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An Examination of Student Success and Barriers in a Foundational Secondary Teacher Education Online Course

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121 Pages

The continual attempts by higher education to create more learning opportunities for students through distance learning programs tend to focus on increasing enrollment and providing an opportunity for students to obtain a degree in higher education. This study aimed to bring to light any significant differences when comparing student performance, completion, and dropout rates in traditional face-to-face (F2F) versus online versions of the same foundational course in a secondary education teacher preparation program at one university in the midwestern part of the country. Additionally, this study concentrated on identifying what connections may be drawn to the teacher shortage issue in the state.

This study utilized pre-existing university data gathered over a two-year or six-semester period from Spring 2018 through Fall 2019 to determine to what degree students who enroll in the online version of the initial foundational course in a teacher preparation program are at a disadvantage for completing the course. The study revealed a significantly higher rate of failure for students enrolled in the online modality of the course, either by earning less than a passing grade (14.72%) or dropping out prior to completion (18.09%). This research also uncovered that if students are not equally successful in each course modality of the foundational course in a teacher preparation program, adverse impacts on overall program completion may continually strain the teacher shortage issue in the state.

KEYWORDS: distance education, Transactional Distance Theory, teacher preparation, online student success, online learning

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Propter Scientiae Amorem

G.H.

CONTENTS

LIST OF TABLES

CHAPTER I: INTRODUCTION

Overview

Distance education, distance learning, online learning, remote learning, and virtual learning are used interchangeably to describe learning that occurs when physical distance separates an instructor from a student in a learning space. Distance education is defined as "The interplay between people who are teachers and learners in environments that have the special characteristic of being separate from one another" (Moore & Kearsley, 2012, p. 209). As the 21st century continues, online education is the newest iteration of distance learning, separating the student and the instructor spatially but still utilizing a connected learning environment (Moore & Kearsley, 2012). As students continue to seek different learning modalities connecting them to higher education classrooms, online education highlights student access and ability to navigate their own learning schedules while simultaneously providing higher education institutions the platform to recruit and retain higher enrollment (Lederman, 2018).

The theory of transactional distance details how distance should not be a factor in learning, citing, "Distance is not a matter of geographic location, but a pedagogical phenomenon" (Moore & Kearsley, 2012, p. 209). A further interpretation describes how the effect that geographic distance, or separation, has on instructors' and learners' interactions should not negatively impact learning if instruction and learning transactions are conducted correctly (M. Moore, 2013; Moore & Kearsley, 2012). Interactions between instructors and learners must exist for a learning environment to develop for student success (M. Moore, 1989, 1993; Moore & Kearsley, 2012). Throughout this study, these interactions will be defined, explained, and theorized to create the research's focal point to identify student success when enrolled in an

online foundational course as part of a teacher education course sequence in the College of Education at a university in the Midwestern region of the United States of America.

Student interest in seeking distance learning opportunities in online education formats is the number one rising demographic when looking at college enrollment (Allen & Seaman, 2017). This trend is supported by an overall increase in distance education course enrollment for the past fourteen years, representing the only consistent increase in postsecondary enrollment (Allen & Seaman, 2017). As more students enroll in online education, higher education institutions continue to design online courses utilizing transactional distance theory as a way to contest potential barriers to creating successful experiences (Allen & Seamen, 2006; Moore & Kearsley, 2012). More than 33% of college students registered in at least one distance learning course during the 2016-2017 college year (Allen & Seaman, 2017). By 2019, this number rose to 37.2% (National Center for Educational Statistics, 2019). As mentioned previously, with the fourteen-year continual growth in student enrollment in online education, it is estimated the overall enrollment could surpass 40% by 2022, pre COVID-19 Pandemic (Allen & Seaman, 2017). Several examples of these trends are illustrated states across the United States, with approximately 50% of students in Arizona, New Hampshire, and West Virginia enrolled in online education courses compared to a low of 13% of students in Rhode Island (Allen & Seaman, 2017).

Higher education institutions will continuously focus on increasing student enrollment by providing options for students seeking distance learning coursework, aligning this priority with the need to provide continuous instruction to promote student success when enrolled in online courses. Instructors are continuously encouraged to develop learning interactions with students that allow for distance collaboration and positive outcomes between instructor and student

(Picciano, 2017). Instructors responsible for online course design must be cognizant of the elements of transactional distance, as outlined by Moore's theory, as they develop online learning environments allowing learning interactions to take place (Moore & Kearsley, 2012, Picciano (2017). Without an instructor's proper academic training and online pedagogy ability, students may feel unprepared and lack the sense of a personal connection to the course, instructor, or institution (Lederman, 2018; Moore & Kearsley, 2012).

According to data compiled by the Education Department's National Center for Education Statistics (NCES), more than 350,000 college students, or approximately 5.7% of students enrolled in college, registered for at least some online courses in 2016 (NCES, 2017). In 2017, more than six million students were taking at least one online learning course, representing a ratio of 1 student enrolled in an online course for every six students enrolled in higher education (NCES, 2017). Further detailing these enrollment growth trends, an article referenced by Lederman (2018) cited an approximate 6.6 million students enrolled in at least some online courses in 2017 as part of their academic program in higher education.

By 2019, college enrollment in all degree-granting postsecondary institutions was approximately 19,637,500 total students (NCES, 2019). A 19.7% increase of college level students enrolled in at least one online distance education course, or close to 7.31 million students in post-secondary, degree-granting institutions (NCES, 2019). In comparison, just over 3.5 million students are enrolled in some, but not all, distance learning courses as part of their higher education enrollment (NCES, 2019). These numbers support an overwhelming interest and represent the norm for online education growth, with students seeking out academic programs and access to undergraduate and graduate programs at an increased rate from students looking to enroll in online courses as part of their programs (Allen & Seaman, 2017).

As a recent example of the higher education's reliability on online education, the COVID-19 pandemic severely impacted education during the spring semester of 2020 by moving almost all courses in higher education online for a minimum of a year and a half. This major shift showed both the reliance and the trust in online education for most universities. Furthermore, a report in 2018-2019 outlined that 70% of all academic leaders in higher education believed that online learning outcomes are the same as those in F2F course settings (Magda et al., 2020). In addition, over 71% of chief academic leaders in the same report felt online education was a vital component of their overall long-term enrollment strategy. These statistics help create a clear interpretation of higher education's overall comfort with moving courses online during the pandemic. Although sufficient data may not be available at the time of this dissertation's completion, the belief is that some of this information will coincide with the overall understanding of the need for online education enrollment to match student interest.

Even though there is no wealth of data supporting online teacher preparation coursework, it is crucial to at least outline the landscape of online education enrollment. It is essential to provide a snapshot of the overall student demographics across U.S. college campuses concerning gender, ethnicity, race, and age when considering college enrollment, specifically when registering for online courses provided by higher education institutions. Highlighting these demographics will result in an understanding of the students enrolling in online courses and how higher education institutions must continue to focus on access and recruiting. Providing these statistics will make the necessary connection between how online education drives student access in higher education and how this access is supported through student success and achievement.

Turning attention specifically to student demographics by race and gender, in 2016, white students comprised nearly 57% of the college student population. This was compared to African

American students, 13.7% of the overall college students, and Hispanic students, 18.2% of the total college population (NCES, 2017). Moving deeper into these statistics, white undergraduate students made up 55.7% of the student population and 64.1% of the graduate student population. Undergraduate total enrollment numbers for African American (13.7%) and Hispanic students (19.4%), as well as graduate totals for African American students (14.3%) and Hispanic students (10.2%), represent the three highest student demographic populations currently in higher education (NCES, 2017).

