional, degree-completion

programs (Messemer & Hansman, 2012; Burrell, Finch, Fisher, Rahim, & Dawson, 2011; Weimer, 2013). There was little research connecting the use of an LMS, such as Moodle, to learning outcomes in non-traditional programs (Messemer & Hansman, 2012; Burrell, Finch, Fisher, Rahim, & Dawson, 2011; Weimer, 2013).

The purpose of this qualitative, multiple case study was to better understand how a learning management system (LMS), such as Moodle, was used by students and instructors in a non-traditional, degree-completion program at a private, four-year college. The phenomenon studied was how an LMS was used to facilitate the learning process and achieve learning outcomes for adult learners in a non-traditional, degree-completion program. This study addressed the research gap by evaluating how adult learners use learning management systems (LMS) in a blended learning environment. By understanding how adult learners used an LMS, educators, including curriculum and instructional designers, can make more informed decisions regarding the organization, structure, and learning activities in accelerated, blended learning courses.

Chapter 2: Literature Review

There were many learning theories that were foundational to higher learning. Experiential learning theory and e-learning theory were influential to adult learning theory. With a surge of adults returning to colleges, adult learning theory expanded to include perspectives on gender, gender identity, race, and postmodernism. If Ross's (2011) contention were true that adult learners will remain a formidable presence in higher education, then one can reason that adult learning theory will continue to evolve over the next 25 to 50 years.

Colleges have made several notable changes that have benefitted adult learners including distance and online education. However, research indicated that colleges do not have a comprehensive strategy for using learning management systems in non-traditional programs (Parsad & Lewis, 2008). Other research indicated that even if colleges have technology resources dedicated for adult learners, those resources were not used consistently in non-traditional programs (Ross-Gordon, 2009).

Documentation

Several research resources were used to access and compile a summary of articles and books associated with the topic of non-traditional learners and the use of learning management systems, including EBSCOhost, ProQuest, SAGE, and interlibrary loan. The literature review was also compiled using several books and articles from a professional collection of resources. EBSCOhost Publishing included thousands of books, journals, and magazines organized by subject, title, or author searches (Burns & Rofofshy Marcus, 2011). ProQuest included over 125 billion digital pages of data primarily comprised of newspaper archives and periodical databases also organized by

subject, title, or author searches (ProQuest, 2008). The sections included in this chapter represent some of the key words and terms used for searching.

Adult Learning Theory

Kenner and Weinerman (2011) identified adult learning theory as one of the critical determinants of success for non-traditional college students. The authors asserted adults learn differently than traditional college students. One of the most important distinctions is that adults often have life experiences that provide a broader context for learning than do younger, traditional students. The authors also found non-traditional programs emphasize the role of experience in learning and build from the collective knowledge adults bring with them to the classroom. Due to the differences in age and learning styles, adult learners are often referred to as non-traditional students (Ross, 2011).

Ross (2011) suggested non-traditional students represent one or more of the following seven characteristics: entry to college delayed by at least one year following high school, having dependents, being a single parent, being employed full-time, being financially independent, attending part time, or not having a high school diploma.

According to Goddu (2012), adult students learn one of three ways: self-directed learning, situational/experiential learning, or narrative learning. Goddu concluded college instructors can help adult learners draw from personal life experiences to enrich their learning experience by providing engaging classroom discussion and requiring assignments that apply concepts to their personal and professional lives. Although most college students balance additional obligations outside of the classroom, adult learners are often married, have children, work full-time, and participate in numerous additional

community functions (Hanover, 2013). It can be summarized that the additional responsibilities of adult learners place a premium on time. Because non-traditional programs are often accelerated, learning must also occur outside of the classroom. Accordingly, the research will examine how adult learners and instructors use a learning management system in a non-traditional program. The research will also explore how a learning management system can be used to facilitate learning outside of the classroom.

Experiential Learning Theory

Dewey (1934) contended one's experiences are infused in all aspects of life, including education (Boucouvalas & Lawrence, 2010). Dewey concluded, experience plays an important role in one's learning process. Like service learning theory, experiential theory requires specific learning outcomes to validate, or reinforce, the learning process. Kolb (1984) developed concrete experience and reflective observation in his cyclical model. Many colleges provide opportunities for adult learners to earn college credit for previous life experiences (Boucouvalas & Lawrence, 2010). Kolb's model can be used to apply life experiences to broader learning theories such as behaviorism and social constructivism.

Boucouvalas and Lawrence (2010) identified experiential learning may also be a reverse process to traditional learning. Traditional learning instructs and assesses students' subject comprehension. Students may then apply their knowledge to a real world situation. Experiential learning often begins with a real world situation and connects it to an academic concept. So, in traditional learning, theory leads to practice; whereas, in experiential learning practice leads to theory. Boucouvalas and Lawrence organized three key time parameters including prior, current, and new experiences from

which one can learn from real world situations.

Experiential learning theory is closely related to other adult learning theories including self-directed learning theory, transformative learning theory, and indigenous learning theory. Self-directed learning theory (Knowles & Knowles, 1959) is the process of learning through one's own trials and errors, as cited in Boucouvalas and Lawrence (2010). When an experience, or series of experiences, produces a significant change in worldview, transformative learning has occurred (Mezirow, 1978). Transformative learning theory expands on experiential learning theory by a more significant life-learning experience and resulting greater comprehension of a subject. Also rooted in experiential learning theory, indigenous learning theory is knowledge that is unique to a specific culture or geographical location (Boucouvalas & Lawrence, 2010). Because experiential learning theory is closely associated with adult learners, the proposed research will explore the relationship between an adult learner's experiences and a learning management system.

E-learning Theory

Moore and Kearsley (2005) defined distance education as "learning that occurs in a different place from teaching" (p. 2). Archer and Garrison (2010) contended there have been three generations, or cycles, of distance education. The first generation is asynchronous distance education that dates to the 19th century through British correspondence courses (Moore & Kearsley, 2005). The second generation is synchronous distance education in which the student may connect with a teacher by video or phone (Archer & Garrison, 2010). The third generation, also called e-learning, can be

either asynchronous or synchronous. The third generation is the most technologically-advanced version of distance education (Archer & Garrison, 2010).

There are several different technologies that assist in the learning process including online education, e-learning, and learning management systems (LMS). LMS are defined as "web-based technology which assists in the planning, distribution, and evaluation of a specific learning process" (Asiri & Mahmud, 2012, p. 126). According to Weimer (2013), one of the best methods for promoting learning both inside and outside of the classroom is through a learning management system (LMS). Weimer found blended instructional methodology involved an LMS to support face-to-face instruction. In blended instruction, an LMS can integrate collaborative and interactive learning activities. Weimer contended incorporating a learning management system requires a strong commitment from an institution's administration to ensure policies and procedures are established to effectively guide its usage.

Dias and Diniz (2014) and Tulbure (2012) studied learners' profiles. The researchers assessed how learners' profiles improve LMSs. Gary (2013) asserted that LMSs are an effective tool to monitor students' progress, run reports for assessment purposes, manage documents, and present learning modules. Gary's study was unique because he analyzed students' and alumni perceptions of how faculty members integrate LMS's into their courses.

Hammer, Ronen, Sharon, Lankry, Huberman, and Zamtsov (2010) explored differences between student and instructor perceptions of LMS's. Their study included the attitudes of college students and instructors regarding the usage of mobile devices (i.e., laptops and cell phones) for non-academic purposes during lectures. Students

reported excessive multitasking usages of mobile devices for communicating with friends and gaming did not interfere with their learning experience. However, Hammer et al. noted that instructors perceived unnecessary mobile device usage as distracting to themselves and other students. Most students accurately perceived that using mobile devices in the classroom is disturbing to instructors and peers. However, students and instructors both agree that using technology is an acceptable form of learning. Hammer et al. concluded that both students and instructors believe incorporating mobile devices in learning is important because of the prevalence of such devices throughout American society.

Older college students (aged 35 and over) tend to regard classroom mobile device usage similarly to instructors (Hammer et al, 2010). Hammer et al. (2010) found older students and instructors perceive the usage of mobile devices during classroom instruction as unnecessary and obtrusive. They added older students are more accustomed to learning without mobile devices because mobile phones and other devices were not as commonly used in college classrooms when they were younger students. The various viewpoints of mobile device usage are presented in the context of McLuhans's (2010) laws of media which provides a framework of ethical considerations of technology (as cited in Sandstrom, 2012).

Jones and Healing (2010) examined technology from a generational perspective. Their study links the attitudes and orientations of younger students based on their life long exposure of networked and digital technologies. Digital natives aged 25 and under, have used technology throughout their lives but not necessarily throughout their academic careers. Millennials, students born 2000 or later, have used technology as a

learning tool throughout their personal and academic lives. For millennials, education is often difficult to separate from technology. Jones and Healing determined that aside from digital natives and millennials, there are significantly different levels of familiarity and attitudes pertaining to technology in education among older generations.

Gonzalez (2011) identified three primary content delivery methods including face-to-face, online, and hybrid instruction. Gonzalez's revealed faculty members have differing attitudes and opinions about the three content delivery methods. Hashey and Stahl (2014) identified online interaction between teachers and students as either synchronous, with teacher–student interactions occurring in real time, or asynchronous, with interactions occurring at different times. Blended instruction provides more student control over the time, place, path, or pace of content and instruction than just face-to-face instruction (Stalker & Horn, 2012). The research will be used to evaluate how time, place, path, and pace impact student learning when using a learning management system.

Adult Learning Theory and Higher Education

Although there is extensive research pertaining to the unique challenges, obligations, needs, and desires of adult learners, there is little research regarding technology training for returning adults. Wolfson, Cavanaugh, and Kraiger (2014) provided an overview of the cognitive and socio-emotional changes associated with aging. They proposed ways that technology-based training can accommodate these changes. Wolfson et al. recommended that technology-based training for older adults should be highly structured, provide feedback and adaptive guidance, include metacognitive prompts, incorporate principles derived from cognitive load theory and cognitive theory of multimedia learning, and include a user interface that is simple and

consistent throughout the course. Bergman (2012) contended that colleges must strategically implement technology training to ensure adult learners have a baseline awareness of and preparation for technology.

Characteristics of Adult Learners

Mammadov and Topçu (2014) echoed Bergman's (2012) contention that colleges have an obligation to prepare and equip adult learners with essential technology skill sets. Mammadov and Topçu evaluated the role of e-mentoring among adult learners. E-mentoring is remote advisor assistance for e-learning. Mammadov and Topcu determined that students who used e-mentoring had high motivation and desire and they could maintain their perseverance to complete required individual and group tasks. The results from their study revealed students formed an efficient and interactive group and worked collaboratively to resolve common issues. E-mentored students could find a way to work as a community which further enhanced their learning experience (Mammadov & Topçu, 2014).

Like Kolb (1984), Tulbure (2012) concluded that adult learners' grades improve when instructors recognize and incorporate teaching strategies that align with adults' individual learning styles. Mohammed (2013) evaluated academic performance; however, his research was based on motivation theory. Motivation theory is the study of why, how, and what motivates individual behavior (Mohammed, 2013). Mohammed studied five aspects to determine the best method of motivating adult learners in an accelerated learning format. The five aspects included creating an interesting learning environment, creating an emotional connection by using visuals, creatively presenting by using colors and sounds, activating, and integrating learners through fun activities such as

interactive quizzes, mobile learning, multi-sensory activities such as problem-solving activities, exercises and learning games, and motivating learners to engage actively in the learning process.

Kenner and Weinerman (2011) contributed significantly to adult learning theory. They claimed that both students and instructors must understand how adult learning theory affects the academic success of non-traditional students. Although, Ross (2011) and Kenner and Weinerman (2011) defined adult learners similarly, Kenner and Weinerman considered how social factors impact non-traditional students differently than traditional students. They explored the spike in college enrollment among adult learners between 2008 and 2010. They established three primary social factors as those who lost their jobs due to the recession of 2008, veterans returning from Afghanistan and Iraq, and adults who recently completed their General Educational Development (GED) degree.

Kenner and Weinerman's (2011) study was built upon Horn's (1996) classification of non-traditional students from minimally, moderately, to highly non-traditional. Contextual transference is implemented in the study which helps students compare their depth of non-academic and academic knowledge. Kenner and Weinerman upheld Knowles (1980) contention that adult learners are typically more self-directed and task-oriented than traditional students. Conversely, because adult learners have developed sharper critical thinking skills, they are more likely than traditional students to resist new learning strategies. The research will be used to evaluate student interest and awareness of new learning strategies, especially when using a learning management system.

Theoretical Framework of Adult Learning

      Brookfield (2010) organized seven distinct learning theories that comprise the broader theoretical framework of adult learning including africentrism, queer theory, critical theory, critical race theory, feminist theory, postmodernism, and transformative theory. Each of the theories factored the unique characteristics of adult learners, but also with social and contemporary considerations. As the student population has increased, so too has the research pertaining to adult learning theory. At Midwest University, the number of adult learners has increased from 18 in January, 1987 to approximately 1,000 in January, 2015 (Midwest University Annual Report, 2015). During the approximately 30-year span, the following seven learning theories have emerged.

      Africentrism. The term africentrism is credited most commonly to Colin (1988) who re-conceptualized adult learning as a collective, not individual, process (Brookfield, 2010). Africentrism introduces African socialism themes such as *Ujima*, collective responsibility, and *Ujamaa*, cooperative economics, to adult learning theory. Africentrism factors African cultural practices such as *gumbo yaya* in which many individuals converse simultaneously (Ampadu, 2004). Colin argues that traditional adult learning theory has overly highlighted individuality in the learning process and that it has been based almost entirely on Eurocentric ideology.

      Queer theory. Queer theory has recently gained acceptance among some scholars as a distinct field of study related to adult learning theory. Hill (2006) declared because of a specific focus on the role of sexuality and sexual identity in the learning process, queer theory is more of a posture, or claim, than theory (Brookfield, 2010). Queer theory challenges dominant perspectives of adult learning theory by reintroducing

self-identify and self-esteem. Along with feminist theory, queer theory asserts that one's sexuality may contribute significantly to one's comfort and familiarity in non-traditional learning environments.

Critical Theory. Core elements of constructing meaning, including communication that leads to agreement or understanding, is critical theory (Mezirow, 1991). Critical theory begins with the presumption that there is inequality in society; therefore, there are multiple viewpoints and opinions for determining meaning (Brookfield, 2010). By recognizing different cultures, races, and social classes, critical theory attempts to even the learning plane by incorporating various individual strengths, weaknesses, opportunities, and challenges to adult learning. The objective of critical theory is to elevate social consciousness to promote equitable learning opportunities for adult students.

Critical Race Theory. Like critical theory, critical race theory suggests that there is unequal access to and instruction within adult learning. However, critical race theory specifically analyzes this challenge within the framework of race within the United States (Delgado & Stefancic, 2001). Critical race theory emerged from an increase in diversity awareness in the late 1970's. Unlike major civil rights movement in the 1950's and 60's, critical race theory contends that racial "micro-aggressions" continue in higher education due to expected conformity among primarily Caucasian college administration and faculty (Brookfield, 2010). The goal of critical race theory is to increase tolerance and allowances of racial differences within adult learning.

Feminist Theory. Feminist theory follows the social conventions of critical theory and critical race theory, by highlighting unique challenges women face in adult

learning. Feminist theory asserts that gender-based inequality exists at home, work, and school (Brookfield, 2010). Foundational learning theories established by Dewey (1934), Knowles (1980), and Kolb (1984) did not critically evaluate gender differences in adult learning. Accordingly, feminist theory advances uniquely feminine qualities such as connected knowing and nurturance (Belenky, Clinchy, Goldberger, & Tarule, 1986). Within adult learning theory, feminist theory has become more popularized than critical theory or critical race theory due to its application to a larger student demographic (Brookfield, 2010).

Postmodernism. A contradiction by its own terms, postmodernism is a philosophy that seeks to break from traditional constraints. Postmodernism allows for looser boundaries of what is understood and universally acceptable (Lyotard, 1984). Some scholars argue that postmodernism has heavily influenced adult learning by challenging conventional teaching practices (Boucouvalas & Lawrence, 2010). For example, many non-traditional classrooms rearrange seating into a u-shape so all students see each other's faces. This is a different physical arrangement from the traditional seating rows that are used in most college classrooms (Brookfield, 2010). Postmodernism can be closely associated with the third generation of distance education, e-learning, because of the various technological resources that facilitate learning in stark contrast to lecture-oriented education.

Transformative Learning Theory. Of the seven adult learning theories presented, transformative learning theory is the most essential to the basic tenets of non-traditional education. Mezirow (1991) posited that life experiences are continually defining and expanding an adult's learning context. Mezirow offered that an adult's

deepest critical thinking occurs through experience, a term identified as meaning schemes. Transformative learning transpires in a combination of four primary methodologies. Adults may learn from existing learning frames, develop new learning frames, transformative points of view, and transformative habits of mind (Brookfield, 2010).

Theoretical Expansion of Adult Learning

As previously discussed, adult learning theory can be better understood in the context of other learning theories. However, there are also several unique challenges and opportunities for adult learners. Adults face unique external factors and they participate in different programs, with different formats and lengths, than their traditional counterparts. Persistence rates vary significantly among non-traditional programs as do student learning, andragogy, and teaching practices, pedagogy.

External factors among adult learners. Gaylor, Grubbs, Hayes, and Kimmel (2012) examined employment, income, motivations, and barriers of adult learners by contrasting their 2004-2005 study with a 2010 study of nontraditional students enrolled in four-year colleges that offered programs designed for working adults. Gaylor et al. determined that the main reason adults returned to college was to improve their financial outlook. Due to the economic recession that began in 2008, many adults returned to college due to job loss, income reduction, or increased workload at their primary employment (Gaylor et al., 2012). Factors such as motivation and barriers including employment rate, job placement, and students' loans were also determined to be major considerations for returning adults. Community business leaders should also be an active part of the accelerated learning process by providing meaningful input into industry

trends and desired skill sets. They are also potential mentors, advisory board, or industry council members. The role of external influence from industry should help shape learning particularly among adult learners (Saar, Ure, & Desjardins, 2013).

Structural and public policy frameworks underlie different adult learning systems, which are both a product of and influence the interaction between institutions and organizations (Saar et al.). For example, the link between participation in training and labor market and education systems should be understood not just as 'one way', but as involving dynamic feedback (Markowitsch & Hefler, 2007). Small and Ulrich (2010) further reinforced the important of industry guidance in non-traditional learning. They suggested new common professional core (CPC) and innovative strategies in pedagogy produced a better learning experience based on student feedback. Salyers (2013) suggested it was imperative to review theory and emerging evidence to present findings to the actual practices studied by adult learners.

Program lengths. Bell (2012) offered research about how non-traditional students have slowly gained a majority presence on many U.S. colleges. Bell discussed how the college student population has changed over the past 10 years. According to the National Center for Education Statistics (NCES), there are 17.6 million undergraduates, 38% are age 25 and older. Bell identified common barriers and core problems that must be addressed by colleges who work with adult learners including situational barriers, institutional barriers, and dispositional barriers. Bell reported that traditional programs can take two to three times longer to complete than non-traditional programs.

Persistence in adult learning. Attrition has been a significant factor among undergraduate students for over 100 years. Only half of the students who entered college

earned their bachelor's degree (ACT, 2010; Bergman, 2012; Tinto, 1993). Bergman (2012) used the Bean and Metzner (1985) Conceptual Model of Nontraditional Undergraduate Student Attrition and Braxton, Hirschy, and McClendon's (2004) Theory of Student Departure in Commuter College and Universities model as the foundation for his expanded model to consider persistence among adult learners in undergraduate degree-completion programs. Bergman found that there are many factors affecting persistence among adult learners including admission experience, teaching quality, instructional method, assessment method, and peer student relationships.