Overall, the NCES (2017) reported that white student college enrollment has declined over the last three decades and was at just over 70% in 2000, with males 71.2% and females 69.7% of the college population demographics. In comparison, in 2000, African American students comprised 11.7% of the total student population, with males counting for 8.0% and females 13.1%. Hispanic student totals in 2000 were at 9.9% of the overall college population, with males enrolled at approximately 9.8% of the population demographics and female students 10.0% (NCES, 2017). Overall, white college students have had a steady 1-2% decline over the last twenty years, while African American and Hispanic student populations have grown steadily. Specifically, both African American and Hispanic female student demographics have seen a considerable increase during the same time period (NCES, 2017).

Much of the online learning growth is attributed to higher education's response to students wishing to obtain a college education while also working through personal time constraints (Lehman & Conceição, 2014). This creates a student need to recognize barriers created in busy schedules needing flexible learning time, inability to attend F2F courses on campus, and perceived lower cost (Allen & Seaman, 2014). With a continued increase in college students enrolling in online courses, colleges and universities must keep up with demand or risk

losing potential student enrollment and enrollment dollars. Higher education must develop course offerings, provide innovative teaching technologies for online learning, and match student demand for online learning options (Parker et al., 2011). This allows institutions to increase online programs that are typically more cost-effective to students while creating course and program availability (House-Peters et al., 2019). These factors will help higher education institutions roll out more online course options while focusing on student access to help students, specifically those from the demographics cited above (Alexious-Ray & Bentley, 2015; Lehman & Conceição, 2014).

Background of the Study

Distance education first emerged during the late 1800s and continues to be reshaped, restructured, and reorganized into the current edition used in higher education today (Miller et al., 2014). During the Industrial Revolution and between the late 19th and early 20th centuries, higher education used correspondence education to overcome the distance barriers in higher education to individuals who needed to learn skilled work while eliminating distance (Miller et al., 2014). Higher Education, as it was known, shifted directions from land grant liberal arts colleges and clergy colleges to focusing on the development of urbanization and industry through education for a growing immigrant population with skill development. Higher education began to train workers for the early 20th century's urbanization boon and made academic attainment easier by eliminating the limitations and expanding reach (Miller et al., 2014). Higher education attempted to diminish the distance in education with a system called Rural Free Delivery. Higher education institutions utilized home delivery to minimize distance excuses and bring education to rural areas in America. This system was initially used by three institutions and

is considered the "genesis of modern university outreach efforts" in higher education (Miller et al., 2014. p. 5).

As America went through another economic and social shift in 1950-1970 with social and technological advancements, higher education began using the television to diminish the limitations of distance again and reach students and help extend college access (Miller et al., 2014). Through the use of televisions, the "telecourse" was created using a combination of recorded video lectures, study guides, course work, and textbooks to allow students to be part of the higher education system. These courses were implemented through local broadcast areas and had a limited expansive nature but offered a broader range of higher education opportunities to prospective students (Miller et al., 2014). For the first time, students could see and listen to instructor lectures without a physical presence with the professors, allowing students to feel more connected to the university and coursework.

Soon, both the communication and technology paradigms shifted again to satellite and long-ranged television. Higher education began using some of these same technologies to create more access to distance education and reach more students who had an interest in attending college. Satellite technology created what became known as the telecourse, which combined video programs and highly developed printed materials in several areas of study (Miller et al., 2014). The telecourse became a model example of an open university. The use of telecommunications emerged as the next building block for distance learning as students from multistate and even international populations were able to become distance learners. These programs and courses were initial examples focused on adult learners in higher education as well as interdisciplinary and international programs generating a vast scale of student enrollment opportunities (Miller et al., 2014).

Finally, in the mid-1990's the creation of the World Wide Web allowed for an expansive new role in distance education throughout higher education. Higher Education experienced another paradigm shift due to technological advances and could finally reach students and create access without barriers. This new vision of education created a meld of higher education access goals to reach any student through a more expansive role to align with the needs of qualified, motivated students who only had distance as a barrier to seeking higher education degrees. For instance, the University of Illinois developed and activated the first internet web browser, which quickly adapted to housing a system for distance education to flourish (Miller et al., 2014). Pennsylvania State University and Maryland University constructed higher education courses infusing what is known as "synchronous delivery" into distance education, primarily focusing on adult learning. The programs concentrated on bachelor's as well as master's degree programs, hoping to expand higher education access internationally throughout Mexico and Europe (Miller et al., 2014). The development of the internet allowed higher education institutions to partner with other universities, both in the United States and internationally, to design programs sought out by students worldwide. Distance learning has taken on various online forms of online education, produced various instructor teaching methods, generated different learner environments, all under the premise of instructional design. Program design must continue to use intentionality when establishing ways to connect students to institutions when enrolled in distance programs (Saba & Shearer, 2018).

As higher education institutions continue looking to gain an advantage in student recruitment and retention, online education programs maintain a focus on developing improved student access methods. The key to long-lasting success will be constructing programs that nurture institutional learning and a high degree of academic success. Rehn et al. (2016) discussed

how F2F transition to online learning requires significant consideration to develop relationships and rapport through teacher-student interactions as critical to a positive learning environment. Rehn et al. (2016) also addressed the idea of teacher presence and the need for students to feel connected to the faculty members on the other side of the screen in an academic setting.

Educators can be confident of one idea, that technology is not the problem anymore, but what higher education institutions do with technology to implement the best learning practices and create access for students is the main concern (Lehman & Conceição, 2014). As more students continue to seek enrollment in online courses and learn through distance learning, higher education institutions need to develop programs to meet student demand needs. To ensure program development and student success in online courses, academic leadership must concentrate on both the student's support in these programs and the faculty who instruct these courses. A wealth of literature exists, explaining both the needs of students seeking success in online courses as well as faculty searching for pedagogical techniques to promote best practices in student learning online.

Problem Statement

Scholars have identified online education and enrollment in online courses as the next iteration of distance learning since the mid-1990s. The next wave of distance education has expanded to the highest available option to date, creating the most available online course development of the time (Miller et al., 2014). However, institutional concern remains related to overall student success when enrolled in online education courses based on statistics that show higher than average dropout and withdrawal rates (Lehman & Conceição, 2014). During the early part of the 21st century, research showed 50-70% of students drop out of online classes for

various reasons (Carr, 2000; Roblyer, 2006; Rovai & Wighting, 2005; Gibbs & Simpson, 2004). While student success has increased, dropout rates have declined over the last decade. The factors influencing these student outcomes remain the same but are highlighted by the continued growth of online education (Lehman & Conceição, 2014). Those reasons include student feelings of isolation, lack of a student's online identity, lack of connection to the course and instructor, and low student satisfaction levels (Roblyer, 2006; Lehman & Conceição, 2014). Research completed by Tucker (2014) identified factors within a learning environment that contributed to student success or failure. In contrast, the study also identified factors stretching beyond institutional support and described them as students' influences such as self-efficacy, educational resilience, and motivation (Tucker, 2014). Furthermore, Lehman & Conceição (2014) claimed the following about such factors:

> Among the reasons for student dropout are feelings of isolation, frustration with teaching methods, disconnection, technology issues, student failure to connect with faculty, inadequate contact with students by faculty, lack of student support, lack of clarity with teaching methods, lack of instructor participation, and lack of social interaction. (p. 5)

In addition, student learning concerns are connected to their interactions with faculty (Lehman & Conceição, 2014). Lehman and Conceição (2014) noted, "Students' rate of contact with faculty as more important than contact with other students" (p. 6). Student contact with faculty can be described as "proactive" with instructors either taking the initiative to contact students or being reactive and responding to student-initiated communication (Lehman & Conceição, 2014; Gibbs & Simpson, 2004). Teacher presence and significant interaction between student and instructor continue to have a broad scope of potentially positive and negative effects on student success (Lehman & Conceição, 2014; Moore & Kearsley, 2012).

An examination of the literature shows a vacuum exists in the scholarship linking student success in online courses to secondary foundations teacher preparation courses. While a wealth of data can be found showing student needs when enrolled in online courses, there is a lack of attention to student success when explicitly looking at secondary teacher education. Student success may be attributed to any of the following: lack of student focus, teacher preparation, student involvement as part of the course environment, or lack of technology student (Lehman & Conceição, 2014). Oldale and Knightley (2018) investigated student feelings of disconnect in online courses and described how an instructor's use of a range of technology could lead to a "depersonalizing experience" in online education. Instructors need to utilize synchronous and asynchronous learning expectations to help students persevere through online coursework. Slagter van Tryon and Bishop (2009) explained that "ideas of social connectedness are relevant" as well as a belief that highlights the lack of teacher presence hindering things such as recognition of facial cues, which are more noticeably acknowledged in a F2F interaction. They continued, "it is not possible to have intimate conversations via chat boxes or through the use of microphones in online classes" (pp. 227-228). Social interactions progress students' learning and growth through socialization and connectedness with the instructor, creating learning development.

With this previous information in mind, there is a need to identify student success rates when enrolled in online courses, most importantly teacher education courses, when compared to face-to face course modality when considering the same course offered to students. These comparisons will help programs continue to evaluate how course modality may drive student success, leading to potential program development changes as well as course instructor training

focusing on online pedogeological teaching strategies to aid student success when enrolled in online courses.

Purpose Statement

This study examined student success when enrolled in an initial teacher education course online (distance learning) compared to a face-to-face (traditional) course. Student success was defined as the number of students passing the course with a grade of "C or better" as well as the number of students dropping out of the course (Midwestern University, 2020). As mentioned previously, this study identified barriers hindering student success when enrolled in an online version of the same teacher education foundational course offered in a traditional F2F modality. Through this research, the hope was to uncover common trends in the F2F and online versions of the secondary teacher education course. Also, barriers created in an online learning environment contributing to a lack of student success stemming from transactional distance interactions were identified. By identifying the necessary learning difficulties in the online secondary teacher education course compared to the traditional F2F course, the goal was to implement better strategies for promoting student success to ensure student continuation in the teacher education program. Furthermore, this study aimed to discover the implications for offering foundational teacher education courses in a traditional setting versus online, and the impacts on students completing a teacher education program and entering the teaching workforce.

As previously mentioned, Lehman and Conceição (2014) reinforced learner-instructor communication as the most critical interaction in learning. These interactions were described as "proactive" with instructors (p. 6). Both M. Moore (1989) and Lehman and Conceição (2014) stressed the importance of learner-instructor interactions as eliciting positive learning

experiences leading to academic performance and success. Effective online teaching pedagogy integrates a positive learning community helping to develop interaction, connection, and trust between instructor and the learning (Arbaugh, 2001; Baker, 2010; Freitas et al., 1998; Lehman & Conceição, 2014). This integration strengthens the learner's online experience and encourages cognitive development (Shea et al., 2006). Merging these examples should provide students with the necessary tools to be successful in online courses just as they would be in traditional course settings, provided the student feel integrated, accepted, and that they hold a place in the learning environment (Shea et al., 2006)

This study aimed to bring attention to the implications of offering courses online to students enrolling in an introductory foundations course in secondary teacher education and how successful students are when compared to traditional course settings. This research focused on comparisons between traditional course and online course student success related to social connectedness to student motivations and success in class (Rehn et al., 2016). In addition, this research narrowed in on potential barriers to student success when enrolled in an online version of the teacher education teacher preparation foundational course offered as the initial course in a secondary education teacher preparation program. Together, student barriers to success and the implications to student enrollment success brought awareness to obstacles preventing some students from continuing in a secondary education professional education sequence.

Research Questions

The primary research questions that guided this study included the following:

1. To what extent do student performances differ in the traditional vs. the online teacher foundational education courses?

2. To what extent do student dropout rates differ between traditional vs. online foundational teacher education courses?
3. What are the implications for offering an initial foundational teacher education course through online vs. traditional formats as part of a teacher education program?

Definitions

1. **Autonomy**- The extent to which learners decide on certain factors such as "what to learn, how to learn, or how much to learn" (M. Moore, 1983, p. 157).
2. **Course Structure-** One of the design elements of keeping students motivated in the online course. The structure includes consistency, variety, relevance, and content prioritization as attributes for a successful online learning experience (Lehman & Conceição, 2014, p. 107).
3. **Dialogue-** The extent to which, in any educational program, learners and educators are able to respond to each other. This is determined by the content or subject matter studied, by the educational philosophy of the educator, by the personalities of the educator and learner, and by environmental factors, the most important of which is the medium of communication (M. Moore, 1983, p. 157).
4. **Distance Education-** Teachers and students are in different places for all or most of the time they teach and learn (Moore & Kearsley, 2012).
5. **Face-to-Face (F2F) Classroom Setting-** Considered the traditional learning environment with instructor and student in the same learning space (Lehman & Conceição, 2014, p. 17).

6. **Interaction-**Interaction between distance educators and learners is defined as providing counsel, support, and encouragement to the learner through correspondence or teleconference in a distance learning environment (Moore, 1989).
7. **Learner-Content Interaction-** The interaction between the student (learner) and the subject matter or course topic relayed through information (Moore & Kearsley, 2012).
8. **Learner-Environment Interaction-** This interaction may occur in a traditional classroom or through a distance learning platform that separates instructor and students but creates learning opportunities through the previous explained interaction (Moore & Kearsley, 2012).
9. **Learner-Instructor Interaction-** The interaction between the student (learner) and the instructor during distance education. The interaction can occur by way of asynchronous conversation, instructor feedback, student and instructor question and answer, and chatroom or message board interactions (Moore & Kearsley, 2012).
10. **Learner-Learner Interaction-** The newest interaction to be added to the transactional distance education theoretical framework, this interaction occurs between the learner (student) and other learners (students) in the form of conversation, peer review, message board interaction, or asynchronous dialogue (Moore & Kearsley, 2012).
11. **Online Education**- Provides interaction between the student and the content, the student and other students, and the student and the instructor using various forms of computer-mediated communication, often with a student's physical distance from the university (Martin & Martin, 2015, p. 7).

12. **Online Learning Environment-** A learning space created by an institution and instructor to guide learning that is not face-to-face or does not allow instructor and learner F2F interaction (M. Moore, 1993).
13. **Structure-** The measure of an educational program's responsiveness to the learner's individual needs. It expresses the extent to which educational objectives, teaching strategies, and evaluation methods are prepared for or adapted to the learner's objectives, strategies, and evaluation methods. In a highly structured educational program, the objectives and the methods to be used are determined for the learner and are inflexible (M. Moore, 1983, p. 157).
14. **Transactional Distance** - As distinguished from physical or temporal distance, refers to the psychological or communicative space that separates instructor from learner in the transaction between them, occurring in the structured or planned learning situation (Moore, 1997, p. 1).
15. **Transactional Distance Theory**- A pedagogical experience in which the instructor and the learner are not co-located, or in which the university provides teaching experience face-to-face that are not located on the main campus, but on the sites of extensions or collaboration with other organizations (M. Moore, 2013).

Theoretical Framework

According to Garrison (2017), the educational learning experience has two main focal points:

1. To construct personal meaning through a reconstruction of experience.

2. To refine meaning and confirm understanding collaboratively within a community of leaders.

Based on Garrison's learning experience explanation, learning occurs through a series of interactions between an instructor and learner in a learning environment. When looking to connect this study to a theoretical framework, it is essential first to consider Dewey's 1916 social constructivism theoretical framework because it defines the concept of social experiences that develop within learning interactions (M. Moore, 1983). This theory has been the foundation of many studies in education as a way to design a learning environment and explain the learning process (M. Moore, 1983). However, in relation to this particular study, it was imperative to consider distance education more through a parallel lens and connect with Moore's (1993) theory that distance education is a "transactional process that occurs between the learner and instructor, who are often separated by both time and space but always separated by space" (p. 4). The primary reason to favor Moore's theory rather than Dewey's was the significance of the necessary needs within a distance learning environment that Moore outlines as learning transactions which must exist for successful distance learning to occur, rather than discuss the collaborative learning efforts within the learning experience.