Andragogy and pedagogy in adult learning. Bergman (2012) evaluated accelerated learning through the lens of andragogy. Bergman assessed that adult learners are more engaged and responsible in their own learning process than traditional students. Bergman pointed out international programs, such as the Open University Malaysia (OUM), recognized that the greater the variety of learning activities, the greater the satisfaction among adult learners. OUM's research was conducted in face-to-face and online classes, but the researchers determined the same conclusion regardless of course format. Their study is applicable for adult learning methods in open and distance education colleges and universities. The researcher in this proposed study will explore what learning activities students preferred and what learning activities are used by instructors.

The Non-traditional Learner

Ross (2011) suggested that non-traditional students represent one or more of the following seven characteristics: entry to college delayed by at least one year following high school, having dependents, being a single parent, being employed full-time, being

financially independent, attending part time, or not having a high school diploma. Using

Ross's criteria, Choy (2012) found that as many 73% of students are non-traditional.

According to NCES (2012), 63% of students are non-traditional based solely on age

parameters (age 25 and older). NCES predicted that students aged 25 and older will

continue to grow another 20% by 2019 (Bell, 2011). However, the numbers reported by

Choy and NCES appeared much higher compared to other resources placing the

percentage closer to 40% (Weimer, 2013).

Hanover (2013) contended that as adults return to college, they bring with them

several unique needs. According to Goddu (2012), adult students learn one of three

ways: self-directed learning, situational/experiential learning, or narrative learning.

Goddu concluded that college instructors can help adult learners draw from personal life

experiences to enrich their learning experience by providing engaging classroom

discussion and requiring assignments that apply concepts to their personal and

professional and personal lives. Although most college students balance additional

obligations outside of the classroom, adult learners are often married, have children, work

full-time, and participate in numerous additional responsibilities (Hanover, 2013).

Hanover (2013) revealed the additional responsibilities of adult learners place a premium

on time. Because non-traditional programs are often accelerated, learning must also occur

outside of the classroom (Weimer, 2013). According to Weimer (2013), one of the best

methods for promoting learning both inside and outside of the classroom is through a

learning management system (LMS).

Although there is extensive research pertaining to the unique challenges,

obligations, and needs of adult learners, there is little research regarding technology

training for returning adults. Wolfson, Cavanaugh, and Kraiger (2014) provided an overview of the cognitive and socio-emotional changes associated with aging. They proposed ways that technology-based training can accommodate these changes. Wolfson et al. recommended that technology-based training for older adults should be highly structured, provide feedback and adaptive guidance, include metacognitive prompts, incorporate principles derived from cognitive load theory and cognitive theory of multimedia learning, and include a user interface that is simple and consistent throughout the course. Bergman (2012) stated, there are "implications for theory, research, and practice [that] are highlighted as possible strategic leverage points for creating policies and procedures that will aid in adult student retention in degree completion programs at four-year universities" (p. vii).

Mammadov and Topçu (2014) found the students engaged with e-mentoring had high motivation and desire, and they could maintain their perseverance to complete required individual and group tasks. The study revealed that the students formed an efficient and interactive group and worked collaboratively to resolve common issues. They could find a way of working as a community which deepened their awareness as college students (Mammadov & Topçu, 2014).

Tulbure (2012) concluded adult learners' academic grades improved when instructors recognize and incorporate teaching strategies that align with the students' unique learning styles. Mohammed (2013) studied five aspects to determine the best method of motivating adult learners in an accelerated learning format. The five aspects include creating an interesting learning environment, creating an emotional connection by using visuals, creatively presenting by using colors and sounds, activating, and

integrating learners through fun activities such as interactive quizzes, mobile learning, multi-sensory activities such as problem-solving activities, exercises and learning games, and motivating learners to engage actively in the learning process.

E-learning Theory

Moore and Kearsley (2005) defined distance education as "learning that occurs in a different place from teaching" (p. 2). Archer and Garrison (2010) contended that there have been three generations, or cycles, of distance education. The first generation is asynchronous distance education that dates to the 19th century through British correspondence courses (Moore & Kearsley, 2005). The second generation is synchronous distance education in which the student may connect with a teacher by video or phone (Archer & Garrison, 2010). Archer and Garrison (2010) revealed the third generation, also called e-learning, can be either asynchronous or synchronous. The third generation is the most technologically-advanced version of distance education.

There are several different technologies that assist in the learning process including online education, e-learning, and learning management systems (LMS). LMS are defined as "web-based technology which assists in the planning, distribution, and evaluation of a specific learning process" (Asiri & Mahmud, 2012, p. 126). According to Weimer (2013), one of the best methods for promoting learning both inside and outside of the classroom is through a learning management system (LMS). Blended instructional methodology involves an LMS to support face-to-face instruction. In blended instruction, an LMS can integrate collaborative and interactive learning activities. However, incorporating a learning management system requires a strong

commitment from an institution's administration to ensure policies and procedures are established to effectively guide its usage (Asiri & Mahmud, 2012).

Dias and Diniz (2014) and Tulbure (2012) studied learners' profiles. They used learners' profiles to improve learning management systems. Gary (2013) asserted that learning management systems are an effective tool to monitor students' progress, run reports for assessment purposes, manage documents, and present learning modules. Gary's study was unique because he analyzed students' and alumni perceptions of how faculty members integrate LMS's into their courses.

Hammer, Ronen, Sharon, Lankry, Huberman, and Zamtsov (2010) explored differences between student and instructor perceptions of LMS's. Hammer et al. explored the attitudes of college students and instructors regarding the usage of mobile devices (i.e., laptops and cell phones) for non-academic purposes during lectures. In their study, students reported that excessive multitasking usages of mobile devices for communicating with friends and gaming did not interfere with their learning experience. However, instructors perceived unnecessary mobile device usage as distracting to themselves and other students. Most students accurately perceived that using mobile devices in the classroom is disturbing to instructors and peers. However, students and instructors both agree that using technology is an acceptable form of learning. Further, they both agree that learning will continue to incorporate mobile devices because of their prevalence throughout American society (Hammer et al., 2010).

Older college students, aged 35 and over, tend to regard classroom mobile device usage similarly to instructors (Hammer et al., 2010). Older students and instructors

perceive the usage of mobile devices during classroom instruction as unnecessary and obtrusive (Hammer et al., 2010). Older students are more accustomed to learning without mobile devices because mobile phones and other devices were not as commonly used in college classrooms when they were younger students. The various viewpoints of mobile device usage are presented in the context of McLuhans's (2010) laws of media which provides a framework of ethical considerations of technology (as cited in Sandstrom, 2012).

Jones and Healing (2010) examined technology from a generational perspective. Their study links the attitudes and orientations of younger students based on their life long exposure of networked and digital technologies. Digital natives, aged 25 and under, have used technology throughout their lives but not necessarily throughout their academic careers (Jones & Healing, 2010). Millennials, students born 2000 or later, have used technology as a learning tool throughout their personal and academic lives. For millennials, education is often difficult to separate from technology (Jones & Healing, 2010). Jones and Healing determined that aside from digital natives and millennials, there are significantly different levels of familiarity and attitudes pertaining to technology in education among older generations.

Gonzalez (2011) identified three primary content delivery methods including face-to-face, online, and hybrid instruction. Gonzalez revealed that faculty have differing attitudes and opinions about the three content delivery methods. Hashey and Stahl (2014) identified online interaction between teachers and students as either synchronous, with teacher–student interactions occurring in real time, or asynchronous, with interactions occurring at different times. Blended instruction provides more student control over the

time, place, path, or pace of content and instruction than just face-to-face instruction (Stalker & Horn, 2012).

Technology and Adult Learning

Educational technology includes a wide range of online and face-to-face resources. Online resources include learning management systems, massive open online courses, and dozens of tablet-based applications (a.k.a. app) available from app stores, such as iTunes University. Face-to-face resources include Microsoft PowerPoint, multi-media rich electronic podiums that broadcast audio and video, as well as computer-based web-resources. Many educational technologies can be incorporated into both online and face-to-face formats.

Educational technology can help bring a subject matter to life by appealing to one's senses, including sight, sound, and touch. Ginsburg (2015) saw both opportunities and threats when incorporating educational technology in adult learning. Ginsburg identified four methods for using educational technology to improve adult learning including technology as curriculum, delivery mechanism, instruction complement, and instructional tool. Using Ginsburg's framework, educational technology can be studied through teaching practices, aiding students with disabilities, and from generational perspectives.

Teaching Practices

Microsoft PowerPoint has been a staple of classroom teaching since 1995 (Ginsburg, 2015). However, adult learners expect more than just a PowerPoint presentation of course content (Ginsburg, 2015). Burrell, Finch, Fisher, Rahim, and Dawson (2011) affirmed that PowerPoint remains an important medium of

communication in higher education, but that adult learners also need real-world application from theory. Technology supports instruction in many ways, but students should also engage in teaching their courses. In their study, Burrell et al. found students were members of an active learning environment in which they explored role playing and case study exercises, among others. The students reported their experiences to their classes by re-teaching the concepts and practices they learned. As Burrell et al. concluded, "Where MBA students can arguably benefit as much from understanding the origins and theoretical frameworks of management science and organizational behavior, they also must recognize that employers are going to hire them to apply knowledge" (p. 52). Burrell et al. underscored the point that educational theory is only as meaningful as its real-world applicability. By connecting students with both investigative and reporting roles in the classroom, students forge stronger connections between theory and practice.

Gonzalez (2011) echoed the results from the Burrell et al. study (2011) that learning theory must drive teaching practices. However, Gonzalez analyzed how students and teachers perceived remote learning technology. Remote teaching technology includes any resource that is used for learning purposes outside of a face-to-face classroom. Gonzalez evaluated similarities and differences among students and teachers' responses when remote technology is used compared to when it is not used to facilitate instruction. Eighteen college instructors participated in the case study as interviewees. Each of the instructors from two different Australian campuses had taught both face-to-face and online courses. Gonzalez's study was intended to evaluate variations in teaching experiences between the two teaching delivery methods. Several themes emerged from the study pertaining to control over teaching, institutional strategy,

proper technical and pedagogical support, time pressures, willingness to use digital

technology, and requisite skills for teaching with technology. The results of the Gonzalez

study could help teacher practices in e-learning environments. The study could be

expanded to different universities and disciplines to determine additional patterns and

themes.

Heo and Lee (2013) used activity theory to assess how adult learners formally and

informally use blogs and social networks sites (SNS) in the learning process. Activity

theory is the study of how educational activities impact student learning (Heo & Lee,

2013). Heo and Lee broke from conventional platforms such as learning management

systems (LMS) to consider broad applications of web-based space as a learning activity

system. They organized their study by assigning values to web resources based on

accessibility, usability, and learning potential. Technology features, such as databases,

documents, and algorithms, were scrutinized to determine their potential benefit to

learning practices. Heo and Lee theorized that ease of use was the most important feature

aspect for their application to classroom learning. Heo and Lee concluded that there were

three dimensions of web-based adult learning activities, referred to as Web 2.0. The

three dimensions are learning as an acquisition process, a reflection process, and a

practice-based community process. Heo and Lee believed their research directly advances

the understanding and application of Web 2.0 applications and adult learning theory.

Web 2.0 applications can be integrated into learning management systems.

Students with Learning Disabilities

Hashey and Stahl (2014) provided a comprehensive report regarding online

learning accessibility for students with disabilities. They contended students with

physical, mental, and learning disabilities are an under-researched population. However, they believed online education provides a great opportunity for disabled students. Online learning gained prominence in the early 1990s and online education for K–12 students continue to grow at a faster pace than in higher education (Hashey & Stahl, 2014). However, even in traditional college programs, using the Internet for teaching and learning is now a common instructional approach. Currently, 31 states offer statewide full-time virtual schools, enrolling an estimated 275,000 students (Watson, Murin, Vashaw, Gemin, & Rapp, 2012). In fully online schools, teachers lead instruction over the Internet from separate locations using software and web-based educational delivery systems to facilitate the learning environment (Watson et al., 2012). Online interaction between teachers and students is either synchronous, with teacher–student interactions occurring in real time, or asynchronous, with interactions occurring at different times. Another approach to online education, such as blended learning provides a mixture of learning opportunities because it is paired with face-to-face instruction. Blended learning programs include online delivery, some degree of student control over the time, place, path, or pace of content and instruction, and supervised brick-and mortar locations where at least some of the learning occurs and an online delivery platform, such as a learning management system (Stalker & Horn, 2012).

Generational Perspectives

Jelfs and Richardson (2010) investigated the learning characteristics of students taking courses at the United Kingdom Open University. The scope of Jelfs and Richardson's survey was nearly as wide as the entire adult learner population taking free online courses at the college. They surveyed 7,000 people, with 4,000 responding with

sufficient information to analyze. The researchers wanted to gauge the learners'

perceptions and opinions of free online courses and attitudes of the digital technology

itself. Particularly, Jelfs and Richardson sought to study adults of varying ages and

backgrounds to gain a deeper insight into their learning styles and preferences.

Several key results emerged from the study. Jelfs and Richardson (2010)

determined that most adult learners had their own computers and had personal access to

the internet. However, the younger students, aged 18-30, had additional technologies that

their older counterparts did not. Jelfs and Richardson theorized that many adult learners

have become comfortable with basic online education, but their technological prowess

was not as substantial as younger, traditional college-aged students. Interestingly, Jelfs

and Richardson identified age 30 as only a minimally important age divisor

overall. Students older than 30 were identified as the adult learners with essential

educational technologies while students under 30 were categorized as the more

technologically-savvy students. Jelfs and Richardson suggested that further research

could be conducted to determine if there are differences in achieved or demonstrated

learning outcomes based on generational differences.

Like Jelfs and Richardson (2010), Jones and Healing (2010) reviewed learning

characteristics among Digital Natives, students born between 1985 and 2000. Digital

Natives, also called the Net Generation, are the first generation of college students to

have used technology throughout their educational lives (Jones & Healing, 2010). Jones

and Healing researched how the digital natives chose technology to use for

learning. Specifically, they wanted to identify how first year English students' attitudes

and perceptions were shaped. They completed a mixed methods approach and their

interview data determined that their results were complicated and raised more questions than they answered. Jones and Healing contended research must continue to better understand the connection between adult learning theory and educational technology.

Theory and Practice

In education, theory and practice form the essential building blocks of the learning process (Unver, 2014). Theory is the arrangement of ideas and concepts that contribute to knowledge (Smith, 2010). Practice is the application of ideas and concepts to a real-world situation (Ginsburg, 2015). Theory is abstract and conceptual; whereas, practice is an activity. Dewey (1934) established the foundational concept that theory is as vital to practice as practice is to theory. Although one may exist without the other. When theory meets practice, the relationship becomes dynamic and symbiotic (Jiao, Venkat, Han, & Weissman, 2014). So, theory informs practice, but practice also informs theory.

Smith (2010) suggested that educators must adopt their teaching practices, theories-in-use, to existing and expanding learning theories. Smith identified three ways educators can move from theory to practice. First, educators must ensure their learning is contextualized by making learning culturally, personally, and professionally relevant. When educators connect personally with their students, educators can better understand students' concerns and desires. Secondly, students must be empowered in the learning process. Smith contends that actualized learning should liberate students by creating an "ah ha" moment. Lastly, educators should promote collaborative learning that crystallizes individual and collective awareness. Smith posited that the reason learning outcomes are often not met is due to a lack of congruence between espoused theories and

theories-in-use. The first part of this paper discusses how technology can be incorporated into adult learning theory.

Disconnect between Theory and Practice

The best ideas do not always lead to the best practices. Within the field of education, there are noted differences between theory and practice. Unver (2014) noted that teachers have a particularly difficult time applying theoretical knowledge into practice. He discovered teachers often developed curriculum or lesson plans believing they are preparing an excellent course or class session. However, sometimes when lesson plans are delivered in the classroom, students' shrug their shoulders and look blankly back at the teacher. Unver noted that the teacher may deduce that the learning objective was not met and that student learning did not occur as the teachers had planned. Smith (2010) called this the void between planning and implementation.

Unver (2014) posited that one of the best methods to connecting theory to practice is through pre-service teacher education programs. Adjusting teaching practices during a semester can often be effective; however, making major adjustments to teaching style should go through a dress rehearsal first. Unver highlighted an example at Dilit Teacher Education Center in Turkey. At the Dilit Center, teachers tried several different teaching approaches of the same content to real students. The students rated and explained the approaches they preferred. Further, teachers' presentations and activities were video-taped so the teachers saw themselves from the students' perspectives. Unver concluded that theory was best applied to practice when teachers encouraged students to think critically through group discussion and reflective writing exercises. Critical thinking exercises can be built into discussion forums in a learning management system. By doing

so, instructors can reinforce key concepts following a face-to-face class session (Unver, 2014).

E-Learning Theory and the Practice of Adult Education

Around 1985, adult education was a new concept that was just beginning to emerge on some colleges across the country. Fifteen years later, most colleges had robust adult education programs that became a key economic resource (National Center for Education Statistics, 2014). In 2000, e-learning was a relatively new concept that was just beginning to surface at colleges. Fifteen years later, e-learning is poised to replace face-to-face learning as the leading form of instruction to college students (NCES, 2014). Adult education and e-learning were once outsiders in higher education. In 2015, they are both major contributors to colleges nationwide (NCES, 2014).

Colleges are no longer considering if they should have adult education programs, they are mainly evaluating which types of programs they should have, how they can grow their existing programs, and how curriculum should be delivered to adult learners (Ross-Gordon, 2010). There are several e-learning resources each providing different learning methodologies, opportunities, and challenges. The most commonly used e-learning resources are massive open online courses (MOOC), LMS (e.g., Angel, Blackboard, and Moodle), and auxiliary resources such as Facebook. Among the many e-learning considerations, colleges must also carefully assess which e-learning resources students prefer and which resources produce the best student learning experience and learning outcomes.

Student Competencies

Parkes, Reading, and Stein (2013) pursued the role of competencies in effective student performance in an e-learning environment using a learning management system. Parkes et al. found 58 essential e-learning competencies of which 22 involved technologies. The researchers found the balance of 36 competencies included practices consistent with social constructivist framework, a theory which suggests meaning is derived by one's senses in the natural world. Their research concluded that student interaction was not considered an important competency in the online learning process. Parkes et al. contend their findings directly refuted what prevailing social constructivist theorists had suggested was a vital component to online education. Parkes et al. urged researchers to explore if and how social constructivism theory relates to e-learning.

Varney and Pack (2012) asserted that colleges must have academic advisors who are dedicated specifically to adult learners. Colleges recognize the value adult learners provide them through increased revenue, but they often do not appear to reinvest the funds to support non-traditional students (Lane, Michelau, & Palmer, 2012). Academic advisors must be tuned to the unique needs of adult learners including not only time constraints, but other stressors such as work obligations and family issues (Glodek, Link, & Peason, 2011). Ideally, academic advisors should provide basic technology troubleshooting themselves. If not, academic advisors should be able to direct students to the appropriate resource. Quick and simple resolutions to complicated issues are important to all students, but particularly adult learners who place a premium on time (Lane et al., 2012).

Mammadov and Topçu (2014) found that the students engaged with e-mentoring

had high motivation and desire, and they could maintain their perseverance to complete required individual and group tasks. The study revealed that the students formed an efficient and interactive group and worked collaboratively to resolve common issues. They could find a way of working as a community which deepened their awareness as college students (Mammadov & Topçu, 2014).

Adult learners have become increasingly drawn to non-traditional college programs (Marques, 2012). A viable alternative to traditional college programs are accelerated programs in a cohort format (Spaid & Duff, 2009). Marques (2012) contended accelerated learning is valid and rigorous even though teaching concepts and formats vary from more familiar traditional courses. Marques referenced the survey results from a study conducted by Daniel (2000) which indicated 217 of 424 colleges surveyed had "intensive course formats" (p. 103).