Social constructivism possesses a natural connection with distance learning theory when outlining a theoretical framework focusing on online learning. Due to the necessary belief that learning can occur in any environment with specific attention to interactions between learner and instructor, those interactions must develop through connections and collaboration in a learning environment (Kember, 1989; Moore & Kearsley, 2012, Picciano, 2017). Furthermore, constructivist theories define a learning environment while explaining how collaboration within these environments generates interactions between instructors, students, and peers (Moore &

Kearsley, 2012, Picciano, 2017). This theoretical framework forms a natural existence in education, articulating how the intentional design of learning environments will positively promote interactions among all learning groups (Picciano, 2017).

When considering collaboration in a learning environment, Moore's theory is one of the first recognized explanations of transactional education due to the pedagogical distance theory's development throughout his research (King & Alperstein, 2018; M. Moore, 1989, 1991, 1993, 2007; Moore & Kearsley, 2012). Plus, Moore's original theory framework, first developed in 1973 and expanded in 1977, is considered the philosophical starting point when defining distance education, with most believing the philosophy can be utilized to explain all versions of transactional learning environments (Keegan, 1980). Rooted in research completed by Moore (1989) studying adult and distance education, the framework referenced the need for four learning variables to exist in a learning space. Other research showed, "Dialogue, structure, autonomy, and the existence of transactional distance as a psychological variable must exist in a learning or educational setting" (Saba & Shearer, 2018, p 2-3). Additionally, "The distance, caused in part by the geographic distance, has to be overcome by teachers, learning, and educational organizations if effective, deliberate, planned learning is to occur" (M. Moore, 1991, para. 4).

In Moore's (1993) original model explaining transactional distance education, the transactional distance was defined by three initial factors:

1. dialogue between the instructor and the learner.
2. the flexibility of course structure and design.
3. learner autonomy as explained by the amount of effort the learner experiences during the learning process throughout the timeframe.

These factors create both a psychological and communication space between instructor and learner and signify interaction as multidimensional, including both social and cognitive aspects of communication (M. Moore, 1993; Chen 2001). Thus, the Transactional Distance Learning theory is a reframing or redesign of the older teaching and learning model used to explain online learning in higher education (Moore & Kearsley, 2005, 2012). This new iteration of Moore's preexisting model formulated new concepts concerning online educational settings that are "complex with many learning components, dynamic with teaching and learning changing over time, adaptable to the needs of the learner, self-organized, and emergent as not all learning outcomes can be predetermined by the learner, instructor, or instructional designer" (Saba & Shearer, 2018, p. 105). Moore and Kearsley (2005) redesigned the explanation of transactional distance theory as “the physical separation of the teacher from the learner and creates a communication gap, a psychological space of potential misunderstandings between the instructors and the learners that have to be bridged by special teaching techniques" (p. 224). To explain this more in-depth, Moore (2007) theorized that three distinct interactions allow cognitive learning to occur, which have been the foundation for many online education program developments.

Moore's explanation opens the conversation regarding interactions and allows other researchers to further support this theory and contribute to the existing scholarship. Furthermore, this theory allows for conversation between peers, instructors, and the learning environment to create a learning space conducive to students' stronger motivation and connection within online coursework. These learning interactions create a positive learning space allowing the process of student learning to take place. This theory helps explain the geographic distance effect or

separation has on the interactions between instructors and learners (M. Moore, 2013; Moore & Kearsley, 2012).

Dewey's social constructivism from 1916 created a framework to help explain the concept of social experiences that develop learning interactions within a learning space. In addition, both transactional distance theory and Social Constructivism linked to Kember's model, explaining how the nature of situational learning and how the development of a learning community helps develop online learning success (Kember, 1989; Picciano, 2017). Separately, these theories looked to generalize interaction as a necessary component of learning. When combined, these theories work in harmony to describe the framework linking interaction with social experience to draw a student into a learning community (Picciano, 2017). These theories resulted in an understanding of the need for online learners to participate in a learning experience which promotes active and engaging community learning in an online setting. As a counterpoint, the negative aspects of these research studies further generated an understanding of how adverse factors may impede student success, linking institutionally controlled influences of faculty instruction and institutional support as the main barriers leading to student attrition in online education (Kember, 1989; Lehman & Conceição, 2014).

These models are considered a percentage of the foundation of scholarship linking student attrition to a student's sense of isolation, lack of motivation, the inability to participate in learner interactions, and a student's inability to fit into a developed learner community (Lehman & Conceição, 2014; Picciano, 2017; Rovai, 2002; Wenger & Lave, 1991). Fundamentally, the way a student acclimates oneself to a learning community, either online or face to face, has a significant impact on student success or attrition. Conversely, how an institution actively designed programs to remove barriers for a student's ability, or inability, to become part of a

learning community focuses on online learner success. It is relatively easy to understand students' disconnect from underrepresented groups when aligning this with student access and student success. The inability of higher education to adequately provide learning opportunities designed for the individual learner creates an inequity related to access.

Significance of the Study

Higher Education continues to develop online courses concentrating on students' essential requirements with distance barriers while implementing the classes with instructors to provide adequate higher education programs and coursework. With the steady adoption of online learning as part of mainstream higher education enrollment, Moore's theoretical framework definition can be expanded to include "the interplay between people who are teachers and learners in environments that have the special characteristic of being separate from one another" (Moore & Kearsley, 2012, p. 209). Thus, this study targeted the identification of online learning barriers in teacher education that may prevent student success. Considering the previous information, this study compared student success, barriers to student success in online courses, and program implications while comparing traditional course settings to online courses when enrolled in the same secondary teacher education foundations course. This comparison led to a better understanding of student success and potential reasons for adverse outcomes such as poor grades, dropout, or program incompletion.

Are there barriers the university must break down to promote more student growth and success? Are higher education institutions continuing to provide access to online courses but ignore the student's needs to succeed, creating a chasm between access and success? This study will provide intended answers to these questions and needed scholarship focusing on online

course success in teacher education preparation programs. After examination, the information will provide a more detailed understanding of the research questions previously outlined in this section and will better illustrate how student performance differs when enrolled in traditional F2F courses compared to the online version of a foundational teacher preparation course.

Chapter Summary

Distance Education has been a significant mainstay throughout higher education for more than a century, with online (E-learning) posing as the last iteration, mainly since the turn of the 21st century. Online learning has become an increasingly sought-after option for students who face distance barriers, the inability to attend F2F classes due to work schedules, or personal life challenges (Martin & Martin, 2015). Online education offers students many benefits for individual learning attainment, including flexibility, convenience, often cost efficiency, and a self-directed learning pace (Martin & Martin, 2015). However, students in online courses often feel a sense of isolation, a lack of connectedness to the course content and instructor, and a significant lack of social interaction with both instructor and classmates.

It is essential to develop online education programs that both meet Higher Education's goal of enrollment increases and also create programs that promote the individual college student's personal learning success. Adjusting course design to parallel Moore's framework related to student and teacher interactions without a learning environment will benefit both the instructor and student while generating a more welcoming learning distance learning environment, or as Moore referenced, the interplay of student, instructor, and environment (Moore & Kearsley, 2012). This framework advocates for removing unintended online learning barriers that may prevent student success. It will continue to assist college institutions in

focusing attention on the development of online courses that reduce distance barriers while enhancing the course sections.

Considering the previous information identified throughout the chapter, this study compared student success rates when enrolling in the traditional F2F teacher education course and the online learning modality of the same course. Furthermore, this study looked to identify if significant variance exists between student dropout rates when enrolled in different modalities of the same foundations course in a teacher education program sequence. Are higher education institutions leaving a great divide between access and success in their push for increased enrollment through online course offerings while overlooking students' needs in these learning environments? This study will answer this question and provide needed scholarship focusing on online course success in teacher education preparation programs.