Massive Open Online Courses

Martin (2012) evaluated how massive open online courses (MOOC) will impact higher education. Several similarities and differences between MOOC's and standard online courses were evaluated. Stanford's A1-Class.com is referenced as a common model for MOOC's. Martin also discusses his practice of moving much of learning management system content to MOOC's at the University of Massachusetts – Lowell. By doing so, Martin supports divesting educational proprietorship in favor of free and open academic enterprise. Martin has changed his approach to online education to reflect more of the ease of use of MOOC's. By pairing the popularity of MOOC's with the prestige of institutions like Stanford, some researchers contend that online education will only continue to increase in accessibility, convenience, and appeal for adult learners.

Thrun (2012), a cited scholar in the research, stated it is, "amazing we can probably offer a master's degree of Stanford quality for free" (p. 28).

Discussion forums are the most commonly used learning activity in online courses (Baxter & Haycock, 2014). Baxter and Haycock (2014) compared how discussion forums were used in online courses and massive open online courses (MOOC). They expanded their research scope to analyze how online media and innovative technology resources affected online tutors who assist students with learning technologies. They found that online tutors play an important role in helping online students succeed and argued online tutors indirectly assist with student retention and progression in distance education.

The case study conducted by Baxter and Haycock (2014) focused on 1,000 students at a large distance learning university. The students participated in large discussion forums, called a community of practice (COP). The researchers concluded that students who were effective contributors to the COP had higher levels of self-efficacy, identity, and persistence than those who were ineffective contributors. Effective contributors were identified as students who posted meaningful, well-articulated, and documented responses to the COP. Ineffective contributors were students who posted inconsistently and whose posts lacked depth and insight. Baxter and Haycock offered a unique view of student psychology and online education. MOOC's are usually hosted in an LMS. For example, Stanford University hosts their MOOC's in a proprietary LMS called Class Central (Class Central, 2015).

The Role of a Learning Management System in the Learning Process

A learning management system (LMS) is a software program that facilitates electronic learning through administration, content, and grading (Dias & Diniz, 2011). LMS are used to support face-to-face, online, and blended learning course formats (Ross-Gordon, 2011). Dias and Diniz (2014) studied the unique opportunities and challenges of LMS in blended learning, also called b-learning. They completed an empirical study that identified adults' learning styles. Their goal was to improve learning through feedback to personalize the learning experience in blended courses. They studied 36 undergraduate students a public university. They used a mixed method design with semi-structured and face-to-face interviews. As a result of their research, they established three categories within an interactive learning environment including Information and Communication Technologies (ICTs), teachers' beliefs and theories, and students' training and practices.

Like Dias and Diniz (2014), Gary (2013) evaluated LMS from a student's perspective. Gary contends faculty members typically design their LMS around their own learning styles and learning objectives. Faculty members do not often consider the LMS from a student's point-of-view. Gary's purpose was to analyze students' and alumni perceptions of how faculty members integrate LMSs into their courses. Gary used online survey and sampling methods to gather students' opinions and feelings about faculty usage of LMS among different courses at Tennessee State University. His study of 60 undergraduate students determined that instructors needed to incorporate the LMS gradebook more frequently. Gary noted students found some LMS resources as too gimmicky, including the audio-text application, which was the least liked function in the LMS. Gary recommended expanding surveys in other subjects and colleges to further

evaluate the study's findings. Gary suggests that colleges should incorporate regular faculty training based on college-specific research about students' perceptions of LMS at their institution.

Learning management systems (LMS) have many functions in the learning process. Not only are they used in face-to-face, online, and blended format courses, they are used in individual and interdisciplinary subject courses. Yong and Mills (2014) scrutinized the role of information and communication technologies (ICT) in interdisciplinary learning. Like Dias and Diniz (2014) and Gary (2013), Yong and Mills honed their research around student perceptions of LMS. However, their study looked at an interdisciplinary course in information technology and visual design in which LMS was used. They also targeted just first year students to gain their early perceptions of LMS at the college level. Yong and Mills found faculty who taught freshman-level courses used LMS more often and more extensively than faculty who taught upper-class students. The researchers concluded that ICT-based interdisciplinary learners prefer a self-directed and collaborative instructional process. They also prefer consistent faculty involvement and guidance in the online learning experience.

Liu and Li (2012) investigated the relationship between an online learning system and adult learning. Specifically, the researchers sought to evaluate how a learning system could function as a collaborative media support for adult learners. Their research involved a mixed method approach of quantitative analysis and qualitative summary. At a western state university, 168 graduate students were involved in the study over two semesters. All participants had taken both face-to-face and online courses. The researchers concluded that the online learning community is characteristically consistent

with adult learning theory by Knowles (1980), Cranton (1992), and Lai (2011). Further, Liu and Li contended that a hybrid environment would "add into the decisions of the design of instructions" (p. 142). This research provides educators with information about how WebCampus, a learning management system, can be used to enhance face-to-face and online courses. Additional social media resources such as Facebook, Google, and Twitter could be incorporated into WebCampus to widen its versatility and familiarity.

Vogten and Koper (2012) argued that a "centrally governed Learning Management System (LMS) still has ample legitimacy in an information society that is ever more adopting cloud computing services in daily life" (p. 1). Their research analyzed specific code, data that is used among all LMS for learning exercises. The Liferay Portal was used to capture, organize, and extrapolate code from various LMS languages and platforms such as HTML, Java, and SQL. A quantitative method was used to organize the numerical data and determine percentages of like and unlike codes. The data were organized into four primary LMS categories including social and collaborative requirements, content management/publishing requirements, portal requirements, and LMS requirements. Their research concluded that 80% of standard code was consistent and transferable from one LMS to another. Only 20% of code needed to be developed specifically to an individual LMS. Lui and Li noted code was used within an LMS for features such as security, flexibility, stability, and scalability. An LMS is a software program, that can be centrally-housed or cloud-based, that facilitates learning in either face-to-face, online, or hybrid format courses. Research indicates when instructors incorporate an LMS in face-to-face classes, deep learning, or learning retained for several years, is more likely to occur. Although extensive research has been conducted regarding

how a learning management system relates to student learning in higher education, more research must be conducted to understand how adult learners uniquely may benefit for an LMS in a hybrid, non-traditional course.

Auxiliary E-Resources

Facebook is a social media network started by Zuckerberg, and four of his roommates, at Harvard University in 2004 (Snyder, 2015). Facebook has been and continues to be a widely popular social media site. As of 2015, there were over 1.3 billion active Facebook members (Snyder, 2015). Wang, Lit Woo, Lang Quek, Yang, and Liu (2012) wanted to find a way to incorporate the resource that is already used by so many people worldwide into enhancing learning. Wang et al. sought to make Facebook into a learning management system of its own. In their study, Wang et al. used the Facebook "Group" feature to post announcements, conduct online discussions, and coordinate weekly activities. Their study was conducted at a teacher institute in Singapore. Wang et al. surveyed the perceptions of the users to understand how Facebook functioned in comparison to the other LMS. Facebook was an effective resource for many of the basic LMS functions including announcements, online discussions, and weekly communication. However, Facebook also had significant limitations. Facebook accepted only a few file formats and discussions could not be threaded to show a progressive conversation. Wang et al. determined that students were more concerned about privacy and safety than they were interested in using Facebook as an LMS again in the future.

Rosen (2013) provided a concise overview of how college instructors can incorporate various content management systems (CMS) into an existing learning

management system (LMS). CMS includes applications such as Live Binders, Net Texts, Dropbox, Moodle, Evernote, and Pinterest, among many other electronic resources. Rosen provided simple suggestions for instructors based on his research incorporating the content management systems into LMS. Rosen discussed how CMS can augment or facilitate existing instruction and learning in both face-to-face and online courses. Rosen recommended storing formative assessments in each learning resource to determine to help determine which resource might work best with one's specific LMS. Rosen's research is useful for college instructors looking for simple, practical advice on using content management systems within their LMS.

Suell and Whitsett (2013) sought to find the best method of instruction based on certain characteristics selected by online participants. Ninety-three traditional college students, from four different classes, were sampled. A standard Likert-scale and interview format were used to gather data in the qualitative study. The purpose of Suell and Whitsett's research was to explore students' preferences and effectiveness among various learning exercises conducted through a learning management system (LMS). Interestingly, data analysis concluded that there was no statistically significant difference in the methods based on the Likert scale. However, when participants rated the activities in their own words, the clear favorite was discussion boards. The authors provided additional research that also supported similar conclusions in separate case studies. Suell and Whitsett's findings reinforced the positions of Dias and Diniz (2014), Gary (2013), and Rosen (2014) who state that the informed practices of students must guide e-learning theory.

Computer mediated communication (CMC) provides learner-based online communities to promote active e-learning. Wichadee (2014) reviewed student learning records from a Learning Management System (LMS) to evaluate student motivation patterns in e-learning. Wichadee observed that when students reported a deeper connection and understanding of the course subject, the more motivated they were to produce higher quality work. Wichadee deduced there were no distinctions between motivation and learning behavior between male and female students. However, female students demonstrated higher critical thinking in online discussion forums. Wichadee concluded *explaining* messages appeared most frequently and *interpreting* messages appeared the least often, meaning students typically demonstrated basic content knowledge primarily and abstract subject synthesis secondarily.

Summary

Steinbeck (1937) stated, "The best laid schemes [plans], often go awry" (p. 149). The familiar quote is true when analyzing the relationship between theory and practice. In education, Unver (2014) suggested establishing teaching based on sound theory, but practicing teaching before class time. Three aspects of adult learning theory and technology were presented including teaching practices, students with learning disabilities, and generational perspectives. More specifically within e-learning theory and the practice of adult education, student competencies, massive open online courses, learning management systems, and auxiliary e-resources were discussed. Although there is much research pertaining to adult learning theory and e-learning theory, those theories will continue to be reexamined by 21st century teaching practices.

Jelfs and Richardson (2013) conducted an extensive case study of 7,000

traditional and non-traditional students. Nearly all the students had access to a computer and the internet, but younger students were more likely than older students to have access to other technologies, to spend more time using those technologies and to have access to other technologies, to spend more time using those technologies and to have more positive attitudes to digital technology. Although younger learners are more adept and accustomed to technology, adult learners expect it to be part of their learning experience. Colleges must develop and implement a strategic technology plan for adult learners.

Liu and Wenzhen (2012) determined that the online learning community is characteristically consistent with adult learning theory by Knowles (1970, 1975, 1980), Cranton (1992), and Lai (2011). So, adult learning theory and educational technology are complementary. Further, Lie and Wenzhen contend that a hybrid environment would "add into the decisions of the design of instructions" (p. 142).

Education has changed markedly over the past 20 years through a sharp influx of adult learners. Although adult learners appear poised to retain a prominent place on college campuses for many years, technology will likely forever be a part of education (NCES, 2014). Colleges must ensure they develop a comprehensive strategy for assessing, implementing, and evaluating technology resources to help adult learners achieve academic success today and tomorrow.

Chapter 3: Research Method

There was a steady increase in educational technology over the past 30 years (Bair & Bair, 2011). The increase of technology in higher education changed how students learned and instructors taught (Bair & Bair, 2011). Although there was extensive research on adult learners (Knowles, 1980; Kolb, 1984; Ross, 2009) and learning management systems (Burrell, Finch, Fisher, Rahim, & Dawson, 2011; Messemer & Hansman, 2012), there was little research connecting the two (Weimer, 2014). Many colleges and universities provided training for students and instructors on how to use learning management systems (Buckenmeyer, Hixon, Barcyzk, & Feldman, 2011). However, there was little attention by institutions on how adult learners preferred to use a learning management system (LMS) in non-traditional programs (Messemer & Hansman, 2012).   There appeared to be limited research focused on how instructors used an LMS to improve learning outcomes among adult learners (Weimer, 2014).

Adult learners desired and expected an LMS to be used by instructors in face-to-face, non-traditional courses (Weimer, 2013). However, when an LMS was used ineffectively by instructors, adult learners withdrew from hybrid courses more frequently than when an LMS was used consistently with adult learners' expectations and preferences (Maddix, 2013). In exclusively online courses, college students reported feeling isolated which contributed to even higher levels of attrition (Maddix, 2013). When communication between students and instructors was poor, both students and instructors reported feeling frustrated with online instruction (Beebe, Vonderwell, & Boboc, 2010).

The purpose of this qualitative, multiple case study was to evaluate how a

learning management system, Moodle, was used by students and instructors in a non-traditional, degree-completion program at a private, four-year college. The phenomenon that was studied was how a learning management system was used to facilitate learning and learning outcomes in a non-traditional, degree-completion program. The results of the research may inform instructors and instructional designers on the LMS preferences of adult learners. By better understanding adult learners' preferences instructors and instructional designers may be able to build more effective and meaningful hybrid courses.

For this study, adult learners were students who were at least 25 years of age or older. All adult learner participants were actively enrolled and participating in a degree-completion program at Midwest University, or had graduated from a degree-completion program no more than one year prior to the study. For this study, instructors were adjunct, part-time, or full-time faculty members who taught face-to-face, online, or hybrid courses at Midwest University for one or more years. Instructor participants were comprised of academic ranks varying from instructor, assistant professor, associate professor, and full professor.

The following two research questions were used to guide the study:

Q1. How does a learning management system (LMS), such as Moodle, influence non-traditional students' learning outcomes managed in a blended learning setting in the Applied Organizational leadership (AOL) degree completion program at Midwest University as perceived by students and instructors?

Q2. How can a learning management system (LMS), such as Moodle, improve non-traditional students' learning in the Applied Organizational Leadership (AOL)

degree-completion program at Midwest University as perceived by students and instructors?

This information in the chapter includes several sections that comprise the project's case study design (Yin, 2014). The sections are: 1) research methods and design, 2) population, 3) sample, 4) materials/instruments, 5) data collection, data processing, and data analysis, 6) assumptions, 7) limitations, 8) delimitations, 9) ethical assurances, and 10) summary.

Research Methods and Design

There are many qualitative and quantitative research methods (Johnson & Christensen, 2012). A thorough review and selection of the most appropriate method was conducted prior to gathering data (Cozby & Bates, 2012). The qualitative research method was selected for this project as explained in the following section. Qualitative research includes five primary research designs including: 1) biography, 2) ethnography, 3) phenomenology, 4) grounded theory, and 5) case study (Yin, 2014). Each study included its own method, data analysis, and research report. The case study design was selected for this project as explained in the following section. Prior to collecting data, the project was reviewed by and receive approval from the Northcentral University Institutional Review Board (IRB) and Midwest University IRB.

Research method. There were many important distinctions between qualitative and quantitative research (Johnson & Christensen, 2012). One of the key differences pertained to the study group, or target sample (Johnson & Christensen, 2012). Qualitative research typically included a smaller group that is fixed or purposefully selected; whereas, quantitative research used a larger pool that was randomly selected.

Another difference between the two was qualitative research implied subjectivity by the

researcher, but quantitative research expected objectivity. Qualitative research involved

relationship phenomena (Johnson & Christensen, 2012) and interviews (Yin, 2014)

among many other factors. The research included both of those factors. Therefore,

qualitative research was selected for the study because the relationship of adult learners

and a learning management system (LMS) were explored (Johnson & Christenson, 2012).

Further, students and instructors were interviewed to gather sufficient data to develop a

hypothesis (Yin, 2014). The project included data from both students and instructors, so

it was a multiple case study.

Research design. Yin (2014) identified five primary qualitative research designs

including: 1) biography, 2) ethnography, 3) phenomenology, 4) grounded theory, and 5)

case study, although there were many other designs. Biography is used when studying a

single person or a group people (Yin, 2014). The research did not report on a single

person or a group of people as the primary focus, so biography was not selected for this

project. Ethnography is the study of a group of people in a natural environment over a

long time (Yin, 2014). Because the research studied two groups of people over a

relatively short period, six to eight weeks, ethnography was not selected for this project.

Phenomenology is the study of people's experiences in the context of the meaning of a

phenomenon, an event, or factor (Yin, 2014). The research did not study the meaning of

a phenomenon, so phenomenology was not selected for this project. Grounded theory

was used when researchers sought to develop a new theory (Yin, 2014). Because the

research added to existing theory and did not establish a new theory, grounded theory was

not selected for this project. Lastly, a case study is useful for research questions that

include "how" and "why" (Yin, 2014, p. 4). Because both research questions began with the interrogative word "how," the case study design was selected for this project.

Population

The population in this study was comprised of students and instructors (Yin, 2014) from a private, non-profit university located in the Midwest region of the United States. The college studied was given a pseudonym of Midwest University (MWU). MWU had an approximate annual enrollment of 100 students and 50 instructors in the non-traditional, degree-completion program within the School of Business. The population was enrolled in one accelerated, degree-completion program within the School of Business. This population was selected because they were adult learners participating in a non-traditional, degree-completion program meeting the population scope of study outlined in the problem and purpose statements. The LMS used by students and instructors at MWU was Modular Object-Oriented Dynamic Learning Environment (MOODLE). Moodle was used in a variety of methods and frequency in all face-to-face, online, and hybrid courses at MWU.

Sample

For this qualitative, multiple case study, two cases (units of analyses) were recruited and purposefully selected from the population of 100 students and 50 instructors. The sampling size included enough participants to ensure the data is accurate and representative of the population size and saturation was met (Yin, 2014). Typically, a sample size of 10% was sufficient to be representative in case studies (Yin, 2014). Accordingly, the first sample is 10 students and the second sample is 10 instructors (N=20). The student sampling is 10% of the total student population and the instructor

sampling is 20% of the total instructor population (Yin, 2014).

The research was coordinated with the IRB at MWU. The researcher provided the IRB coordinator with an e-mail request for qualified participants for the study (see Appendices A & B). The IRB coordinator allowed the researcher to review, approve, and send the request to prospective students and instructors who met the criteria outlined in the previous section. The researcher collected responses from interested students and instructors. The researcher reviewed the criteria of interested students and instructors to verify they met the requirements for participation in the study. The first 10 qualified students and the first 10 qualified instructors were included in the study. The qualified participants were contacted via e-mail to confirm their voluntary participation (see Appendices C & D). The participants were asked to sign an Informed Consent that was approved by the IRB at Northcentral University and MWU (see Appendices E & F).

Materials/Instruments

A qualitative, multiple case study of adult learners was conducted through semi-structured, open-ended electronic interviews as the primary research method. The interviews were conducted in the summer of 2016. The interviews were intended to illicit unreserved, individual, and confidential responses and provide a uniformed framework for meaningful feedback. There were three data collection sources (see Table 1). To collect data, there were two data collection instruments including 1) an interview guide (see Appendices G & H) comprised of ten interview questions, 2) ten syllabi that included measurable objectives for the learning management system in a non-traditional course, and 3) ten grading rubrics that included learning outcomes for the learning management system in a non-traditional course. Instructors participating in this study

provided the syllabi and grading rubrics. The syllabi and grading rubrics were reviewed using a document review form (see Appendix I).

Table 1

Data Collection Sources

Collection Tool	Purpose
Interview	Acquire information about students' and instructors' familiarity and preferences using an LMS in face-to-face courses
Syllabus	Acquire information about course design/format, learning assignments, and gain an understanding of instructor usage of an LMS for courses studied
Grading Rubric	Acquire information about course grading criteria for courses studied

Interview guide. This case study explored the "how" and "why" questions about a phenomenon (Yin, 2002, pp. 13-14). Yin concluded that the best method of addressing qualitative data was through externally-validated and semi-structured questions. The interview guide was comprised of an interview protocol and questions. There were two different versions of the interview protocol; one for students (Appendix G) and one for instructors (Appendix H). The interview questions were posed to students and instructors during the scheduled interviews. The interview guide was validated using an expert panel of reviewers (i.e., dissertation committee and researchers' colleagues; fellow faculty members within the field of study). All reviewers were non-research participants; none of their data was used in the study itself. The purpose of the review was for the interview to be analyzed by the members who functioned as neutral, external content authorities. Based on feedback from the reviewers, the instrument was revised, as required.