CHAPTER II: REVIEW OF LITERATURE

The following in-depth review of the literature addresses traditional theories of student success when enrolled in online education and distance education. An emerging list of scholarly works using journal and research articles and previous texts generated from EBSCO and ERIC databases aided this research. This information helped frame my decision to compare traditional F2F student success in secondary teacher preparation program courses to student success in those same courses offered online. In reviewing the previous literature, several focus points emerged. These included previously researched trends regarding online education courses, student and teacher interactions in online courses, student success in online courses (distance learning) compared to F2F, and teacher presence in the form of modeling throughout preservice education coursework.

Early Development

When focusing on online education's impact on higher education student success, it is vital to first familiarize oneself with the Sloan Five Pillars of Quality Online Education. Developed in the mid-1990s to develop a leadership community and help define quality for online education, the Sloan Consortium was charged with "creating a framework for institutions to address and create quality online education" (Miller et al., 2014, p. 8). The Five Pillars were created by Frank Mayadas, the foundation's head of the online learning office, to offer guidance for a new professional community charged with providing research-based answers to higher education institutions looking to develop initial online programs (Miller et al., 2014). Furthermore, the pillars offered a uniform understanding to the new community and outlined an agreement in the areas of access cost-effectiveness and institutional commitment, learning

effectiveness, faculty satisfaction, and student satisfaction (Miller et al., 2014; M. Moore, 1983). The Sloan Institute's Five Pillars laid forth a pathway of consistency leading to new program design throughout higher education as well as providing a knowledge base for campus leadership (Miller et al., 2014). This consistency allowed higher education institutions to form a baseline for how adequate and informative online learning would be measured. With the Five Pillars development, online education finally had a singular standard of rigor and delivery, understanding a development focus moving forward.

Trends

A wealth of research focuses on understanding student access to online learning linked to course satisfaction, course construction, student motivations, and how learning interactions contribute to student online learning achievement. Recently, scholarship has provided additional context for understanding distance education theory and how learning interactions between instructor and learner lead to student satisfaction, either F2F or in an online course setting (M. Moore, 1989, 1993, 2007). Attention to both the student needs and the institutional goals for online course design runs parallel in importance when promoting student success (Costello, 2016; Miller et al., 2014). In addition, the importance of program design, proximity to an institution, technology and compatibility needs, and path are explained as the time to completing a certificate or earning a degree (Magda et al., 2020).

Throughout the first part of the 21st century, online learners were predominantly nontraditional students looking to earn degrees or certifications while working with a family. However, over the last decade, it has become more challenging to distinguish between "traditional students" and "nontraditional students" due to changing demographics of students

who might consider online courses as potential programs of interest (Wallis, 2020). A report from Clinefelter and Aslanian (2014) using 1,500 prospective and current online students showed a changing student profile compared to even a decade prior. These researchers found that when looking at current college students enrolled in online classes, almost 40% were younger than 30 years old; 1 in 5 (20%) were younger than 25 years old. The overall landscape of the higher education student body was shifting, and many institutions could not keep up with how the 21st century student looking to enroll had changed from merely a decade ago (Clinefelter & Aslanian, 2014; Lehman & Conceição, 2014).

Online learners were becoming younger, showing a shift in nontraditional students' trends to native students (students who attended higher education institutions as freshmen). The age distribution of students enrolled in a post-secondary education has encountered a paradigm shift towards a younger demographic of students in the United States (Wallis, 2020). According to a report published in Oregon in 2020 by the state of Oregon Employment Department using data from the National Center for Education Statistics (NCES), by 2026, a potential two million students ages 14-25 may be enrolled in postsecondary education courses online, almost doubling the percentage of online students from 8.2% to 16.8% (Wallis, 2020). These trends represent a vast need for higher education to acknowledge the differences in student demographics and develop programs for "nontraditional" students looking for enrollment potential through online courses.

These statistics illustrate the changing landscape of what was traditionally considered the demographic of online education students. The trends demonstrate a movement away from a predominantly nontraditional student (ages 22-50) who was the norm in distance learning programs throughout the first decade of the 21st century due to work, family obligations, and a

lack of time to sit in a series of F2F classes (Lehman & Conceição, 2014). For many students, online education has developed into a preferred option for traditional students who require more access while completing college undergraduate programs (Magda et al., 2020). Trends show that the age demographic of online students is decreasing, and institutions should be cognizant of the need to develop programs empowering students for success (Lehman & Conceição, 2014; Wallis, 2020). As higher education technology continues to progress, the necessity of finding ways to ease burdens on student schedules and allow for a "learning anywhere" environment will be a crucial point of development (Lehman & Conceição, 2014, p. 13). Higher education must keep shifting the mindset to address individual student needs and focus on humanizing the individual student online.

Online Learning Student Needs

As online education programs continue advancing past initial program iterations, course revisions, instructor training, and student learning require adjustments. Students continue gaining a level of comfort communicating through technology with instructors and peers, managing their time for asynchronous coursework and course discussions, and learning that technology can be an asset in their overall learning experience (Wallis, 2020). According to an annual survey by Wiley Education Services (2020), which compiles data on online college students' demands and preferences, students have a strong desire to feel connected to the program and institution they are enrolled in while seeking ways to feel a part of the community. Additionally, students are looking to connect with points of pride and a way to bond with the campus and overall affiliation, with 10% of students surveyed explaining that they sought out campus activities or supported student activities (Magda et al., 2020). This notion of student campus connectedness is

supported by a statistic citing almost 75% of all students surveyed selected to enroll in an online program that was less than 50 miles from their residency, which provided both proximity to campus as well as credentials and program information to potential employers (Magda et al., 2020).

It is crucial to understand the development of a learning environment that strengthens a student's ability to succeed. Creating an environment that reinforces student motivation through a positive online learning environment requires instructors to remain consistent with instruction, provide variation to fight learning redundancy, set clear expectations, and provide relevancy in course content for student needs (Lehman & Conceição, 2014, Kuznekoff et al., 2020; Picciano, 2017). Using methodology and theory to drive coursework is no longer necessary when the content does not personally address student interests (Miller et al., 2014). For students, a sense of connectedness to the course and material is as important as understanding the theory behind content (Costello, 2016, Miller et al., 2014). Ko and Rossen (2017) elaborated on this idea:

> Online learning can be as exasperating for the student as for the instructor, particularly for those taking online courses for the first time. Suddenly thrust into a world in which independent or collaborative learning is heavily stressed, students accustomed to traditional classroom procedures-taking notes during a lecture, answering the occasional question, attending discussions sections, must make unexpected and often jolting adjustments to their study habits. (p. 293)

Ko and Rossen's (2017) research supported instructors' need to design courses that allow student learning to be part of an overall positive learning experience, taking notice of work through communication between learner and instructor to reinforce structure and pedagogy. Garrison et al. (1999) stated this claim twenty years ago as "appropriate cognitive and social presence, and

ultimately, the establishment of a critical community of inquiry is dependent upon the presence of a teacher. This is particularly true if computer conferencing is the primary means of communication for an educational experience" (p. 96). Both explanations highlighted the focus on the instructor's responsibility to create a positive learning community to strengthen student support and motivations. College students today are "comfortable communicating through technology and managing their learning without having to show up at a particular time and place" (Wallis, 2020, p.1). Therefore, it is imperative to recognize student needs when instructors implement an online classroom that motivates and allows students to be active learners while also fostering a sense of attachment and connectivity to the institution (Lehman & Conceição, 2014; Miller et al., 2014).

Barriers to Student Online Success

In 2015, Drew Faust, the president of Harvard University, spoke to the World Economic Forum and claimed three significant forces would show the future of higher Education:

1. The influence of technology.
2. The changing shape of knowledge.
3. The attempt to define the value of education.

Dr. Faust provided insight to explain both the importance of online learning progress while also foreshadowing the potential for barriers to the next iteration of educational progression without proper acknowledgment of the need for training and technological growth in higher education, leading to student success (Faust, 2015; Picciano, 2017). Unintentional barriers to student success can hinder student motivation and learning, while impacting enrollment over time and

setting up failure for a program, instructor, and student (Lehman & Conceição, 2014; Picciano, 2017).