Document review recording form. Syllabi and grading rubrics were evaluated

by using a document review recording form as a data collection instrument (see Appendix

I). The same review process used to validate the interview guide was used to validate the

recording form. Based on feedback from the reviewers, the instrument was revised, as

required.

The application of the data collection instruments was based on Keller's (2000)

ten-step ARCS Learner Motivation Model. Keller identified four key characteristics of

learner motivation including attention, relevance, confidence, and satisfaction. Keller's

characteristic of confidence was particularly applicable to this research because adult

learners often felt unprepared to work with technology in an educational setting (Ross,

2010). Keller (2000) contended that each of the four characteristics represented essential

conditions for a learner to be optimally motivated (p. 2). Keller updated his research

continuously since his original report in 2000 by incorporating feedback from learners

and instructors alike. Keller's focus on both students and instructors made the model

particularly useful for this study. The ARCS model was modified with three aspects for

each of the four main categories. Keller also expanded his research over the past 15

years with a multinational cross-validation study. Keller further studied the relationship

between computer-based learning and motivation. Keller served as a peer, but will not be

a research participant.

Data Collection, Processing, and Analysis

Upon approvals by the IRB's at NCU and MWU, data collection commenced.

The research was coordinated with the IRB at MWU. The researcher provided the IRB

coordinator with an e-mail request for qualified participants for the study (see Appendices

A & B). The researcher reviewed, approved, and sent the requests to prospective students and instructors who met the criteria outlined in the previous section. The researcher collected responses from interested students and instructors. The researcher reviewed the names of interested students and instructors to verify they met the required criteria for the study. The first 10 qualified students and the first 10 qualified instructors were included in the study. The qualified participants were contacted via e-mail to confirm their voluntary participation (see Appendices C & D). The participants were asked to sign an Informed Consent that was approved by the IRB at Northcentral University and MWU (see Appendices E & F). All participants were made fully aware of any liabilities or risks associated with the study. The study maintained full compliance with the Internal Review Board (IRB) at Northcentral University (NCU) and data collection, processing, and analysis were completed for each of the data sources.

      Data collection. Three sources were used to gather data for the research (see Table 1). First, an electronic interview was used to acquire information about students' and instructors' familiarity and preferences using an LMS in face-to-face courses. Electronic interviews were conducted by telephone. The online conferencing application Skype closely replicated a live interview, as it combined the benefit of seeing and hearing a participant during the interview (Hanna, 2012). Participants were given the opportunity to participate using Skype; however, no participants were interviewed using this online conferencing tool. Telephone interviews were useful for this study because they offered participants control over their location, environment, and schedule (Holt, 2010). Telephone interviews were just as effective in collecting data as face-to-face meetings (Holt, 2010).

All electronic interviews were digitally recorded using the Voice Recorder application available on the researcher's phone. Recording interviews was an important method of ensuring data was accurate and thorough (Yin, 2014). All participants were informed the electronic interviews were recorded. Their consent was obtained in writing through the Informed Consent form (see Appendices E & F) and by acknowledgement of their consent by the researcher at the beginning of the recording (Yin, 2014).

Secondly, using the document review recording form, instructors' syllabi were reviewed to acquire information about course design and format, learning assignments, and to gain an understanding of instructor usage of an LMS for courses studied. Thirdly, using the document review recording form, instructors' grading rubrics were reviewed to acquire information about course grading criteria for courses studied. Data was collected using Maxwell's (2005) Data Planning Matrix (p. 100). The revised matrix (see Appendix K) consisted of five primary data collection aspects including the explorative questions of what, why, what kind, and where, timeline, and a section to capture additional data.

The researcher recorded responses from the participants on the interview protocol form. The researcher requested clarification and additional information when necessary. Following the electronic interview, the researcher reviewed the notes with the participants to ensure their comments were recorded accurately and completely (Yin, 2014). Electronic recording served as an archive of the electronic interview. Participants could review the electronic recordings and researchers' notes in which they participated, upon request, although no participants requested to do so. The researcher recorded all communication with the participants before, during, and following the study in a

Microsoft Excel file entitled Participants Records.

Data coding. Data from the interviews were transcribed manually by, Cynthia Fullmer, a professional transcriptionist with MediScripts Transcription. Then, the researcher coded the transcripts using a Microsoft Excel spreadsheet in preparation for identifying emergent themes. Coding was the process of dividing data into sections based on criteria (Yin, 2014). By reducing sections based on descriptions, conceptual categories emerged (Yin, 2014). Codes were an important part of qualitative research involving case studies because they were analyzed and organized into patterns. Identifying patterns was useful for interpreting data and developing conclusions and recommendations (Yin, 2014).

Member checking was conducted during the data processing phase. This technique was a common practice of ensuring accuracy and validity of recorded information in qualitative research in which interviews were used (Barbour, 2001; Byrne, 2001; & Doyle, 2007). Member checks involved transparency between the researcher and the participants (Creswell, 2009). The researcher initiated and maintained open information exchange with participants before, during, and following the study (Creswell, 2009). By doing so, the researcher reduced the likelihood of incorrect data or incorrect interpretation of data (Moustakas, 1994). The primary goal of member checking was to produce findings that were original and reliable (Moustakas, 1994).

The following procedure comprised the member check. The researcher included several forms that were available for participants to review, at any time, during the study. The forms were included as appendices and included E-mail Request for Participants (Student and Instructor versions), E-mail Request for Voluntary Participation (Student

and Instructor versions), Informed Consent (Student and Instructor versions), Interview

Questions (Student and Instructor versions), and Document Review Form (Instructor only

version). The e-mail communication with participants included three primary

components. The first component asked participants to verify the accuracy and

completeness of their paraphrased responses as recorded by the researcher. The second

component asked participants to select any specific quotes they wanted included in the

report of findings. The third component affirmed to the participants that their real names

and company names were not included in the report of findings. Pseudonyms were used

to identify individual responses.

Participants were allowed five days to respond to the researcher's e-mail requests.

Any changes, corrections, or clarifications requested by the participants, were completed

by the researcher. The researcher then provided a revised e-mail to the participants to

confirm that their information was accurately and completely captured. If participants

did not respond within five days, the information presented in the e-mail was considered

accurate and complete. Further, the researcher assumed participants provided their

permission to use the information in the report of findings.

Data analysis. Interviews were conducted by telephone or Skype to obtain data.

The researcher recorded notes on the interview protocol during the interview (Yin, 2014).

A transcriptionist manually transcribed data from the interviews. Following data

transcription, data analysis began. Explanation building was the analytic method used for

data analysis (Yin, 2014). The explanation building technique helped answer the "how"

of the research questions (Yin, 2014). Data coding was the first step in organizing the

interview data. Grounded theory was used analyze the data (Yin, 2014). Conclusions

and recommendations were presented following the data textual analysis and connected to the respective research questions the data answer.

Data handling and storage. Woodgett (2012) posited that most research mistakes were unintentional and some were unavoidable. However, there was extensive scholarship regarding the damaging effects of research mistakes and negligence (Cozby & Bates, 2012; Lange, Rogers, & Dodds, 2013; & Leedy & Ormrod, 2013). A common practice among doctoral students, all data was also stored in Microsoft Excel software (Cozby & Bates, 2012). The Excel file was password-protected and stored on the researcher's password-protected computer. This ensured data privacy and prevented unauthorized access. All personally-identifiable information collected during the research remained confidential. Pseudonyms were used to protect participants' confidentiality, including reporting singular data. The data will be retained for five years following completion of the research. Following five years, data will be destroyed using the data purge tools in Microsoft Excel.

In accordance with NCU's policy, the researcher used the Task Stream research management program in addition to Microsoft Excel. Task Stream was an online program that housed research articles, documentation, and the dissertation manuscript. Each draft of the dissertation was uploaded to the program. All additions, corrections, and revisions were stored in Task Stream. Task Stream provided a consistent, continuous, and complete perspective of the dissertation work from beginning to end. By using Task Stream, the researcher provided data transparency throughout the research process.

Assumptions

Qualitative inquiry consisted of the natural subjectivity of both researcher and

participants (Johnson & Christenson, 2012). Social constructivism guided this study, meaning individuals desired comprehension of and meaning within their environment (Johnson & Christenson, 2012). Social constructivism was the relationship between a subject(s) and an object(s) (Johnson & Christenson, 2012). For this study, three primary methodological assumptions were made. First, it was assumed the primary relationship was between adult learners and their learning centers (e.g., classroom and learning management system). Second, it was assumed credible participants were chosen based on the selection criteria. Third, honesty and accuracy by the participants was also assumed. This includes honesty pertaining to self-identification (e.g., age, gender, race, and ethnicity) and academics (e.g., study or work time and grades). This also included accuracy of information presented by participants during the electronic interviews and accuracy of information included in instructors' syllabi and grading rubrics. The last assumption was that saturation was met based on the estimated sample size; if saturation was not met, additional participants were recruited and selected from the greater population.

Limitations

Qualitative research was an arduous process and results were not guaranteed (Cao, 2007). Further, qualitative research was not always reproducible or expandable by other researchers (Cao, 2007). Beck's (2009) five criteria of authenticity, confirmability, credibility, dependability, and transferability were used to evaluate the reliability and validity of the study. There were five primary limitations in the study. First, the transferability of the findings was limited to adult learning theory, educational technology, and non-traditional programs (Johnson & Christenson, 2012). Second, the

sample size, comprised of two case studies, was limited to 10 students and 10 instructors. Third, the setting of the study was limited to one degree-completion program from one private Midwestern university. Fourth, the study was limited to student feedback and instructor-provided documents, including syllabi and grading rubrics. Fifth, the study only included individual student grades pertaining to achieving learning outcomes which limits information pertaining to academic achievement.

Delimitations

The study was delimited to adult learners, non-traditional program instructors, and a non-traditional program. The participants for the study were selected based on the following criteria: 1) students were adult, degree-seeking students in a non-traditional program, and 2) instructors taught non-traditional, hybrid courses. The setting of the study was one degree-completion program from one private Midwestern university. The setting and program were delimited to reduce external variables within the study (e.g. only one adult learner population, only one degree-completion program, and only one subject department).

Ethical Assurances

Rissanen and Lofstrom (2014) believed that ethical research was fundamental to advancing scholarship in higher education. Research in any academic field was a rigorous process of discovery, analysis, and composition. The researcher included three primary quality measures to assure ethical compliance including scientific method, researcher bias, and participant protection.

Scientific method. The scientific method was a common approach adopted by scholars to provide a standardized framework for academic inquiry. The scientific

method was employed in this study by identifying the research problem, conducting literature review, specifying the research purpose, determining research questions, organizing a conceptual or theoretical framework, establishing a methodology, collecting data, analyzing, and interpreting data, reporting, and evaluating the research, and communicating research findings and recommendations (Doyle & Buckley, 2014).

Researcher bias. Although the study incorporated the scientific process with precise steps, this research was also an exploration of the unknown. Therefore, a moral compass guided the researcher to ensure the work was accurate, objective, and ethical. Research was an exercise in faith. The intent of this study was to produce meaningful results. However, the researcher was aware that research was also established on trust and built upon the work of other scholars. Therefore, the researcher ensured other scholars accurately reported authorship, reliability, validity, and findings.

Participant protection. All participants were clearly and fully-informed of any risks anticipated in the study. All participants were asked to sign an Informed Consent protecting their rights and voluntary participation in the study. To address research bias and to validate data, member checking was used in the study. Participants could review the researcher's executive findings. The researcher addressed all concerns and questions posed by participants with a record maintained in the Participants Record file in Microsoft Excel. The researcher sent invitations by e-mail to students and instructors for participation in the study. No names were recorded during the study. Participants were identified by numbers that served as their pseudonyms. Only basic demographic information such as age, race, gender, and ethnicity was associated with each pseudonym.

The researcher adhered to the aforementioned standards and practices of privacy,

confidentiality, and anonymity. The researcher adopted Northcentral University's confidentiality and anonymity form available through the Dissertation Center. The researcher provided a copy of the Informed Consent form to each participant. Whenever possible, the researcher reported information anonymously and in aggregate form to protect the identity of the participants. Because the research was intended to benefit students as well as professors, human subjects understood their involvement contributed to improved experiences for future students and themselves potentially. The proposed research did not require studying minors so parental consent was not anticipated to be a factor in the research.

Summary

This research method section provided the researcher's rationale for selecting the topic of examining how a learning management system affected learning outcomes among adult learners at a private, four-year college. Research was presented which identified a research gap pertaining to how a learning management system was used in one non-traditional, degree-completion program. A qualitative case study of 10 students and 10 instructors for one non-traditional program at a Midwest University was used for the proposed research topic. Ethical research included many important guidelines that researchers recognized, understood, and addressed. This chapter reviewed anticipated issues pertaining to the researcher's dissertation and explained how the researcher addressed those issues.

Chapter 4: Findings

The purpose of this qualitative, multiple case study was to consider how a learning management system (LMS), such as Moodle, was used by students and instructors in a non-traditional, degree-completion program at a private, four-year college. The phenomenon that was studied was how an LMS was used to facilitate the learning process for adult learners in a non-traditional, degree-completion program. Ten students and 10 instructors from one Midwestern higher education institution participated in this study and provided their experiences using an online learning management system (LMS), such as Moodle, in face-to-face courses. An open-ended, semi-structured interview format was used to gather data from each of the 20 participants. Additionally, instructor-provided syllabi and grading rubrics were reviewed using a document review form to determine how instructors listed their usage of an LMS in face-to-face courses.

Participant responses to the interview questions and information recorded from the document review offered data that, after analysis, answered the following two research questions:

Q1. How does a learning management system (LMS), such as Moodle, influence non-traditional students' learning outcomes managed in a blended learning setting in the Applied Organizational leadership (AOL) degree completion program at Midwest University as perceived by students and instructors?

Q2. How can a learning management system (LMS), such as Moodle, improve non-traditional students' learning in the Applied Organizational Leadership (AOL) degree-completion program at Midwest University as perceived by students and instructors?

The information gathered as a result of the research questions, along with 1) participant recruitment, data collection procedures, and participant characteristics, 2) results of the study, 3) evaluation of findings, and 4) chapter summary are discussed in this chapter.

Participant Recruitment, Data Collection Procedures, and Participant Demographics

This section includes information about how participants were recruited and selected to voluntarily participate in this study. Additionally, participants' demographics and data collection procedures are presented.

Participant recruitment. The researcher reviewed, qualified, and sent the requests to prospective students and instructors who met the criteria outlined in the previous section. The researcher collected information from interested students and instructors who voluntarily consented to participant in the study. The researcher reviewed the data provided by interested students and instructors to verify they met the required criteria for the study. The first 10 qualified students and the first 10 qualified instructors from the review were selected to participate in the study.

Data collection procedures. The 20 interviews were conducted either by telephone or face-to-face. The interviews ranged from 21 minutes, 55 seconds (21:55) to one hour, eight minutes, and 15 seconds (1:08:15) in duration; a difference of 47 minutes, 20 seconds (47:20) between the shortest and longest interviews. The variation in interview times may be attributed to the depth of responses and examples provided by the participants. Some participants were succinct and some participants were elaborate. The average interview time was 36 minutes, 27 seconds (36:27). The researcher digitally

recorded each interview based on consent granted by each of the 20 participants and transcribed by an external transcriptionist. There were no known technological errors during the recording or transcribing processes. The researcher completed member checking to ensure information gathered and used by the researcher was accurate and complete. Two participants responded during the member checking process. Both of those participants indicated their agreement with the information provided by the researcher. So, no participants requested any changes; therefore, the researcher did not complete any changes following the member checking process.

During the interview, each participant was asked 10 interview questions (see Appendices G & H). The responses to the questions provided data that were analyzed, coded, and organized into themes by the researcher using grounded theory data analysis appropriate for case study research (Yin, 2014). Each interview question response was compared to each of the other participants' responses to evaluate similarities and dissimilarities among the responses. By reviewing responses in this manner, patterns emerged, data were coded for conceptual and descriptive themes, and saturation was satisfied.

Participant characteristics. Ten students and 10 instructors voluntarily participated in this study without any compensation. Of the 10 students, five were male and five were female. Of the 10 instructors, five were male and five were female. All student and instructor participants were between the ages of 25 and 70, meeting the established participant criteria. Each student participant had taken at least two face-to-face courses in which a learning management system (LMS) was used. Each instructor participant had taught at least 10 face-to-face courses in which an LMS was used. Each

student participant was either participating in a degree-completion program or had completed a degree-completion program within two years of the interview. Each instructor participant had at least three years of experience teaching in a degree-completion program. Table 2 contains the demographic data of the 10 student participants. Table 3 contains the demographic data of the 10 instructor participants.

Table 2

Student Participants' Demographic Data

Participant	Gender	Primary Subject Discipline	# Blended Courses Taken	LMS System Used
1	F	Business	30	Moodle
2	M	Business	32	Moodle
3	F	Business	35	Moodle
4	F	Business	13	Moodle
5	F	Business	5	Moodle
6	M	Business	12	Moodle
7	F	Business	6	Moodle
8	M	Business	20	Moodle
9	M	Business	10	Moodle
10	M	Business	30	Moodle BlackBoard

Note. M=male; F=female; LMS=learning management system.

Table 3

Instructor Participants' Demographic Data

Participant	Gender	Primary Subject Discipline	# Blended Courses Taught	LMS System Used
1	F	Business	30	Moodle BlackBoard
2	F	Business	100	Moodle BlackBoard Angel
3	M	Business	20	Moodle
4	M	Business	150	Moodle BlackBoard
5	F	Business	25	Moodle BlackBoard
6	M	Mathematics	70	Moodle BlackBoard Proprietary
7	F	Business	90	Moodle BlackBoard Proprietary
8	M	Religion	20	Moodle BlackBoard
9	M	Business	75	Moodle BlackBoard
10	F	Business	50	Moodle BlackBoard

Note. M=male; F=female; LMS=learning management system.

Results

How students and instructors used a learning management system (LMS) was identified after data analysis. After analyzing the interview data and document review data for **Q1**, the conceptualized category of *Information* was developed. Information

comprised of two themes, including: 1) Creating a Data Management System and 2)

Providing Professional Development Focused on Knowledge Acquisition. Creating a

Data Management System comprised of the following sub-themes: *1) Incorporating a*

Standardized Syllabus and 2) Incorporating a Standardized Grading Rubric. Providing

Professional Development Focused on Knowledge Acquisition comprised of the

following sub-themes: *1) Providing Training, 2) Implementing Best Practices, and 3)*

Supporting Instructors through Mentoring.

After analyzing the interview data for **Q2**, the conceptualized category of

Integration was developed. Integration comprised of two themes, including: 1)

Improving Student Engagement and 2) Facilitating Instructor Feedback. The

conceptualized categories, themes, and sub-themes are discussed in this chapter.

Information. Data were collected from the syllabi and grading rubrics provided

by instructors on the document review form (see Appendix I) and responses to the

interview questions by students and instructors (see Appendices G & H) to answer the

following research question:

Q1. How does a learning management system (LMS), such as Moodle, influence

non-traditional students' learning outcomes managed in a blended learning setting in the

Applied Organizational leadership (AOL) degree completion program at Midwest

University (MWU) as perceived by students and instructors?

To collect data, participants were interviewed by phone or face-to-face. Of the ten

interview questions, six were applicable to **Q1**. The following question topics were

posed to students and instructors: 1) previous courses in which an LMS was used

(including course titles or subjects), 2) experiences using an LMS, 3) preparation using

an LMS, 4) benefit of training, including type of training using an LMS, 5) differences

between face-to-face courses in which an LMS was used compared to when an LMS was

not used, and 10) other experiences and observations using an LMS. The interviews were

digitally-recorded using the Voice Recorder™ app on the researcher's mobile phone. The

researcher recorded key points from the participants on the interview guide. The

interviews were transcribed by a transcriptionist, then coded and analyzed for patterns of

behavior by the researcher (Yin, 2014). The data was organized into several themes

accordingly. Table 4 contains each of the ten interview questions and to what research

question the interview question relates.

Table 4

Relationship of Interview Questions to Research Questions

Interview Question	Research Question Addressed
How many face-to-face courses have you had/taught in which a learning management system (LMS), such as Moodle, was used? What were the course titles or subjects?	**Q1.** **Q2.**
What were your experiences using an LMS in those face-to-face courses?	**Q2.**
Do you believe you lacked any necessary skills for effectively using an LMS in a face-to-face course?	**Q2.**
Do you believe you could have benefitted from training to help prepare you for using a learning management system in a face-to-face course? If so, what type of training do you believe would have benefitted you? How would that training have benefitted you?	**Q2.**
Was your experience different in a face-to-face course in which you used an LMS versus a face-to-face course in which an LMS was not used? In what ways were your experiences different?	**Q1.** **Q2.**
Do you believe teachers/students effectively participated or completed assignments using the LMS in the face-to-face courses in which an LMS was used? In what ways did teachers/students successfully use the LMS? What activities and assignments were the most effective? What activities and assignments were the least effective?	**Q1.** **Q2.**
In what ways could you have better used the LMS in the face-to-face courses?	**Q2.**
Do you believe the LMS helped to reinforce the subject matter from a previous face-to-face class session or prepare students for a future face-to-face class session? How do you believe the LMS helped?	**Q1.**
What skills did you developed or do you need to develop to use an LMS more effectively in a face-to-face course?	**Q2.**
Do you have any other experiences or observations you would like to share about using an LMS in a face-to-face course?	**Q1.** **Q2.**

There were two primary themes, one for each research question, which emerged from the analysis of the data. Based on the data for **Q1**, the primary theme (category) of *Information* was developed. Information comprised of two themes, including: 1) Creating a Data Management System and 2) Providing Professional Development Focused on Knowledge Acquisition. Creating a Data Management System comprised of the following sub-themes: *1) Incorporating a Standardized Syllabus and 2) Incorporating a Standardized Grading Rubric.* Providing Professional Development Focused on Knowledge Acquisition comprised of the following sub-themes: *1) Providing Training, 2) Implementing Best Practices, and 3) Supporting Instructors through Mentoring.*

Based on the data for **Q2**, the primary theme (category) of *Integration* was developed. Integration comprised of two themes, including: 1) Improving Student Engagement and 2) Facilitating Instructor Feedback. The conceptualized categories, themes, and sub-themes are discussed in this chapter. Figure 1 illustrates the relationship of the themes for **Q1**. Figure 2 illustrates the relationship of the themes for **Q2**.
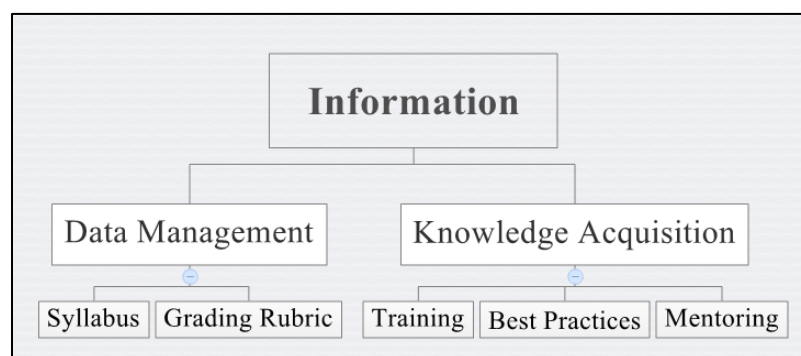

Figure 1. Emergent Themes Related to Research Question One: How does a learning management system (LMS), such as Moodle, influence non-traditional students' learning outcomes managed in a blended learning setting in the Applied Organizational leadership (AOL) degree completion program at Midwest University (MWU) as perceived by students and instructors?

Research was conducted at Midwest University (MWU). In 2010, MWU changed learning management systems (LMS). BlackBoard was the original LMS used at MWU since 2001. In 2010, MWU transitioned to Moodle (Modular Object-Oriented Dynamic Learning Environment). All ten interviewed students had experience using Moodle. However, only one of the ten interviewed students had used a different LMS than Moodle (Participant 10 had also used BlackBoard). All ten interviewed instructors had experience using Moodle. Further, all but one instructor (Participant 3) also had experience using BlackBoard. Three instructors (Participants 2, 6, and 7) had experience using three different LMS's. So, instructor participants were more familiar with a variety of LMS's than student participants.

Regardless of the difference in familiarity among various LMS's, students and instructors alike consistently responded that their primary experiences using an LMS were based on information, specifically organized words, phrases, and numbers that are used to provide meaning in an academic environment (Jones, 2011). Each of the 20 interviews contained multiple references to various forms of course information housed in an LMS. Therefore, information was the main theme that emerged from the interviews. The most commonly reported types of information were 1) Creating a Data Management System and 2) Providing Professional Development Focused on Knowledge Acquisition.

Creating a data management system. Using an LMS to manage course data, such as housing the syllabus and grading rubric, was reported by all 10 interviewed students and all 10 interviewed instructors. Data management refers to the process of securing information in a confined and accessible structure (Rosen, 2013). Two of the 10

students specifically reported including the syllabus and grading rubric as an effective use of an LMS. Additionally, three of the 10 students contended that including baseline course documents (e.g., formal written explanation of activities or assignments, etc.) was an effective use of an LMS. Seven of the 10 instructors (Participants 1, 3, 4, 7, 8 9, and 10) posited that using an LMS's gradebook or grading rubric feature was an important consideration of their use of an LMS. One of the 10 instructors (Participant 10) specifically reported including the syllabus as an effective use of an LMS. Only one instructor (Participant 8) reported using an LMS for attendance, so attendance was not included as a sub-theme. Therefore, two sub-themes emerged as *1) Incorporating a Standardized Syllabus and 2) Incorporating a Standardized Grading Rubric*.

   Incorporating a standardized syllabus. Eight of the 20 total participants discussed the importance of including a syllabus and/or formal written explanation of activities or assignments in an LMS. Five of the 10 instructors (Participants 1, 4, 5, 7, and 10) stated their first use of an LMS in a face-to-face course was to only attach the syllabus in the LMS. These five instructors indicated they initially did not use the LMS for any activities or assignments and they did not access the LMS again after the face-to-face class sessions began. Two of the 10 students (Participants 1 and 5) indicated instructors effectively used an LMS by including a syllabus.

   Each of the 10 instructors provided a current syllabus for a face-to-face course in which an LMS was used. The syllabi were evaluated using the document review form (see Appendix I). Eight of the 10 instructors (Participants 1, 3, 4, 5, 6, 7, 9, and 10), clearly listed on their syllabi activities or assignments required to be completed through an LMS or submitted to a link in an LMS. Table 4 contains the LMS activities and/or

assignments from the syllabi provided by the instructors. Table 5 also lists whether the

LMS activities and/or assignments are tied to learning outcomes on the syllabi.

Table 5

Instructor-Provided Syllabi - LMS Activities and Assignments

Participant	LMS Activity/Assignment	Tied to Learning Outcomes?
1	*Moodle Chapter Quizzes* The quizzes are found on Moodle. Each quiz consists of 10 multiple-choice questions. Each question is worth 2 points. Quizzes are on the chapter covered during a class and are due before the next class.	No
3	*Weekly Assignments* a. Access course webpage in Moodle, review syllabus and grading rubric, send an acknowledgement e-mail to instructor. b. Answer the Stop & Think questions from [weekly assigned chapters]. Attach responses in Moodle. c. Watch video on emotional competencies. Post your responses to the critical thinking questions in Moodle. d. Read *20 Shortcuts on Organizational Change Management*. Create a presentation using PowerPoint, Prezi, Glogster, etc. discussing your five favorite shortcuts. e. Read *Failed Vision: Organizational Development Case Study*. Answer each of the review questions. Attach responses in Moodle. f. Complete the Force-Field Analysis worksheet for a real-life decision. Attach worksheet in Moodle.	Yes
4	*Discussion Board Participation* Participation includes posting a substantial original response and a substantial response to at least two other student[s'] posting[s] each week for the discussion question on Moodle. Failure to post your original response by 6:00pm on Thursday for that week's question will result in the loss of one point for that week.	Yes

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Participant	LMS Activity/Assignment	Tied to Learning Outcomes?
	Failure to respond to two other student[s'] postings by Sunday, 11:00pm will result in the loss of one point for that week. For a post to be considered substantial it must be at least two sentences in length speaking directly to the topic. I am not simply looking for an "I agree," or a "good point" response.	
5	*Discussion Board* 10 points [No description.]	No
6	*Course Structure* Class sessions will consist of in-class and online discussion forums, online case studies, classroom lectures, and review/instructional videos.	Yes
7	*Course Structure* Class sessions will consist of class discussion, worksheets, in[-]class and out[-]of[-]class assignments, forum posts, an e-portfolio, and a professional growth plan.	No
9	*Course Online Discussion Forum (DF)* This course offers a blended approach to learning, as both on ground and online techniques will be used. In Moodle modules 1-5 for this course, there will be discussion forums in which each student will post an initial response to the question(s) by Sunday, 11:55pm, of each week of the course. Then by Tuesday, 11:55pm of each week of the course, each student will respond to the designated amount of other learners to engage those students in discussion. Each initial post should be at least 150 words, except for DF10; each response to other learners should be at least 25 words. This online discussion is equivalent to a total of 15 pages of writing ([150 words x 10 DF initial posts] + [25 words 1 DF initial post] + [25 words x 5 responses x 6 DFs] + [25 words x 1 response x 5 DFs] = 3900 words/250 words per page). Each discussion forum is worth 25 points x 11 DFs = 275 total course points. Discussion forums are listed as DF1-11.	Yes

(Continued next page)

Participant	LMS Activity/Assignment	Tied to Learning Outcomes?
10	*Course Assignments* Discussion Board Topics – 3 separate speakers – initial post for each speaker 300-500 words – insights gained from each speaker, what sparked a question for you concerning entrepreneurism, how did their story affect you in deciding whether [e]ntrepreneurism was a choice for you – respond to at least 2 other student[s'] posts (things you agreed or disagreed with, 150-300 words within 2 to 3 days of initial posts.	No

Incorporating a standardized grading rubric. Nine of the 20 total participants discussed the importance of including a grading rubric or using a gradebook feature in an LMS. Seven of the 10 instructors (Participants 1, 3, 4, 7, 8 9, and 10) posited that using an LMS's gradebook or grading rubric feature was an important consideration of their use of an LMS. Two of the 10 students (Participants 1 and 3) indicated including a grading rubric or using a gradebook feature was an effective use of an LMS.

Each of the 10 instructors provided a current grading rubric for a face-to-face course in which an LMS was used. The grading rubrics were documented and evaluated using the document review form (see Appendix I). Eight of the 10 instructors (Participants 1, 3, 4, 5, 6, 7, 9, and 10), clearly listed on their grading rubrics activities or assignments that were required to be completed through an LMS or submitted to a link in an LMS. Table 5 contains the LMS activities and/or assignments from the grading rubrics provided by the instructors. Table 5 also lists the grade value, points, and percentages (of the total course grade), of the LMS activities and/or assignments from the grading rubrics.

Providing professional development focused on knowledge acquisition. Each of the 20 total participants was specifically asked if he or she believed they lacked any necessary skills for effectively using an LMS in a face-to-face course. Additionally, each participant was specifically asked if he or she believed training would have helped prepared him or her for using an LMS in a face-to-face course. Of the 10 students interviewed, three (Participants 1, 2, and 7) stated they believed they originally lacked skills necessary to use an LMS effectively. Of the 10 instructors interviewed, all but one (Participant 4) indicated they believed they originally lacked necessary skills to use an LMS effectively. The most resounding feedback from the interviews pertained to training. All 20 of the participants indicated they could have benefitted from training to help prepare them for using an LMS in a face-to-face course. Based on the responses provided by the participants, three sub-themes were developed; *1) Providing Training, 2) Implementing Best Practices, and 3) Supporting Instructors through Mentoring*.

Table 6

Instructor-Provided Grading Rubrics - LMS Activities and Assignments

Participant	LMS Activity/Assignment	Grade Value (Points / Percentage)
1	*Moodle Chapter Quizzes*	200 / 26.6%
3	*Weekly Assignments*	20 / 20%
4	*Discussion Board Participation*	10 / 10%
5	*Discussion Board*	0 / 0%
6	*Course Structure – Discussion Board*	25 / 25%
7	*Course Structure – Discussion Board*	24 / 24%
9	*Course Online Discussion Forum (DF)*	275 / 27.5%
10	*Course Assignments*	30 / 30%
	Average Grade Value (%)	20.39%

Providing training. Although all 20 participants reported they could have benefitted from training, the level of training required varied considerably among the participants. One student (Participant 1) stated, "My tech skills are low, because I'm a stay-at home mom." That student described an LMS as "foreign" and cited that she "uncomfortable" using a computer. One instructor (Participant 8) answered, "I began as a true novice, and then I became more familiar." In contrast, another student (Participant 6) determined he was "prepared overall" to use an LMS and that he could "self-troubleshoot" issues as they arose. However, even the latter student reported completing some training for an LMS and that the training was beneficial. Another instructor (Participant 9) assessed he was very comfortable using an LMS, but primarily because he had completed a two-week formal training program at another university.

Additionally, the format of training preferred varied among the participants, although to a lesser degree than the level of training required. Five of the 10 students (Participants 1, 3, 5, 7, and 9) preferred hands-on training, two students (Participants 2 and 4) preferred one-to-one or self-guided training, and three students (Participants 6, 8, and 10) did not indicate a preferred training format. Six of the 10 instructors (Participants 1, 4, 6, 7, 8, and 10) preferred hands-on training and four instructors (Participants 2, 3, 5, and 9) did not indicate a preferred training format.

Implementing best practices. Accuracy, consistency, and timeliness (ACT) of information were three sub-themes that emerged based on the responses from students and instructors as contributing to an effective LMS experience. Six of the 10 students (Participants 1, 4, 5, 6, 7, and 8) and four of the 10 instructors (Participants 1, 6, 7, and 9) cited accuracy of information as an essential aspect of an LMS. Eight of the 10 students (Participants 1, 2, 3, 4, 5, 6, 8, and 10) and seven of the 10 instructors (Participants 1, 3, 4, 5, 6, 7, and 9) stated consistency of information as an essential aspect of an LMS. Eight of the 10 students (Participants 1, 2, 3, 4, 6, 7, 8, and 10) and eight of the 10 instructors (Participants 1, 2, 3, 4, 5, 6, 9, and 10) reported timeliness of information as an essential aspect of an LMS.

The inclusion of each of the three best practices contributed to a positive experience using an LMS and the exclusion of even one of the three contributed to a less-than-positive experience (Gonzalez, 2011). Students and instructors also reported twelve additional informational aspects as contributing to a positive experience using an LMS. The aspects were accessibility, clarity, comprehensibility, convenience, coordination, efficiency, format, integration, organization, simplicity, structure, and thoroughness.

However, the latter informational aspects were reported with much less frequency than the former. One student (Participant 8) suggested instructors should use "other's eyes" to view their courses; meaning, instructors should evaluate their LMS's from a student's perspective. That student specifically mentioned accuracy, consistency, and timeliness as reflective of the level of commitment and engagement among students and instructors using an LMS.

Supporting instructors through mentoring. Several students (Participants 1, 2, 4, 5, 6, 7, and 9) and instructors (Participants 1, 3, 5, 7, 8, and 10), reported feeling alone, frustrated, or uncomfortable using an LMS. Students and instructors stated collaboration and cooperative learning was essential to effectively using an LMS in a face-to-face course. Some of the comments related to preferred activities or assignments. Those responses are discussed in the *Integration* section of this chapter. However, mentoring was the theme established for collaboration and cooperative learning for information related to an LMS.

One student (Participant 1) mentioned working with another person, even a fellow classmate, who is more knowledgeable using an LMS, would have helped to relive some of the anxiety she felt when she first used an LMS. One instructor (Participant 8) echoed the student's comment. He reported feeling embarrassed asking questions in a larger group format, because he was concerned his colleagues would think he was remedial and unintelligent.

As stated in the Training section, five of the 10 students (Participants 1, 3, 5, 7, and 9) preferred and six of the 10 instructors (Participants 1, 4, 6, 7, 8, and 10) preferred hands-on training. However, not all participants preferred hands-on group training.

Three of the six instructors (Participants 1, 4, and 8) who preferred hands-on training, also preferred one-to-one settings more representative of mentoring. Dias and Diniz (2014) determined that learning how to use an LMS while participating in a course may compound a learner's frustration because the learner is attempting to learn two disparate functions at the same time. While the individual is learning a subject, the individual is also attempting to learn an instructional platform. This may result in information overload. One instructor (Participant 1) posited information is attainable when it is presented in a manageable form and based on one's preferred learning style. Another instructor (Participant 3) stated succinctly, "technology is not static, therefore teaching should not be static and learning should not be static." Mentoring is not only an informational bridge from one person to another, it also continuous, dynamic support process (Weimer, 2013).

Integration. Data were collected from the responses to the interview questions by students and instructors (see Appendices G & H) to answer the following research question:

Q2. How can a learning management system (LMS), such as Moodle, improve non-traditional students' learning in the Applied Organizational Leadership (AOL) degree-completion program at Midwest University, as perceived by students and instructors?

MWU was the recipient of a competitive $10 million Title III Department of Education Strengthening Institutions Program (SIP) grant. Part of the grant was designated to fund "expanded technology with major improvements on campus including the replacement of the network infrastructure, computer hardware, and the addition of

instructional technology for students and faculty" (Chesley, 2014, para. 7). Based on funding from the federal grant, MWU replaced its old, fiber-optic campus network with a state-of-the-art $1.5 million broadband network infrastructure (Chesley, 2014). MWU purchased new computer equipment for students, faculty, classrooms, and computer labs (Chesley, 2014). Further, MWU upgraded Moodle, the university's the LMS (Chesley, 2014).

Although MWU purchased brand new and upgraded technology, the integration of the technology was the main theme that emerged from the interviews. According to the National Center for Education Statistics, "technology integration is the incorporation of technology resources and technology-based practices into the daily routines, work, and management of schools" (NCES, 2016, para. 3).

Within the main theme of integration, two sub-themes were identified and addressed the second research question: 1) Improving Student Engagement and 2) Facilitating Instructor Feedback (see Figure 2).

Improving student engagement. Students reported inconsistent usage of an LMS by instructors among their general core and elective courses. Students not only noted inconsistency among different courses, but also within the same course. Courses did not maintain a uniformed look from course to course and there were many inconsistencies by a single instructor compounding frustration for students. Frustration was the most commonly mentioned feeling associated with using an LMS by students and instructors. Several students reported being frustrated when an LMS course page looked different from one class to the next, when links were broken, or when any of the best practices were not observed (Participants 1, 4, 5, 6, 7, 9, and 10).
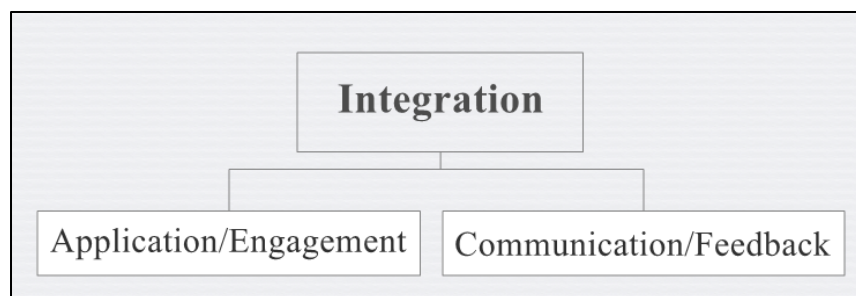
Figure 2. Themes Related to Research Question Two: How can a learning management system (LMS), such as Moodle, improve non-traditional students' learning in the Applied Organizational Leadership (AOL) degree-completion program at Midwest University, as perceived by students and instructors?