Identified online learning barriers can lead to negative impacts on student success when enrolled in online courses. Scholarship has revealed a myriad of issues that impact student success in online courses, including course design, student motivation, instructor training, online platform usage, student support, relevant technology, course pacing, student online identity, the interaction between instructor and student, as well as student to student interaction, and relevance to a topic (Costello, 2016; Flores, 2016; Lehman & Conceição, 2014; Moore & Kearsley, 2012). While not outwardly designed with intent, these barriers still impact student learning (or lack of) and create an impetus towards failing a course. In addition, barriers may also result in a gap between student and institution, which, over time, may generate an unintended consequence of loss of interest and possible decrease in enrollment, and maybe most importantly, reflection time for completion, if at all, for some students (Brockbank & McGill, 2007; Costello, 2016; Lehman & Conceição, 2014; Moore & Kearsley, 2012). Online learning experts may argue that the importance of creating an online learning environment which promotes student success runs parallel to the importance of developing a flexible environment which can respond to the changing demands of the student and course, to appropriately deliver content and communication while positively designing collaboration within an online setting (Costello, 2016). Creating this style of learning space can all be completed through "intentional personalization within an e-learning program that allows the learner some autonomy in their own learning process while also having support from the instructor and peers through modules and web-based platforms" (McLoughlin & Lee, 2010, p. 12).

Online learning instructional design continues to manifest into a program that aligns more to student need and instructor development, never truly coming to an intersection that may benefit both parties (Brockbank & McGill, 1998; Costello, 2016). Experts who have studied online education from the initial iteration continuing through the 21st century still believe a new online learning system must be realized to optimize student learning and growth (Costello, 2016). Costello (2016) supported this same notion:

> Traditionally, online e-learning environments were originally developed to be contextually driven and influence largely by learning management systems through the use of mere technology. The whole idea of e-learning was to allow students to have a high degree of learner self-direction and personalization within the learning process…These traditional systems are still typically organized around a module or unit of study with a standardized set of resources provided for all students. (p.2)

It is not uncommon for technology development to fall behind user needs. The failure to keep up with pedagogy requirements in the online learning environment yields unnecessary stress on students' success needs and becomes a hindrance at times (Costello, 2016). Students' struggle with technology conflicts with the idea that students choose online learning courses to ease access and self-regulated learning experience that matches personal schedule and time commitment (Lehman & Conceição, 2014; Moore & Kearsley, 2012; Wallis 2020). In addition, technology development helps to address student support needs, eliminating a barrier for students working on completing a degree or certificate. The urgency to progress past lagging technology or web-based modules that are outdated and underperforming will provide a more positive learning environment (Costello, 2016; Ko & Rossen, 2017).

Access to Higher Education Courses

The premise behind access is simple: to provide more attainable opportunities for all students to earn a degree or certification from higher education institutions (Lehman & Conceição, 2014). As King and Alperstein (2018) explained, "If you are not excited about the impact of online education on the nature and shape of higher education, you should be" (p.1). Online education has paved new opportunities for higher education to become more accessible to students, both traditional and nontraditional. The Babson Research Group cited rising tuition, student desire to embrace digital learning, a growing population seeking access to higher education, a growing acceptance and adoption of online learning technology, and academic leaders' commitment to online learning as a leading enrollment management trend, as a series of reasons for promoting online education learning environment for campuses (Allen & Seaman, 2017). Online learning provides an opportunity for student access through "learning anytime, anywhere, and at any pace education" (Lehman & Conceição, 2014, p. 10). This description is the standard for defending online education and was initially part of the creation of the Sloan Five Pillars of Quality Online Education (Miller et al., 2014). Students continue to navigate an increasingly complex personal schedule while finding ways to obtain college credit or degrees. Online education forges a link between access and schedule flexibility for learning, convenience to students, efficiency with time management, connections with otherwise distant entities, cost-effective coursework, and green learning environments (Lehman & Conceição, 2014).

Online education programs seek to construct sequences allowing institutions to enhance access to various enrollment opportunities. Traditionally, these courses come at a lower cost to students, resulting in a calculated need for distance learning access and availability (House-Peters et al., 2019; Moore & Kearsley, 2012). As mentioned previously, several studies provided

additional context for understanding the philosophy behind distance education and program development, along with how the influence of distance education aligns with current student needs when selecting and succeeding in a distance education program (M. Moore, 2007; Moore & Kearsley. 2012, Magda et al., 2020; Wallis, 2020). As this trend advances, students from all demographics and gender will not only seek online education programs built for their specific needs but wills also show continued growth and success in learning. Thus, higher education institutions must pursue online education programs as a way to create access for students. To aid in this instructional design, a continuation of research must seek to explain the benefits of learning online while also working to remove negative barriers to student success. These focal points will in turn generate successful online education programs focusing on positive learning experiences for students. (Allen & Seamen, 2014; Henning, 2012; Sheridan & Kelly, 2010).

Instructor Needs

Turning attention specifically to course design in an online format, students desire personalized learning experiences that can ease unintended learning barriers caused by distance education (Lehman & Conceição, 2014). As course instructors become more of a facilitator of knowledge, they must construct active learning classrooms, with opportunities to learn via several learning strategies and asynchronous outlets that provide students with a sense of personal attention (Lehman & Conceição, 2014; Kuznekoff et al., 2020). Professional development for instructors may help guide them in handling learning environment creation, dialogue, course structure, and skill deficiencies that will enable a proactive response in the progression toward a barrier-free learning environment (Lehman & Conceição, 2014; Kuznekoff et al., 2020). Institutions must prioritize instructors' need for further development and ensure

value when training faculty to evolve their learning environment into one conducive to student needs in the 21st century (Costello, 2016; Lehman & Conceição, 2014; Kuznekoff et al., 2020).

In addition, program development over the last decade has found that the best way for instructors to learn proper techniques to instruct online is to experience online education from the student perspective. In a study completed by Ray in 2009 and recreated by Guan & Stanford in 2014, 60-64% of faculty who taught online courses wanted additional online education professional development. These instructors cited the lack of connection to students and inadequate understanding of the technology necessary for implementing best practices as the reason (Guan & Stanford, 2016; Ray, 2009). However, these studies revealed that most universities did not enforce this notion, and in truth, even considered this a professional development option at many institutions. Conversely, thriving programs developed at DePaul University (2009), the University of Central Florida (2009), and the University of Louisiana Lafayette (2014) all required instructors to participate online in the learning platform as a student. The focus of these programs was to allow instructors to learn how to navigate the course as a student and use various system communication methods to develop further empathy for the students who have enrolled in their classes (Guan & Stanford, 2016; Ray, 2009). The programs mentioned are a mere fraction of the possible examples of how genuine professional development opportunities focusing on student needs help faculty identify the origin of a significant online inequity and continue developing a conducive learning environment. Through awareness of learner needs, faculty may begin to understand student positionality, personal skill development, and extent to which overt text-based communication could hinder learners, leading to non-completion and withdrawal from the institution (Campbell & Storo, 1996; Garrison, 2017; Lehman & Conceição, 2014).

Faculty who teach online courses must clearly understand the course goals and the needs of students enrolled. The educational experience has two main focal points: (a) to construct personal meaning through a reconstruction of experience, and (b) refine meaning and confirm understanding collaboratively within a community of leaders (Garrison, 2017). The course instructor must ensure this is completed for all students by developing an intentional medium for learning and positive communication (Garrison, 2017; Lehman & Conceição, 2014; Moore & Kearsley, 2012). An instructor's role is to shape a learning environment that is pedagogically linked with the course and defines expectations through several communication mediums. Much like when enrolled in a traditional F2F course, new technology can bring forth sustainable cognitive and social conditions, but cultural awareness and equitable learning potential are still the instructor's responsibility (Garrison, 2017; King & Alperstein, 2018). To reference discoveries from both Moore and Dewey, education is fundamentally interactive and must contain a transactional process for each student's learning environment (M. Moore, 1993; Moore & Kearsley, 2012; Picciano, 2017). However, how these learning transactions are facilitated for students through acknowledging individual learning, humanizing students, and developing equity within a classroom are primary concerns of the online instructor.