As stated in the *Implementing Best Practices* section, students and instructors valued consistent inclusion of information in LMS (e.g., syllabus, grading rubric, organization, etc.). When an LMS appeared similar from course to course and when instructors maintained a universal structure and organization within the same course, it reduced confusion, improved clarity, and offered continuity of information (Ginsburg, 2015). The three "C's" directly contributed to a better learning experience as reported by the student participants.

Students overwhelming reported most activities and assignments they experienced effectively promoted learning in an LMS. Nine out of 10 students (only Participant 10 withstanding) stated there were no activities or assignments that were ineffective. Participant 10 cited one instructor's attempt to assign a group project online as ineffective. In that instance, the instructor moved a classroom group project to the LMS and did not factor the unique issues that presented (e.g., not allowing students time to work together face-to-face, not preparing students for making presentations online, and not providing guidance to the groups online). One student (Participant 7) summarized she did not experience issues with the intention or objective of the assignment. Rather,

the issues she experienced resulted from how the instructor organized the assignment in the LMS (e.g., assigned a paper, but required students to submit it to a discussion forum).

None of the ten instructors cited a specific activity or assignment as ineffective. However, one instructor (Participant 5) concluded that the LMS quiz feature was cumbersome to create. Therefore, although she attempted to use a different learning activity in the LMS, she defaulted to a more familiar discussion forum for future offerings because it was easier to set up.

Students identified discussion forums, PowerPoint presentations, electronic/web-resource, YouTube/TED Talk videos, critical thinking/reflection papers, multiple choice quizzes, and question and answer forums as the most effective activities and assignments used in an LMS (listed in order of most frequently mentioned to least frequently mentioned). Instructors noted similar activities and assignments as students, including discussion forums, YouTube/TED Talk/publisher-provided videos, PowerPoint presentations, quizzes (various formats), classroom handouts, articles, journals, e-textbooks, and sample formatted papers (listed in order of most frequently mentioned to least frequently mentioned). Table 7 contains the LMS activities and/or assignments reported by students and instructors as most effectively promoting learning in a face-to-face course.

Table 7

Most Effective LMS Activities and Assignments Reported by Students and Instructors

LMS Activity/Assignment *Student Perception*	LMS Activity/Assignment *Instructor Perception*	LMS Activity/Assignment *Collective Perception*
Discussion forums	Discussion forums	Discussion forums
PowerPoint presentations	YouTube/TED videos	PowerPoint presentations
E-resources	PowerPoint presentations	YouTube/TED videos
YouTube/TED videos	Quizzes	Quizzes
Critical Thinking papers	Classroom handouts	E-resources
Quizzes	Articles	Classroom handouts
Q&A forums	Journals	Articles
News forum	E-textbooks	Journals
Group resources	Sample, formatted papers	Papers (various)

Of note, no students or instructors noted social networking, blogging, and podcasting as effective LMS learning resources. Although the participants did not specifically state the three resources, according to Heo and Lee (2013) those resources still add value to an LMS in face-to-face setting. Regardless of the resource, students and instructors commented that many students would not complete activities and assignments in an LMS if students did not perceive value in that resource. Those comments reinforced the position of Burrell, Finch, Fisher, Rahim, and Dawson (2011) who stated if students do not perceive value (e.g., grade value or real-world application), they are less likely to invest time or effort in pursuing that activity or assignment.

Facilitating instructor feedback. Another common theme among students and instructors was the role of communication in an LMS. Students and instructors viewed

the learning management system itself as an important vehicle of communication in face-to-face courses. One student (Participant 5) suggested an LMS expands information channels and "open communication" between a student and an instructor. An instructor (Participant 4) posited,

> I believe it's giving them that opportunity to have [a] voice when sometimes in the face-to-face class, they can't speak quick [sic] enough…they need more time to process. [I] think that's where I've seen the greatest advantage to Moodle or to a learning management system, is for the learning style that needs a little bit more time, where, opposed to the person who's already putting their hand up before you've finished asking the question.

Students and instructors were asked how they specifically use an LMS in their face-to-face courses. All twenty participants indicated the LMS was used by instructors to both prepare for a future class session and to reinforce a previous class session. However, the degree to which an LMS was used for preparation or reinforcement varied considerably among the participants. Six of the 10 students (Participants 2, 3, 5, 7, 9, and 10) reported an LMS was by instructors more to prepare for a future class session than to reinforce a previous class session. One student (Participant 9) believed that 90% of his experience using an LMS was to help him prepare for a future class session. However, most students (Participants 2, 3, 5, 7, and 10) either did not offer a percentage or placed the percentage closer to 75% preparation usage. Interestingly, four of the 10 students (Participants 1, 4, 6, and 8) expressed the opposite perspective. One student (Participant 6) considered 70% of his experience using an LMS was to reinforce a previous class session.

Importantly, students reported their perception of how an LMS was used in a face-to-face course; whereas, instructors cited their intention of how an LMS was used in a face-to-face. Instructors were divided evenly on how they used an LMS in a face-to-face

course. Five of the 10 instructors (Participants 2, 3, 4, 6, and 9) indicated using an LMS more for preparation. One instructor (Participant 2) stated that she used an LMS "almost 100% of the time to set up a class." Another instructor (Participant 5) viewed an LMS as primarily a reinforcement tool for a previous class session. She deduced, "students can build their final [writing] assignment one week at a time through Moodle by receiving [weekly] feedback."

Evaluation of Findings

This section includes an evaluation of the findings of the study to compare and expand research relevant to fields of adult learning, instructional technology, and learning outcomes. Further, this section connects theory and practice through an increased understanding of those key aspects. The findings were evaluated by comparing themes presented in literature and reviewing whether the data supported, challenged, or expanded literature.

Q1. The first research question was, "How does a learning management system (LMS), such as Moodle, influence non-traditional students' learning outcomes managed in a blended learning setting in the Applied Organizational leadership (AOL) degree completion program at Midwest University (MWU) as perceived by students and instructors?" In response to the first research question, one primary theme emerged pertaining to Information. Information comprised of two separate themes discussed in this section, including: 1) Creating a Data Management System and 2) Providing Professional Development Focused on Knowledge Acquisition.

Creating a data management system. All 20 participants in the study reported one of the most important functions of a learning management system (LMS) was to

manage course information. Data management refers to the process of securing information in a confined and accessible structure (Rosen, 2013). Students mentioned including the syllabus and grading rubric as essential resources and an effective use of an LMS. Further, students indicated an LMS should include additional core course documents (e.g., formal written explanation of activities or assignments, etc.). Both students and instructors believed the data management function of an LMS was vital to helping students remain informed and updated on assignments, deadlines, and grades throughout a face-to-face course. Specifically, students and instructors mentioned including syllabi and grading rubrics in an LMS helped anchor information accessible through the LMS. Students and instructors valued accurate and updated grade postings through the LMS gradebook. Instructors perceived the gradebook as one of the most important resources to provide academic progress to students.

Despite instructors' strong support of using an LMS for data management, the reviewed syllabi and grading rubrics varied considerably in the type of information included, scope of information included, and point structure of information included. These findings were consistent with previous research. Jiao, Venkat, Han, and Weissman (2014) posited there is often disconnect between intention and action among instructors using an LMS. However, when theory is aligned with practice, students report higher satisfaction in their courses in which an LMS is used (Jiao et al., 2014). So, instructors must ensure their syllabi and grading rubrics list all LMS activities and assignments, correlate those documents with their measurable objectives and learning outcomes, and implement those activities and assignments as designed in their courses (Jiao et al., 2014).

When instructors incorporate an LMS in face-to-face classes, deep learning, or learning retained for several years, is more likely to occur (Ginsburg, 2015; Smith, 2010; Unver, 2014). Therefore, blended learning promotes a better learning experience for students. Blended instruction provides more student control over the time, place, path, or pace of content and instruction than only face-to-face instruction (Stalker & Horn, 2012). Liu and Wenzhen (2012) contended that a hybrid environment should "add into the decisions of the design of instructions" (p. 142). However, instructors reported most of their first experiences using an LMS were a reaction to a college requiring its usage in their face-to-face courses. Only two of the syllabi included precise detail (e.g., alignment of activities and assignments with learning outcomes) of how the LMS would function in their face-to-face courses.

Gary (2013) asserted that LMS's are an effective tool to monitor students' progress, run reports for assessment purposes, manage documents, and present learning modules. However, after reviewing ten syllabi and ten grading rubrics provided by the instructor participants, a lack of standardization and consistency of information was evident. Accordingly, the first theme, within Information, was developed regarding the need for a data management system to develop, coordinate, and evaluate requisite information to be included in all syllabi and grading rubrics in which a learning management system (LMS) was used in a face-to-face course.

Eight of the 10 syllabi and eight of the 10 grading rubrics listed at least one activity or assignment that was coordinated through an LMS in a face-to-face course. However, one of the eight grading rubrics that listed a discussion board assignment did not include a point value for the assignment. Based on the calculations of the other

assignments listed on that grading rubric, the discussion board assignment did not appear to have any points associated with the assignment. Bergman (2012) contended that adult learners have higher and more specific expectations of their education than traditional students. However, when face-to-face courses do not effectively use an LMS, adult learners may become demotivated (Bergman, 2012). The findings from this study match those in Bergman's research. Instructors confirmed students were less likely to complete assignments in an LMS if there was no coordination of the work or grade value for the work.

Many adult learners are uncomfortable with and unfamiliar in using an LMS in face-to-face courses (Ginsburg, 2015). A learning management system has the capacity to augment face-to-face courses through coordinated data management. Conversely, if information is not well-organized, inaccurate, or incomplete an LMS can be detrimental to a face-to-face course (Ginsburg, 2015). The most common issue recognized from the reviewed syllabi and grading rubrics were the same issues reported in research. Further, only four of the eight LMS activities or assignments listed on the syllabi were directly connected to a learning outcome for the course.

The findings of this study supported Ginsburg's (2015) four primary functions of a learning management system pertaining to data management including curriculum, delivery mechanism, instruction complement, and instructional tool. In this study, both students and instructors determined that an LMS should also provide practical solutions to real-world problems. Smith (2010) provided three practical solutions instructors should follow to ensure an LMS includes appropriate data and functions effectively for adult learners. First, educators must ensure their learning is contextualized by making

learning culturally, personally, and professionally relevant. When educators connect personally with their students, educators can better understand students' concerns and desires. Second, students must be empowered in the learning process. Third, educators should promote collaborative learning that crystallizes individual and collective awareness. Each of the three practices can be facilitated by an LMS in face-to-face courses.

Smith posited the reason learning outcomes are often not met is due to a lack of congruence between design and implementation. After reviewing the syllabi and grading rubrics provided in this study, most instructors (Participants 3 and 9 withstanding) did not clearly tie LMS activities and assignments to learning outcomes in their face-to-face courses. Further, there was not a clear coordination of LMS activities, assignments, and learning outcomes as listed in syllabi and grading rubrics provided by the instructors. Unver (2014) noted instructors may believe learning outcomes were not achieved because instructors did not effectively present course information to the students. Smith (2010) referred to this misunderstanding by instructors as the void between paper and practice.

The findings of this study did not reveal instructors taught their subject matter ineffectively. Rather, the findings of this study confirmed some instructors did not effectively state in their syllabi and grading rubrics how they intended to use an LMS in their face-to-face courses. Weimer (2013) contended instructors must clearly list all LMS course activities and assignments in their syllabi and grading rubrics to improve student perceptions of how effectively an LMS is used in face-to-face courses.

Providing professional development focused on knowledge acquisition. All 20 participants supported the position that a learning management system facilitates the learning process in a face-to-face course. This data overwhelmingly supported Weimer's (2013) contention that one of the best methods for promoting learning both inside and outside of the classroom is through a learning management system (LMS).

Although there was unanimity among students and instructors in the perceived value of an LMS, there were varying levels of familiarity using an LMS. Based on the findings of this study, students reported greater initial skill comfort using an LMS than instructors. However, none of the participants indicated they were completely unprepared or unable to use an LMS at all. This finding was consistent with Bergman's (2012) position that most LMS's were structured and organized with intuitive layouts for students and instructors. Most students and instructors can operate LMS's through folder tabs or labeled links that resemble Microsoft Word's layout navigation menus (Weimer, 2013).

The most resounding feedback from the interviews pertained to training. All 20 participants indicated they could have benefitted from training to help prepare them for using an LMS in a face-to-face course. However, participants differed on preferred training formats, styles, and content. Although all ten instructors perceived value in an LMS, some instructors reported still being uncomfortable using an LMS even after training. Some of the instructors mentioned being reluctant to make an investment in training unless college administration required them to do so. This finding was consistent with Gonzalez's (2011) study that revealed instructors have differing attitudes, opinions, and preferences of training and teaching formats. Instructors who have primarily taught

face-to-face courses are more inclined to prefer teaching face-to-face courses. Likewise, instructors who have primarily taught online courses are more inclined to prefer teaching online courses (Gonzalez, 2011).

Most instructors did not receive formal, organized training prior to using an LMS at MWU. Unver (2014) contended that colleges must strongly encourage or even require instructors to participate in pre-service instructor education programs to shift their perceptions of using technology, such as an LMS. Adjusting teaching practices during a semester can often be effective. However, making major adjustments to teaching practices should be tested in a controlled environment, such as training programs, before being incorporated in a course (Unver, 2014). The findings of this study were consistent with Unver's claim. Five of the 10 instructors (Participants 1, 2, 6, 8, and 9) stated they were required to complete LMS training when they taught at a different college. Training was conducted as an in-service or workshop according to all five of those instructors.

All ten instructors posited that LMS training should be practical and relevant. One instructor (Participant 1) described some of the training she received as a "waste of time" because it was too general and covered information she already knew. Another important consideration for LMS training is for instructors to view their courses from their students' perspectives (Dias & Diniz, 2014; Gary, 2013). One instructor (Participant 4) affirmed that point by stating, "I had to move from thinking 'what was easier for me' to 'what's best for the student.'" The findings of this study matched Gary's (2013) contention that instructors typically design their LMS around their own learning styles and learning objectives. Instructors do not typically consider the student's perspective of an LMS (Dias & Diniz, 2014). As part of a study regarding student and alumni

perceptions of how faculty members integrate LMS's into their courses, Gary deduced students viewed some LMS resources as too gimmicky, including the audio-text application, which was the least liked function in the LMS. Gary recommended colleges incorporate regular faculty training based on college-specific research about students' perceptions of LMS at their institution.

Wolfson, Cavanaugh, and Kraiger (2014) proposed ways training can be conducted through technology. Wolfson et al. recommended technology-based training for older adults should be highly structured, provide feedback and adaptive guidance, include metacognitive prompts, incorporate principles derived from cognitive load theory and cognitive theory of multimedia learning, and include a user interface that is simple and consistent throughout the course. The findings of this study did not confirm all the recommendations from the Wolfson et al. research. However, both students and instructors reported gaining much of their understanding of an LMS through experiential learning (e.g., learning how to use an LMS through trial and error). Further, students and instructors alike preferred a highly-structured environment in their learning management systems.

According to research, instructors need to be trained on various learning styles. Tulbure (2012) found that adult learners' academic grades improved when instructors recognize and incorporate teaching strategies that align with students' unique learning styles. Tulbure's point was confirmed by one instructor (Participant 4) who acknowledged he must transition from his teaching preference to incorporate more student learning styles. Six of the 10 instructors (Participants 1, 3, 5, 6, 7, and 10) mentioned using PowerPoint slides in their face-to-face courses and providing the slides

in the LMS. Burrell, Finch, Fisher, Rahim, and Dawson (2011) agreed that PowerPoint remains an important medium of communication in higher education. However, Burrell et al. contended adult learners also need real-world application that is difficult to capture through PowerPoint presentations.

Training is not only important for instructors, it is also vital for students. Seven of the ten students (Participants 1, 4, 5, 6, 7, 9, and 10) reported feeling alone and unsupported initially when they first used an LMS in their face-to-face courses. This finding relates to Mammadov and Topçu (2014) who identified three benefits for students trained to use a learning management system (LMS) through e-mentoring. Mammadov and Topçu concluded 1) students who were engaged with e-mentoring had higher motivation and desire to learn than students who were not mentored; 2) students had higher perseverance to complete required individual and group tasks; and 3) students formed an efficient and interactive group and worked collaboratively to resolve common issues, thus improving critical thinking skills.

Q2. The second research question was, "How can a learning management system (LMS), such as Moodle, improve non-traditional students' learning in the Applied Organizational Leadership (AOL), degree-completion program at Midwest University, as perceived by students and instructors?" In response to the second research question, one primary theme emerged pertaining to Integration. Integration comprised of two separate themes discussed in this section, including: 1) Improving Student Engagement and 2) Facilitating Instructor Feedback.

Improving student engagement. Students reported inconsistent usage of an LMS by instructors which produced feelings of confusion, disappointment, and frustration

among the students. Similarly, Mohammed (2013) noted the importance of removing

negative feelings to help motivate adult learners using a learning management system.

Mohammed studied five aspects to determine the best methods of motivating adult

learners in an accelerated learning format including 1) creating an interesting learning

environment; 2) creating an emotional connection by using visuals; 3) creatively

presenting by using colors and sounds; 4) activating and integrating learners through fun

activities such as interactive quizzes, mobile learning, multi-sensory activities such as

problem-solving activities, exercises and learning games; 5) and motivating learners to

engage actively in the learning process. Several students and instructors in this study

identified methods similar to Mohammed's to improve student engagement in an LMS.

Students and instructors consistently reported the importance of clarity of

information in a learning management system. As stated in the Creating a Data

Management System section, instructors can reduce student frustration by providing clear

and consistent information in their syllabi, grading rubrics, and other course documents.

Researchers have suggested student engagement improves when an LMS appeared

similar from course to course and when instructors maintained a universal structure and

organization within the same course (Ginsburg, 2015). Consistency reduced confusion,

improved clarity, and offered continuity of information (Ginsburg, 2015). The three

"C's" directly contributed to a better learning experience as reported by the student

participants in this study.

Students in this study credited most LMS activities and assignments as

contributing to learning in their face-to-face courses. This finding is consistent with

Stalker and Horn's (2012) position that an LMS should enhance face-to-face instruction

if instructors use an LMS effectively. However, students also reported sharply different experiences based on the instructor's level of familiarity of and use of an LMS. Some instructors attempted activities and assignments that students believed did work effectively. So, although not a resounding theme, students believed some instructors ineffectively used an LMS in their face-to-face courses.

Improving student engagement requires more than just eliminating bad practices. Instructors must also promote effective practices. Goddu (2012) asserted adult students learn one of three ways; 1) self-directed learning, 2) situational/experiential learning, or 3) narrative learning. Goddu concluded instructors can help adult learners draw from personal life experiences to enrich their learning experience by providing engaging classroom discussion and requiring assignments that apply concepts to their personal and professional lives. In this study, students reported experiential learning, critical thinking, and reflective learning exercises as the most beneficial assignments coordinated through an LMS in face-to-face courses. This finding was also consistent with Goddu's second contention of adult learning theory.

Unver (2014) affirmed that students become more engaged in a course when they are encouraged to think critically through group discussion and reflective writing exercises. When critical thinking exercises are built into discussion forums in a learning management system, instructors reinforce key concepts following a face-to-face class session (Unver, 2014). All 20 participants indicated the LMS was used by instructors to both prepare for a future class session and to reinforce a previous class session which supports the findings by Unver.

Adult learners expect to be informed of the purpose of activities and assignments

in their courses (Ross, 2010; Weimer, 2013). Instructors must connect course activities

and assignments to learning outcomes. This is one the most effective methods to engage

students in a course. When students understand why they are required to complete an

assignment and what they can take away from an assignment, they are more likely to

produce better work (Weimer, 2013). The findings in this study indicated students may

not have consistently understood what learning outcomes would result from assignments.

Most students completed work because it was assigned without considering how face-to-

face and LMS activities and assignments were coordinated by instructors. Only one

syllabus (Participant 9) listed discussion forums, including initial student postings and

response student postings that were associated with stated learning outcomes.

Facilitating instructor feedback. Another common theme among students and

instructors was using an LMS to facilitate communication between instructors and

students in face-to-face courses. Students and instructors viewed the learning

management system itself as an important vehicle of communication in face-to-face

courses. Some students contended an LMS could be better used by instructors to

facilitate ongoing communication between and among students and instructors.

Students and instructors had vastly different perceptions regarding whether an

LMS was used primarily for preparation or reinforcement of face-to-face instruction.

Many instructors admitted they had not considered how often they used an LMS to set up

a face-to-face class as opposed to follow up from a previous class. Importantly, students

reported their *perception* of how an LMS was used in a face-to-face course; whereas,

instructors cited their *intention* of how an LMS was used in a face-to-face. Wichadee

(2014) included a similar distinction between perception and intention among students

and instructors by claiming instructors should be more explicit in their instruction and communication with students.

In this study, students also expressed a desire for improved, clear, and consistent communication from instructors. Wichadee's research was found to align well with the findings from this study. According to Wichadee, when students understood why they were working on an assignment, they were more motivated to complete it. When students were more motivated, they produced higher quality work (Wichadee, 2104). Wichadee concluded *explaining* messages appeared most frequently in an LMS and *interpreting* messages appeared the least often. Many students assessed only basic learning occurred using an LMS. This finding also matched Wichadee's conclusion that students primarily demonstrated basic content knowledge and secondarily expressed abstract subject synthesis.

Importantly, the findings of this study revealed there is a critical breakdown when instructors integrate information in an LMS. Through improved training, shared best practices, and mentoring, instructors can better identify and achieve learning outcomes and more effectively use an LMS to improve learning among adult learners in face-to-face courses (Baghdadi, 2011). Table 8 contains the four primary identified themes from the study, whether the theme was supported by research, and which authors were associated with the theme.

Table 8

Identified Themes and Research Association

Themes Identified	Supported by Literature?	Associated Authors
Creating a Data Management System	Yes	Bergman, 2012 Gary, 2013 Ginsburg, 2015 Jiao, Venkat, Han, & Weissman, 2014 Jones, 2011 Liu & Wenzhen, 2012 Rosen, 2013 Smith, 2010 Stalker & Horn, 2012 Unver, 2014 Weimer, 2013
Providing Professional Development Focused on Knowledge Acquisition	Yes	Bergman, 2012 Burrell, Finch, Fisher, Rahim, & Dawson, 2011 Dias & Diniz, 2014 Gary, 2013 Gonzalez, 2011 Mammadov & Topçu, 2014 Tulbure, 2012 Unver, 2014 Weimer, 2013 Wolfson, Cavanaugh, & Kraiger, 2014
Improving Student Engagement	Yes	Burrell, Finch, Fisher, Rahim, & Dawson, 2011 Ginsburg, 2015 Goddu, 2012 Heo & Lee, 2013 Mohammed, 2013 Ross, 2010 Stalker & Horn, 2012 Unver, 2014
Facilitating Instructor Feedback	Yes	Baghdad, 2011 Wichadee, 2014

Summary

Two research questions were developed to better understand the effect of a learning management system on adult learning. Data sets were used to help answer the two questions, including interviews with ten students and ten instructors, and reviewing syllabi and grading rubrics provided by instructors. The first question addressed how an LMS influences learning outcomes in a blended-learning setting in a degree-completion program. An analysis of the findings revealed a primary theme pertaining to Information, including data management and knowledge acquisition. Creating a Data Management System comprised of the following sub-themes: *1) Incorporating a Standardized Syllabus and 2) Incorporating a Standardized Grading Rubric*. Providing Professional Development Focused on Knowledge Acquisition comprised of the following sub-themes: *1) Providing Training, 2) Implementing Best Practices, and 3) Supporting Instructors through Mentoring*. The second question addressed how an LMS can improve student learning in a degree-completion program. An analysis of the findings revealed a primary theme pertaining to Integration, including application and engagement as well as communication and feedback.

Students and instructors shared many similar experiences using an LMS in a face-to-face course including a lack of formal training to use an LMS, the importance of clear and consistent information provided in and among various LMS course webpages, and best practices such as accuracy, consistency, and timeliness (ACT). One of the most notable differences between students and instructors' experiences pertained to their respective roles from learner to instructor. Instructors believed they were more effective incorporating an LMS in face-to-face courses than students perceived. Chapter five

consists of several sections including a brief review of the study process, implications, limitations, delimitations, recommendations for further academic research, and recommendations for practical application.

Chapter 5: Implications, Recommendations, and Conclusion

Research indicated colleges did not have a comprehensive strategy for using learning management systems in non-traditional programs (Jo, Kim, & Yoon, 2015). Other research revealed that even if colleges had technology resources dedicated for adult learners, those resources were not consistently and effectively used among faculty in non-traditional programs (Ross-Gordon, 2011). One of the most effective methods of promoting learning both inside and outside of the classroom is the incorporation of a learning management system (Asiri & Mahmud, 2012; Jo, Kim, & Yoon, 2015; Weimer, 2013). However, if students and instructors are unfamiliar or unprepared to use an LMS in face-to-face courses, an LMS may cause more harm than good (Ginsburg, 2015).

The problem addressed in this study was most colleges have not developed or implemented a comprehensive strategy for effectively incorporating learning management systems in non-traditional, degree-completion programs for adult learners (Burrell, Finch, Fisher, Rahim, & Dawson, 2012; Lane, Michelau, & Palmer, 2012, Messemer & Hansman, 2012; Weimer, 2013). The purpose of this qualitative, multiple case study was to develop a better understanding of how a learning management system (LMS), such as Moodle, was used by students and instructors in a non-traditional, degree-completion program at a private, four-year college. The phenomenon studied was how an LMS was used by students and instructors to facilitate the learning process and learning outcomes in a non-traditional, degree-completion program.

A qualitative, multiple case study was the research methodology used in this study. This study consisted of twenty participants, including 10 students and 10 instructors. The first 10 qualified students and the first 10 qualified instructors were

selected in this purposive-sampling study (Yin, 2014). All adult learner participants were actively enrolled and participating in a degree-completion program at Midwest University (MWU), or had graduated from a degree-completion program no more than two years prior to the study. For this study, instructors were adjunct, part-time, or full-time faculty members who taught face-to-face, online, or hybrid courses at MWU for three or more years. Instructor participants comprised of academic ranks varying from instructor, assistant professor, associate professor, and full professor. Data was also collected from syllabi and grading rubrics provided by the instructor participants using a document review form. Coding was conducted to identify patterns and themes in the data (Yin, 2014). Following data analysis, results were compiled to provide a better understanding of the role of a learning management system in face-to-face courses in a non-traditional, degree-completion program.

Research in any academic field is a rigorous process of discovery, analysis, and composition (Yin, 2014). Due to the researcher's role in data collection and analysis, the qualitative research process is subjective (Yin, 2014). The researcher included three primary quality measures to assure ethical compliance including scientific method, researcher bias, and participant protection. Further, three primary methodological assumptions were made including 1) the primary relationship was between adult learners and their learning centers (e.g., classroom and learning management system), 2) credible participants were chosen based on the selection criteria, and 3) honesty and accuracy by the participants was also assumed. An additional assumption was that saturation was met based on the estimated sample size.

The researcher adhered to the standards and practices of privacy, confidentiality,

and anonymity based on federal research guidelines, as outlined in Northcentral University's Dissertation Center. The researcher provided a copy of the Informed Consent form to each participant. Whenever possible, the researcher reported information anonymously and aggregated data to protect t participant identities. Because the research was intended to benefit students as well as instructors, human subjects understood their involvement contributed to an expanded understanding of how adult learners use an LMS in face-to-face courses. As both a quality control process and an ethical assurance, member checking was conducted with each participant to ensure the researcher's data was accurate and complete (Yin, 2014).

Results from this study may provide a better understanding of students and instructors' experiences using an LMS in face-to-face courses in a non-traditional, degree-completion program. By recognizing what information was and was not included, and how information was or was not integrated in an LMS, students may experience a more positive learning experience in their face-to-face courses. Through improved training, best practices, and mentoring, students and instructors may be better prepared to maximize the resource potential of an LMS in face-to-face courses. By better integrating information through application/engagement and communication/feedback, students may experience a more effective learning process and instructors may be able to better develop and achieve learning outcomes.

Results from this study may be beneficial to not only students and instructors, but administrators (including, but not limited to, department chairs, instructional designers, and program developers) and educational scholars and researchers. Results of this study may also contribute to improved instructor effectiveness, increased student satisfaction,

as well as higher student persistence and graduation rates. A brief review of the study process, implications, limitations, delimitations, recommendations for further academic research, and recommendations for practical application follow.

Implications

By analyzing data from the study, a better understanding was gained of how students and instructors use a learning management system in face-to-face courses. Based on the data, four implications emerged. There are two implications for the first research question including the need to standardize syllabi and grading rubrics and the need to develop a comprehensive training program. There are two implications for the second research question including the need to train and mentor instructors and the need to improve instructor feedback to students.

Research question one (Q1) implications. The first research question (Q1) was, "How does a learning management system (LMS), such as Moodle, influence non-traditional students' learning outcomes managed in a blended learning setting in the Applied Organizational leadership (AOL) degree completion program at Midwest University (MWU) as perceived by students and instructors?" This research question was developed from adult learning theory and e-learning theory (Archer & Garrison, 2010; Knowles, 1980; Kolb, 1984; Moore & Kearsley, 2005; Ross, 2010). The purpose of the first research question was to better understand how an LMS was used by instructors and students in face-to-face courses in a non-traditional, degree-completion program. To answer the research question, 20 interviews were conducted with 10 student participants and 10 instructor participants. Based on the responses from the participants, the primary theme of Information emerged. Specifically, students and instructors

perceived the primary function of an LMS was to coordinate, disseminate, and manage information relating to the course. This information included textbook, syllabus, grading rubric, course-related documents, handouts, PowerPoint slides, course-related resources including articles, journals, periodicals, and gradebooks associated with face-to-face courses.

Each of the 10 instructor participants provided one syllabus and one grading rubric for a face-to-face course he or she taught in which an LMS was used. A document review form was used to collect specific data from the syllabi and grading rubrics. The data was collected through content analysis and coded. Following coding, two themes emerged including 1) Creating a Data Management System and 2) Providing Professional Development Focused on Knowledge Acquisition.

Implication 1. Many instructors in a non-traditional, degree-completion program did not list all course activities and assignments, coordinated through a learning management system, on their syllabi and grading rubrics. When syllabi and grading rubrics did not include information or contained inconsistent information, students were confused and frustrated. There is a need to standardize syllabi and grading rubrics to ensure all activities and assignments are included and connected to learning outcomes.

Implication 2. Many colleges did not have a comprehensive training program for students and instructors using a learning management system in face-to-face courses in a non-traditional, degree-completion program (Burrell, Finch, Fisher, Rahim, & Dawson, 2011; Messemer & Hansman, 2012). Students and instructors were often unprepared to effectively use an LMS in face-to-face courses. A lack of preparation produced feelings of disappointment and frustration for students and instructors. There is a need to develop

and provide a comprehensive training program to empower students and instructors to effectively use an LMS in face-to-face courses.

Research question two (Q2) implications. The second research question (Q2) was, "How can a learning management system (LMS), such as Moodle, improve non-traditional students' learning in the Applied Organizational Leadership (AOL), degree-completion program at Midwest University, as perceived by students and instructors?" This research question included two primary theories; adult learning theory and e-learning theory (Archer & Garrison, 2010; Knowles, 1980; Kolb, 1984; Moore & Kearsley, 2005; Ross, 2010). The purpose of the second research question was to evaluate the role of an LMS, including students and instructors' experiences and preferences, in face-to-face courses in a non-traditional, degree-completion program.

To answer the research question, 20 interviews were conducted with 10 student participants and 10 instructor participants. Based on the responses from the participants, the primary theme of Integration emerged. Specifically, students and instructors perceived the secondary function of an LMS was to facilitate the learning process by enhancing subject matter through a variety of activities and assignments. When those activities and assignments were connected to learning outcomes, instructors provided better coordination of subject matter, and students experienced higher levels of engagement with, comprehension, and relevancy of subject matter (Jiao, Venkat, Han, & Weissman, 2014). Integration included critical thinking exercises, discussion forums, question-and-answer forums, chats, podcasting, videos, writing assignment links, and other activities and assignments associated with face-to-face courses.

All 20 participants were interviewed and audio-recorded. The recordings were

transcribed. The transcription data was collected through content analysis and coded.

Following coding, two themes emerged including 1) Improving Student Engagement and

2) Facilitating Instructor Feedback.

Implication 1. When used effectively by instructors, students believed a learning

management system added value to face-to-face courses. However, students contended

most instructors did not use LMS's actively, consistently, or sufficiently. Therefore,

students often perceived instructors' usage of an LMS as ineffective. There is a need to

train and mentor instructors on essential skills and best practices to increase student

engagement when using an LMS in face-to-face courses.

Implication 2. In addition to improved engagement, students preferred more

frequent and substantive feedback from instructors through a learning management

system. Students expressed interest in receiving more contact and interaction with

instructors during a face-to-face course. There is a need for instructors to increase

communication with students between face-to-face class sessions. Instructors can use an

LMS between classes to answer questions, provide clarification or direction on subject

matter, provide feedback on submitted assignments, and update grades.

Limitations

There were several limitations associated with the study. First, the transferability

of the findings was limited to two primary theories including adult learning theory and e-

learning theory. Second, the study was contained to only one non-traditional, degree-

completion program, focused exclusively on educational technology at one private

Midwestern university. Third, the sample size was limited to 10 students and 10

instructors. Fourth, the study did not include administrators or instructional designers.

Fifth, data was only collected from instructor-provided syllabi and grading rubrics.

There were two unanticipated limitations with the study. First, student grades were not provided by students or instructors because most grading rubrics did not provide sufficient data connecting activities and assignments coordinated through a learning management system (LMS) to student grades. Therefore, no relationship between learning outcomes and grades could be established. Secondly, the researcher did not have access to all instructors' course pages in Moodle, the primary LMS reviewed in the study. Reviewing LMS pages was not an aspect of data triangulation in this study and it was not included in the IRB process. So, specific LMS pages were not evaluated in this study. Based on these limitations, methodological recommendations were made to suggest future research.

Delimitations

The study was delimited to adult learners, non-traditional instructors, and one non-traditional, degree-completion program. The participants for the study were selected based on the following criteria; 1) students were adult, degree-seeking students in one business-related, non-traditional program, 2) students were either actively pursuing a degree or recently graduated from the business-related, non-traditional program, 3) instructors taught in the same business-related, non-traditional, degree-completion program, 4) instructors were experienced using an LMS in their face-to-face courses. The setting of the study was one private, Midwestern university. The criteria for the study were delimited to reduce external variables within the study (e.g., only one adult learner population, only one degree-completion program, and only one subject discipline). Based on these delimitations, methodological recommendations were made

to suggest future research.

Recommendations

Recommendations from this study are organized into two sections including 1) recommendations for academic research and 2) recommendations for practical application.

Recommendations for further academic research. There are five recommendations for further academic research including expanding the study, conducting the study using the quantitative research method, evaluating different learning management systems, managing the study at different colleges and/or with different degree-completion programs, and researching different educational technologies.

Recommendation 1. The first recommendation is to conduct a similar study on a larger scale. A similar study could be expanded to include more students and more instructors based on an appropriate population size to ensure saturation is met (Yin, 2014). By including more students and instructors, the findings of this study may be confirmed, contrasted, or expanded. Further, the study could be widened to include college administrators, instructional designers, and/or information specialists. By incorporating additional college positions, new perspectives, thoughts, and opinions could be presented to enhance this study. Additionally, the study could be deepened to include students who completed a degree-completion program in which a learning management system was used in face-to-face courses.

Recommendation 2. The second recommendation is to design a similar study using a quantitative or mixed-methods research approach. A quantitative research method could capture more numerical data using a Likert-based scale or similar data

collection instrument. This method would also allow more precise, easily-categorized information by reducing open-ended responses and increasing statistical data.

Recommendation 3. The third recommendation is to evaluate different learning management systems. This study focused primarily on Moodle, the LMS used exclusively at Midwest University (MWU). However, there are several other LMS's, such as ANGEL, BlackBoard, Canvas, Desire2Learn, and WebCT commonly used by colleges (Dias & Diniz, 2014; Gary, 2013; Yong & Mills, 2014). Several instructors who participated in this study used other LMS's and reported different experiences with other LMS's. Additionally, there are different types of learning management systems, including cloud-based, historical, open-source, and proprietary which may provide different data in a different study.

Recommendation 4. The fourth recommendation is to broaden the scope to the population and research setting. One suggestion is to manage the study at different colleges and/or different degree-completion programs (e.g., education, nursing, psychology, etc.). Different colleges may have different policies, procedures, practices, and training methods for students and instructors using a learning management system in face-to-face courses. Different degree-completion programs may use an LMS differently dependent on the format, pace, and structure of the program.

Recommendation 5. The fifth recommendation is to research different educational technologies. This study focused on learning management systems. However, there are dozens of educational technologies used by colleges including massive open online courses (MOOC's), interactive media, presentation media, and social media (Rosen, 2013; Snyder, 2015; Wang, Lit woo, Lang Quek, Yang, and Liu,

2012). A different study, using a quantitative or qualitative method of inquiry or mixed method, could evaluate how various educational technologies impact program-specific learning outcomes.

Recommendations for practical application. There are five recommendations for practical application including implementing a comprehensive learning management system training program for instructors, managing a mentoring program for instructors, developing a focused learning management system training program for students, creating and coordinating standardized syllabi and grading rubrics, and establishing adequate quality assurance measures for both students and instructors.

Recommendation 1. The first recommendation is to implement a comprehensive learning management system training program for new instructors. This training program could include basic orientation to intermediate skills training required to effectively teach using an LMS. Part of this recommendation is to provide ongoing training for established instructors. This training program could consist of best practices, new resources, and education on upgraded software versions. Based on the findings of this study, instructors prefer a face-to-face format with hands-on learning opportunities.

Recommendation 2. The second recommendation is to manage a mentoring program for instructors. This mentoring program could involve pairing established instructors who have five or more years of blended teaching experience with instructors who have zero to two years of blended teaching experience. Based on the findings of this study, instructors preferred to meet no more than semi-annually for face-to-face college-required training. Although there were many effective mentoring methods, instructors could meet in person every other quarter and remotely (e.g., video-conferencing,

telephone, Skype, etc.) every other quarter. This approach would provide regular contact and communication between the partnered instructors and promote continued skill-building and resource-sharing.