Transactional Distance Education Theory

According to Moore (1993), distance education is a transactional process between the learning and instructor, often separated by time but always separated by space. Moore (1991) defined this as "the distance of understanding and perceptions, caused in part by the geographic distance that has to be overcome by teachers, learners, and educational organizations if effective, deliberate, planned learning is to occur" (para. 4). Moore's theory is one of the most recognized

and highly influential transactional distance theories (TDT) due to the development of the pedagogical distance theory throughout his research (M. Moore, 1972, 1980, 1991, 1993, 2007). Moreover, the theory set the bar for understanding distance education, with most believing the theory can be distinguished in all transactional learning environments (Keegan, 1980).

In Moore's (1972) original model explaining TDT, transactional distance is framed by three initial factors:

1. Dialogue between the instructor and the learner.
2. The flexibility of course structure and design.
3. Learner autonomy as explained by the amount of effort the learner experiences during the learning process throughout the timeframe.

In addition, Moore (1989) outlined three types of interaction that exist to provide instruction and learning in an online course. The types of interaction explained in TDT are (a) learner-content, (b) learner-learner, and (c) learner-instructor (M. Moore, 1989; Moore & Kearsley, 2005). When combined, these factors create a psychological and communication space between instructor and learner and center on interaction as multidimensional, including social and cognitive aspects of communication (M. Moore, 1993; Chen 2001).

Learner-content interaction is defined as the need for the student to engage with course materials and content, developing a sense of perspective and understanding (M. Moore, 1989; Moore & Kearsley, 2005). The learning is primarily student self-directed, and content is at the forefront of learning. Initially, early iterations of online coursework in higher education were derived from this learning experience (Rhode, 2009). Learner-learner interactions, also identified as student-to-student or peer learning, are newer phenomena in online education and highlight

students' ability to learn and grasp course information from each other (Berge, 1999). This approach to learning sparks student motivation and satisfaction in learning, while also contributing to the course material through student-to-student engagement (Berge, 1999). Moore (1989) explained that learning interaction develops peer learning and adds additional student motivations to online courses. Finally, learner-instructor interactions focus on instructional teaching strategies available through online course platforms and engagement methods (Elbaum et al., 2002; Hosler & Arend, 2012). Learner-instructor interaction and engagement are critical to the coursework's online learning environment and student success (Baghdadi, 2011).

However, over the last two decades, a fourth interaction has been identified as a significant part of learning transactions in a distance education setting. Learner-environment has been recognized as a necessary component to any distance education setting and must be accounted for to reinforce student learning and success (Moore & Kearsley, 2012). This interaction may occur in a traditional classroom or through a distance learning platform that separates instructors and students, creating learning opportunities through distance learning interactions (Moore & Kearsley, 2012). As described, students will have more success if they feel a sense of identity and have a feeling of autonomy in their learning process that allows them to feel a connectedness to the course and instructor (Moore & Kearsley, 2012). This connectedness is what will drive student success in a transactional distance learning environment.

More recently, research has focused on learner-instructor interactions and has examined the disadvantages of online courses due to instructor engagement. These identified disadvantages in learning communication brought attention to the inability to communicate with verbal and non-verbal communication and stressed the disadvantage of online learning compared to peers in

F2F learning courses (Arbaugh, 2001; Baker, 2010; Freitas et al., 1998). Communication between learner-instructor must be intentional and not solely rely on online course format, text communication, and content-only delivery. Distinguishing the fundamental learning process in an education setting will help navigate scholarship outlining student success in an online setting compared to students enrolled in the same course as a F2F setting. By incorporating Moore's interaction concepts, instructors can include additional supports that will help promote students' success by identifying barriers that negatively influence student learning (Lehman & Conceição, 2014; Moore & Kearsley, 2005).

Proponents of Transactional Distance Theory

Almost as soon as Moore created TDT, the theory was disputed, reorganized, and reframed. Many proponents did not view Moore's theory as a theoretical framework and felt it lacked empirical research and did not construct validity based on several studies conducted on TDT (Bischoff et al., 1996; Bunker et al., 1996; Saba & Shearer, 1994). Bischoff et al. (1996) claimed that Moore's statement looked at different interpretations and required more testing of this theory with practice. Similarly, some considered Moore's connection to Dewey's definition of the transaction to be misunderstood, or at least misinterpreted, which resulted in the inability to complete empirical verification (Giossos et al., 2009). To defend this argument, Giossos and his colleagues contended that Moore's interpretation of Dewey's theory can never be placed within a framework and will not always be predictive in nature with transactional distance when considering the three tenants of Moore's TDT. Moore (1993) himself claimed, "A psychological and communication space to be crossed, a space of potential misunderstanding between the

inputs of instructor and those of the learner" (p. 22). This notion helped solidify the theory and closed gaps that may have been used for argument through misunderstanding.

Other proponents disputed that TDT had already defined the interaction practice as simply a function of "dialogue and structure" (Saba & Shearer, 1994, p. 46). Gorski & Caspi (2005) unpacked the theory and claimed it focused solely on interpersonal relationships but failed to define the instructor and learner's relationship, as indicated in the original definition. Likewise, Tallent-Runnells et al. (2006) explained that research should be driven by creating theoretical foundations focusing on online education. They suggested that these theories center on communication, social interactions, and student motivations for success. Finally, some asserted that Moore's theory lacked rigor and is hard to place in online education because of the need for more design and conceptual theory building (Simonson, 2006).

Furthermore, Garrison (2017) also felt Moore's work lacked a model that would show the relationship between the three components of this theory: "dialogue, structure, and learner autonomy to help develop a stronger theoretical framework" (p. 21). Moore (2007) himself claimed the implication in his theory would continue meeting the needs of teaching pedagogy outside of the traditional classroom setting and that transactional theory can be used to explain many different phenomena in online education. In response, Moore clarified that his theory of transactional distance allowed for "a generation of an almost infinite number of hypotheses for research into the interactions between course structures, dialogue between teachers and learner, and the student's propensity to exercise control over the learning process (p. 101).

Online education stresses the importance of interaction for student success in higher education (Baker, 2010; Freitas et al., 1998). However, effectively teaching online education courses has come under fire in recent years due to the lack of student satisfaction related to

personalized learning environments in online learning (Bangert, 2008; Bush et al., 2010; Costello, 2016; Ladyshewsky, 2013; Shea et al., 2003). One of the essential components of online education, interaction, is a critical factor in student success throughout distance learning (M. Moore, 1993). Along these lines, the notion arises that "intersectionality of satisfaction in student-centered learning" links with the autonomy of the interactions of an instructor as both an educator and a facilitator within a distance learning course" (Brooks & Normore, 2015; Cazden, 2011; Moore & Kersley, 2012; M. Moore, 2013). As explained throughout research, online learning interaction must be purposeful and incorporated into the online learning environment to aid student satisfaction and success (Arbaugh et al., 2008; Bailie, 2011; Garrison & Cleveland-Innes, 2005).

An argument against TDT was designed through a quantitative study of more than 600 students at Texas Tech University. The study was designed to investigate student success. Perceptions of positive communication and collaboration concerning physical proximity and instructor presence provided details explaining students' ability to self-regulate their learning and autonomy through course design but had little effect connecting information on distance learning (Barnard et al., 2008). In addition, the researchers contended that the study found little correlation that physical distance alone has a strong influence on student satisfaction and completion in a program or course sequence (Barnard et al., 2008). The study was more dependent on student autonomy, interaction with the course material, and the technology platform. The research provided little information about distance learning and positive perceptions of online course success related to communication. Finally, researchers involved supported the need to focus on dialogue and communication for student success rather than traditional distance learning perceptions (Barnard et al., 2008).