Recommendation 3. The third recommendation is to develop a focused learning management system training program for new students. For traditional, undergraduate students, the training could be incorporated into a freshman, or first year student, seminar program. For non-traditional, undergraduate students, the training could be part of an orientation or convocation program. Based on the findings of this study, adult learners preferred LMS training to comprise of no more than two hours. Most student participants in this study reported being familiar with computers and basic software programs. Further, many student participants worked with computers in their professions, so LMS training would not need to be comprehensive.

Recommendation 4. The fourth recommendation is to create and coordinate standardized syllabi and grading rubrics for all instructors teaching in a non-traditional, degree-completion program. Based on the findings of this study, the format, structure, verbiage, as well as precision and scope of information contained in syllabi varied considerably. Further, some grading rubrics included only the assignment name and point value; whereas other rubrics contained detailed information about the assignment including learning outcomes and detailed point-category descriptions. Additionally, to ensure measurable objectives are met, syllabi and grading rubrics could contain stated learning outcomes consistently.

Recommendation 5. The fifth recommendation is to establish adequate quality assurance measures for both students and instructors. Colleges could implement a

student progress reporting system, such as DropGuard™, to help manage attendance, grades, technology, persistence, and graduation issues. Further, colleges could integrate policies and procedures for department chairs, or other instructor supervisors, to review learning management systems ongoing. This would foster stronger quality control of instructors to ensure they are managing their learning management systems effectively.

Conclusions

This chapter consists of several sections including a brief review of the study process and findings, implications, limitations, delimitations, recommendations for further academic research, and recommendations for practical application. Four implications are discussed, two for each research question. Five limitations and two delimitations are presented. There are five recommendations for further academic research including expanding the study, conducting the study using the quantitative research method, evaluating different learning management systems, managing the study at different colleges and/or with different degree-completion programs, and researching different educational technologies.

The recommendations addressed both a practical and methodological perspective and were based on the limitations, delimitations, and implications from this study. There are five recommendations for practical application including implementing a comprehensive learning management system training program for instructors, managing a mentoring program for instructors, developing a focused learning management system training program for students, creating and coordinating standardized syllabi and grading rubrics, and establishing adequate quality assurance measures for both students and instructors.

Education has changed markedly over the past 20 years through a sharp influx of adult learners and increased technologies. Although adult learners appear poised to retain a prominent place on college campuses for many years, technology will likely forever be a part of education (NCES, 2014). Colleges must ensure they develop a comprehensive strategy for assessing, implementing, and evaluating technological resources to help students succeed academically and instructors flourish professionally as college trends continue to change.

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Appendices

Appendix A: E-Mail Request for Volunteer Participants
(Student Version)

(Insert date)

Dear (insert name),

I am a doctoral candidate at Northcentral University pursuing an Ed.D. in Organizational Leadership. My research is focused on how a learning management system (LMS), such as Moodle, is used by adult learners in a college program.

I am seeking adult learners who are willing to help with a study in which you provide your experiences and opinions about how you have used a learning management system, such as Moodle, in your college program. If you:

- are between the ages of 25-70 years
- have completed at least one face-to-face course in which an LMS was used
- would like to participate in my research study for a one hour interview (via phone or   Skype)

Please reply to this e-mail (insert MWU's IRB e-mail), phone (insert MWU's IRB phone number) with at least three dates and times you are available for an interview. If you are not interested in helping with the study, but you would like to refer someone, please send me their name(s) and contact information.

Thank you for your interest.

Jonathan Downs
Doctoral Candidate
Northcentral University
Prescott Valley, Arizona
J.Downs0119@email.ncu.edu

Appendix B: E-Mail Request for Volunteer Participants
(Instructor Version)

(Insert date)

Dear (insert name),

I am a doctoral candidate at Northcentral University pursuing an Ed.D. in Organizational Leadership. My research is focused on how a learning management system (LMS), such as Moodle, is used by instructors in a college program.

I am seeking instructors who are willing to help with a study in which you provide your experiences and opinions about how you have used a learning management system, such as Moodle, in your college program. If you:

- Have taught at least one non-traditional face-to-face course
- Have used an LMS in your face-to-face course
- Can provide a course syllabus for the face-to-face course
- Can provide a grading rubric for the face-to-face course
- Would like to help with my doctoral research study for a one hour interview (via phone or skype)

Please reply to this e-mail (insert MWU's IRB e-mail), phone (insert MWU's IRB phone number) with at least three dates and times you are available for an interview. If you are not interested in helping with the study, but you would like to refer someone, please send me their name(s) and contact information.

Thank you for your interest.

Jonathan Downs
Doctoral Candidate
Northcentral University
Prescott Valley, Arizona
J.Downs0119@email.ncu.edu

Appendix C: E-mail Notification of Selection to be a Voluntary Participant
(Student Version)

(Insert date)

Dear (insert name),

Thank you for your interest in helping with my doctoral research study. To review, I am a doctoral candidate at Northcentral University pursuing an Ed.D. in Organizational Leadership. My research is focused on how a learning management system (LMS), such as Moodle, is used by adult learners in a college program.

You have indicated that you are willing to voluntarily participate in a study in which you provide your experiences and opinions about how you have used a learning management system, such as Moodle, in your college program. You affirm that you:

- Are between the ages of 25-70 years
- Have completed at least one face-to-face course in which an LMS was used
- Agree to voluntarily participate in my doctoral research study for a one hour electronic interview (via phone or skype).

Based on the dates and times you provided, I will plan to contact you by phone on (insert date and time). Please let me know if this time will not work for you. Thank you again for helping with this study. I look forward to talking with you soon.

Jonathan Downs
Doctoral Candidate
Northcentral University
Prescott Valley, Arizona
J.Downs0119@email.ncu.edu

Appendix D: E-mail Notification of Selection to be a Voluntary Participant
(Instructor Version)

(Insert date)

Dear (insert name),

Thank you for your interest in helping with my doctoral research study. To review, I am a doctoral candidate at Northcentral University pursuing an Ed.D. in Organizational Leadership. My research is focused on how a learning management system (LMS), such as Moodle, is used by adult learners in a non-traditional program.
You have indicated that you are willing to voluntarily participate in a study in which you provide your experiences and opinions about how you have used a learning management system, such as Moodle, in your non-traditional program. You affirm that you:

- have taught at least one non-traditional face-to-face course
- have incorporated an LMS in your face-to-face course
- can provide a course syllabus for the face-to-face course
- can provide a grading rubric for the face-to-face course
- agree to voluntarily participate in my doctoral research study for a one hour electronic interview (via phone or Skype),

Based on the dates and times you provided, I will plan to contact you by phone on (insert date and time). Please let me know if this time will not work for you. Thank you again for your help with this study. I look forward to talking with you soon.

Jonathan Downs
Doctoral Candidate
Northcentral University
Prescott Valley, Arizona
J.Downs0119@email.ncu.edu

Appendix E: Informed Consent (Student Version)

Informed Letter of Consent

**Exploring Blended Learning: A Case Study of Adult Learners Using a
Learning Management System in Face-to-Face Classes**

Introduction:
My name is Jonathan Downs. I am a doctoral candidate at Northcentral University pursuing an Ed.D. in Organizational Leadership. My dissertation is focused on how a learning management system (LMS), such as Moodle, is used by adult learners in a non-traditional program. I am completing this research as part of my doctoral degree. I invite you to participate.

Activities:
If you participate in this research:
1. You will be asked to participate in an electronic interview by phone. If you prefer to use Skype, I will be happy to accommodate your request.
2. The interview will last approximately one hour.
3. You will be asked a few leading questions. However, you will be able to express your thoughts and feelings as you prefer.

Eligibility:
You are eligible to participate in this research if you:
1. Are between the ages of 18-65 years
3. Have completed at least one face-to-face course in which an LMS was used
4. Are willing to voluntarily participate in my doctoral research study by participating in an one hour electronic interview (via phone or Skype)

You are not eligible to participate in this research if you:
1. Are not between the ages of 18-65 years
2. Have not completed at least one face-to-face course in which an LMS was used
3. Would not like to voluntarily participate in my doctoral research study for a one hour electronic interview (via phone or Skype)

I plan to include 15 students in this research.

Risks:
There are minimal-to-no anticipated risks in this study.

Audio-Recording:
The electronic interview will be recorded using a digital-recording application on the researcher's phone. The audio recording will be used only to ensure accuracy of participants' responses. The audio recording will not be shared with anyone without your express written permission.

_____ (Please initial, indicating consent for the interview to be audio-recorded.)

Benefits:
If you decide to participate, there will be no direct benefits to you. However, you will help provide important information about adult learners' experiences and preferences using a learning management system, such as Moodle, in a non-traditional program.

The potential benefits to others include instructors better understanding adult learners' experiences and preferences using a learning management system, such as Moodle, in a non-traditional program.

Confidentiality:
The information you provide will be kept confidential to the extent allowable by law. I will not ask for your name. I will use a number, as a pseudonym, to identify you in the study. Your responses will be compiled with other participants so no information will be personally-identifiable in this study.

The people who will have access to your information are myself, my dissertation chair, my subject matter expert, my methodologist, and other researchers. The Institutional Review Board may also review my research and view your information.

I will secure your information by storing it on a secured, private computer. The computer is password-protected and the Microsoft Excel file will be password-protected. Any handwritten or printed data will be maintained in a locked file cabinet in the researcher's office. I will keep your data for 5 years. Then, I will delete electronic data and destroy paper data.

Contact Information:
If you have questions for me, you can contact me at 913-971-3865 or J.Downs0119@email.ncu.edu. My dissertation chair's name is Dr. Judith Converso. She works at Northcentral University and is supervising me on the research. You can contact her at 407-695-8154 or jconverso@ncu.edu.

If you have questions about your rights in the research, or if a problem has occurred, or if you are injured during your participation, please contact the Institutional Review Board at: irb@ncu.edu or 1-888-327-2877, ext. 8014.

Voluntary Participation:
Your participation is voluntary. If you decide not to participate, or if you stop participation after you start, there will be no penalty to you. You will not lose any benefit to which you are otherwise entitled.

Compensation:
There is no financial compensation for your participation in this study.

Signature:

A signature indicates your understanding of this consent form. You will be given a copy of the form for your records.

Participant's Printed Name: _____

Participant's Signature: _____

Date: _____

Researcher's Printed Name: _____

Researcher's Signature: _____

Date: _____

Appendix F: Informed Consent (Instructor Version)

Informed Letter of Consent

**Exploring Blended Learning: A Case Study of Adult Learners Using a
Learning Management System in Face-to-Face Classes**

Introduction:
My name is Jonathan Downs. I am a doctoral candidate at Northcentral University
pursuing an Ed.D. in Organizational Leadership. My dissertation is focused on how a
learning management system (LMS), such as Moodle, is used by instructors in a non-
traditional program. I am completing this research as part of my doctoral degree. I invite
you to participate.

Activities:
If you participate in this research:
    1. You will be asked to participate in an electronic interview by phone. If you
        prefer to use Skype, I will be happy to accommodate your request.
    2. The interview will last approximately one hour.
    3. You will be asked a few leading questions. However, you will be able to
        express your thoughts and feelings as you prefer may opt out at any time.

Eligibility:
You are eligible to participate in this research if you:
    1. Are between the ages of 18-65
    2. Have taught at least one non-traditional face-to-face course
    3. Have incorporated an LMS in your face-to-face course
    4. Can provide a course syllabus for the face-to-face course
    5. Can provide a grading rubric for the face-to-face course
    6. Would like to voluntarily participate in my doctoral research study for a one
        hour electronic interview (via phone or skype)

You are not eligible to participate in this research if you:
    1. Are not between the ages of 18-65
    2. Have not taught at least one non-traditional face-to-face course
    3. Have not incorporated an LMS in your face-to-face course
    4. Cannot provide a course syllabus for the face-to-face course
    5. Cannot provide a grading rubric for the face-to-face course
    6. Would not like to voluntarily participate in my doctoral research study for a
        one hour electronic interview (via phone or skype)

I plan to include 10 instructors in this research.

Risks:
There are minimal-to-no anticipated risks in this study.

Audio-Recording:
The electronic interview will be recorded using a digital-recording application on the researcher's phone. The audio recording will be used only to ensure accuracy of participants' responses. The audio recording will not be shared with anyone without your express written permission.

_____ (Please initial, indicating consent for the interview to be audio-recorded.)

Benefits:
If you decide to participate, there will be no direct benefits to you. However, you will help provide important information about how instructors use a learning management system, such as Moodle, in a non-traditional program.

The potential benefits to others include adult learners better understanding adult learners' experiences and preferences using a learning management system, such as Moodle, in a non-traditional program.

Confidentiality:
The information you provide will be kept confidential to the extent allowable by law. I will not ask for your name. I will use a number, as a pseudonym, to identify you in the study. Your responses will be compiled with other participants so no information will be personally-identifiable in this study.

The people who will have access to your information are myself, my dissertation chair, my subject matter expert, my methodologist, and other researchers. The Institutional Review Board may also review my research and view your information.

I will secure your information by storing it on a secured, private computer. The computer is password-protected and the Microsoft Excel file will be password-protected. Any handwritten or printed data will be maintained in a locked file cabinet in the researcher's office. I will keep your data for 5 years. Then, I will delete electronic data and destroy paper data.

Contact Information:
If you have questions for me, you can contact me at 913-971-3865 or J.Downs0119@email.ncu.edu. My dissertation chair's name is Dr. Judith Converso. She works at Northcentral University and is supervising me on the research. You can contact her at 407-695-8154 or jconverso@ncu.edu.

If you have questions about your rights in the research, or if a problem has occurred, or if you are injured during your participation, please contact the Institutional Review Board at: irb@ncu.edu or 1-888-327-2877, ext. 8014.

Voluntary Participation:
Your participation is voluntary. If you decide not to participate, or if you stop participation after you start, there will be no penalty to you. You will not lose any benefit to which you are otherwise entitled.

Compensation:
There is no financial compensation for your participation in this study.

Signature:
A signature indicates your understanding of this consent form. You will be given a copy of the form for your records.

Participant's Printed Name: _____

Participant's Signature: _____

Date: _____

Researcher's Printed Name: _____

Researcher's Signature: _____

Date: _____

Appendix G: Interview Questions (Student Version)

Protocol

1. Welcome the participant to the interview.

> Hello. Thank you for taking time and being willing to participate in this study. I look forward to hearing from you. I will begin by explaining the background of the study and some important information for you as a participant in this study.

2. Explain the purpose of the study.

> The purpose of this study is to evaluate how a learning management system (LMS), such as Moodle, is used by faculty and students in a non-traditional, degree-completion programs. The phenomenon (key observation) that will be studied is how a LMS is used to facilitate the learning process for adult learners in a non-traditional, degree-completion program.

3. Explain that the interview will be recorded.

> I am planning to audio record this interview. The purpose of recording the interview is to ensure accuracy and completeness of the information you provide and I record. If you do not want to be audio-recorded, please indicate that now. I will not record the interview if that is your preference.

4. Explain the participant's right to opt out.

> As a participant in this study, you have the right to opt out (choose not to participate) at any point in the interview. If you want to opt out, please indicate that you would like to end the interview.

5. Explain the participant's right to refuse to answer any question.

> As a participant in this study, you have the right to refuse to answer any question you choose. If you do not want to answer a question, please state that you would like to not answer that question when it is asked. We will then move to the next question.

6. Explain the participant's right to confidentiality.

> I will not use any personally-identifiable information during this study or in the printed report of this study. Your interview will only be identified by a pseudonym. Confidentiality of your information is very important to me.

7. Ask if there are any questions from the participant.

Do you have any questions for me before I begin the interview?

8. Begin the interview.

We will begin the interview. I am starting the audio-recording now.

Questions

1. How many face-to-face courses have you taken in which a learning management system (LMS), such as Moodle, was used? What were the course titles or subjects?

2. What were your experiences using an LMS in those face-to-face courses?

3. Do you believe you lacked any necessary skills for effectively using an LMS in a face-to-face course?

4. Do you believe you could have benefitted from training to help prepare you for using a learning management system in a face-to-face course? If so, what type of training do you believe would have benefitted you? How would that training have benefitted you?

5. Was your experience different in a face-to-face course in which an LMS was used versus a face-to-face course in which an LMS was not used? In what ways were your experiences different?

6. Do you believe the instructor effectively used the LMS in the face-to-face courses in which an LMS was used? In what ways did the instructor make effective use of the LMS? What activities and assignments were the most effective? What activities and assignments were the least effective?

7. In what ways could the instructor have better used the LMS in the face-to-face courses?

8. Do you believe the LMS helped to reinforce the subject matter from a previous face-to-face class session or prepare you for a future face-to-face class session? How do you believe the LMS helped?

9. What skills did you developed or do you need to develop to use an LMS more effectively in a face-to-face course?

10. Do you have any other experiences or observations you would like to share about using an LMS in a face-to-face course?

Appendix H: Interview Questions (Instructor Version)

Protocol

1. Welcome the participant to the interview.

    Hello. Thank you for taking time and being willing to participate in this study. I look forward to hearing from you. I will begin by explaining the background of the study and some important information for you as a participant in this study.

2. Explain the purpose of the study.

    The purpose of this study is to evaluate how a learning management system (LMS), such as Moodle, is used by faculty and students in a non-traditional, degree-completion programs. The phenomenon (key observation) that will be studied is how a LMS is used to facilitate the learning process for adult learners in a non-traditional, degree-completion program.

3. Explain that the interview will be recorded.

    I am planning to audio record this interview. The purpose of recording the interview is to ensure accuracy and completeness of the information you provide and I record. If you do not want to be audio-recorded, please indicate that now. I will not record the interview if that is your preference.

4. Explain the participant's right to opt out.

    As a participant in this study, you have the right to opt out (choose not to participate) at any point in the interview. If you want to opt out, please indicate that you would like to end the interview.

5. Explain the participant's right to refuse to answer any question.

    As a participant in this study, you have the right to refuse to answer any question you choose. If you do not want to answer a question, please state that you would like to not answer that question when it is asked. We will then move to the next question.

6. Explain the participant's right to confidentiality.

    I will not use any personally-identifiable information during this study or in the printed report of this study. Your interview will only be identified by a pseudonym. Confidentiality of your information is very important to me.

7. Ask if there are any questions from the participant.

> Do you have any questions for me before I begin the interview?

8. Begin the interview.

> We will begin the interview. I am starting the audio-recording now.

Questions

1. How many face-to-face courses have you taught in which a learning management system (LMS), such as Moodle, was used? What were the course titles or subjects?

2. What were your experiences using an LMS in those face-to-face courses?

3. Do you believe you lacked any necessary skills for effectively using an LMS in a face-to-face course?

4. Do you believe you could have benefitted from training to help prepare you for using a learning management system in a face-to-face course? If so, what type of training do you believe would have benefitted you? How would that training have benefitted you?

5. Was your experience different in a face-to-face course in which you used an LMS versus a face-to-face course in which an LMS was not used? In what ways were your experiences different?

6. Do you believe students effectively participated or completed assignments using the LMS in the face-to-face courses in which an LMS was used? In what ways did students successfully use the LMS? What activities and assignments were the most effective? What activities and assignments were the least effective?

7. In what ways could you have better used the LMS in the face-to-face courses?

8. Do you believe the LMS helped to reinforce the subject matter from a previous face-to-face class session or prepare students for a future face-to-face class session? How do you believe the LMS helped?

9. What skills did you developed or do you need to develop to use an LMS more effectively in a face-to-face course?

10. Do you have any other experiences or observations you would like to share about using an LMS in a face-to-face course?

Appendix I: Document Review Form

The following data will be collected from the syllabus and grading rubric provided by each instructor participating in the study.

Instructor #	
Course Title / Subject	
Course Description	
Course Objectives	
Course Activities / Assignments (All)	
Course Activities / Assignments (LMS Only)	
Student Grades	
Measurable Objectives (Achieved / Not Achieved)	