A second study analyzing the validity of Moore's TDT was completed to develop an operational model to explain Moore's three learning constructs (dialogue, structure, and learner autonomy). Huang et al. (2015) implemented a survey utilizing transactional distance to explore the perception of learning environments at the university. This survey explored student experiences and feelings related to interactions and communication in an online course. The survey was designed to follow Moore's theory of transactional distance, concentrating on distance, dialogue, structure, and learner autonomy variables (Huang et al., 2015). This model revealed the viability of transactional learning, with distance education being more a construction of a learning environment and not an actual theory on transactional learning. Thus, this model helped articulate proponents of Moore's transactional learning model to identify the lack of philosophical communication theories many had connected to Moore (Huang et al., 2015).

Additionally, previous scholarship by Garrison (2000), Gorski & Capsi (2005), and Bischoff et al. (1996) pinpointed the inability to test for validity and reliance throughout Moore's theory and constructs of learning. All mentioned that Moore's theory was just a product of learning and not a measure of reliability. Huang et al. (2015) specifically looked at a way to explain Moore's TDT model to measure the validity of dialogue, structure, and learner autonomy in web-based learning environments using quantitative assessments.

Dialogue and Structure

Online education has brought a shift in teaching pedagogy. The former instruction was based on knowledge and communication, linking with constructivist theory and understanding (M. Moore, 2016). With this in mind, two of the three constructs of Moore's TDT focus on

criticism and new theory grounded in the research. Moore cited dialogue and structure as crucial components of all three tenets of learning, which include (a) learner-content, (b) learner-learner, and (c) learner-instructor (M. Moore, 1989; Moore & Kearsley, 2005). Moore (1993) explained in detail the definition of dialogue as the following:

> [Dialogue is] developed by the teacher and learners in the course of positive interactions that occurs when one gives instruction and the others respond. Each party in the dialogue is a respectful and active listener; each is a contributor and builds on the contributions of the other party or parties. (p. 24)

Furthermore, Moore (1993) explained that the term structure "expresses the rigidity or flexibility of the program's educational objectives, teaching strategies, and evaluation methods. It describes the extent to which an educational program can accommodate or be responsive to each learner's individual needs" (p.26). The emphasis on connecting structure and dialogue in TDT to emphasize course structure is imperative because learner needs require communication standards designed by instructors to motivate all students, many of whom may be learning at different times or intervals (M. Moore, 2007). In addition, the necessary professional development for instructors can facilitate course interactions between student and instructor and peer interactions, leading to a more inclusive learning environment (M. Moore, 2013; Moore & Kearsley, 2012). In alignment with the focus on dialogue, Doolittle (2001) stressed the importance of everyday dialogue, allowing for meaningful conversations that pique student interest and knowledge development. There is a natural connection to asynchronous coursework to create daily contact or allow students to learn at their own pace and speed to become more acclimated to content and teacher style. These connections help ensure learner-learner and learner-instructor pedagogy successes in an online learning environment (Doolittle, 2001; Lehman & Conceição, 2014).

Walker and Lambert (1995) explained that "learning is a shared inquiry, and that learning occurs when students generate knowledge from within, not when they receive information from outside." While dialogue and structure are necessities in TDT, Moore (2016) provided further explanation:

> One might say the paradigm shift has been from a pedagogy marked by a high degree of structure, relatively low dialogue, and limited learner autonomy to one in which educators are obsessed with dialogue and preoccupied with learning autonomy while paying far less attention than their predecessors to the systematic management of the structure of the learning environment. (p. 131-132)

Student needs in online education are shifting the focus of dialogue usage in online text and course writing. Students should understand how these changes in pedagogy will impact course success. Moore (2016) goes into great detail to discuss the need to "humanize" the teaching pedagogy and structure the learning community to establish a supportive climate. Concerns for course structure and dialogue help students grasp the content and learning systems. They become part of the learning environment, fundamentally being influenced by all three types of learner interactions.

Teacher Presence in Online Teacher Education

Distance education continues to demonstrate boundless potential for college access to students interested in teacher education programs by widening the scope of available classes and educating with new innovative pedagogy technology. These programs would create additional opportunities to impact the nationwide teacher shortage, adding to the desperately declining work force in schools (Bryant & Bates, 2015). However, instructors' distance education learning

modalities can result in impersonal learning environments, create confusion for students, lack personal attention, and ultimately generate feelings of isolation, leading to the potential loss of candidates in teacher education (Bryant & Bates, 2015).

Minimal scholarship investigates connections between teacher presence or interactions within an online learning space, secondary teacher preparation programs, and student success. However, many shortcomings seem to exist among research that looks explicitly at teacher education or teacher preparation and student satisfaction or success in online learning classrooms. Two research studies provided a small sample size to better understand student satisfaction and teacher education online learning programs. St. Pierre and Olsen (1991) found that conversations between instructor and student were among the five factors contributing to student satisfaction within online course development. These interactions have been proven to heighten learning while motivating students towards success in their personal connections (St. Pierre & Olsen, 1991). In addition, Benard et al. (2004) completed a meta-analysis of 232 studies looking to investigate how asynchronous communication between teacher and instructor had a positive effect on student satisfaction and helped students feel more connected to the course and instructor.

A significant teaching presence in an online learning community enhances interaction between instructor and learning, which helps develop the learner's online presence and encourages cognitive development (Shea et al., 2006). Regarding student learning, Lehman and Conceição (2014) reinforced the two types of student learner-to-instructor contact as more important than contact with other students and that these interactions are described as "proactive" (p. 6). Both Moore (1989) and Lehman and Conceição (2014) stressed the importance of learner-instructor interactions as eliciting positive learning experiences, thus leading to academic

performance and success. Effective online teaching pedagogy integrates a strong teacher presence throughout an online learning community, which fosters interaction, connection, and trust between instructor and learner. Without these learning connections, barriers may strain learning and negatively impact student understanding, in turn becoming detrimental to educational outcomes (Lehman and Conceição, 2014; Shea et al., 2006). As mentioned previously, personalizing the learning environment can predict learner needs by understanding and focusing on student motivations leading to online course success. These learner needs should be integrated into the course development throughout the semester (Lehman and Conceição, 2014). Such integration strengthens the learner's online presence and encourages cognitive development (Shea et al., 2006).

An instructor's actions to create a strong presence strengthen communication with students and significantly motivate student success. Jukes, McCain, and Crockett's 2010 study outlined the five essential student influences, or skills, needed to succeed in an online course: solution, information, collaboration, creativity, and media. Furthermore, their research described how online instructor communication will often be dependent on the previous experiences of teaching online, the availability of teaching platforms and technology, and the willingness to improve intellectual growth concerning distance learning teaching methods and student feedback (Martin & Martin, 2015). When combined, these influences assist students enrolled in an online course understand and navigate a learning platform that feels more inclusive and connected to retain students and continue online coursework. Moreover, these influences engage communication and allow students to converse via text and asynchronous communication (Martin & Martin, 2015). An asynchronous course platform allows students to interact with

classroom learning and activities at a time of their choosing, fostering an inclusive learning environment facilitated by an instructor (Martin & Martin, 2015).

Some argue that new online technology creation pertaining to online distance education allows teaching methodology and pedagogy training to become more innovative and utilize larger spaces for learner communication (Forsey et al., 2013). Identifying program design flaws highlighted by the need to improve instructors' training will help reinforce the rigor and pedagogy necessary to influence student learning. However, as teacher education programs continue to expand online, identifying instructor professional development needs will further aid in the development of a more robust set of teaching strategies that should improve distance learning products. In the drive to connect teacher presence and student success to Moore's TDT, the theory not only works to identify online teaching pedagogy but urges researchers to seek new scholarship utilizing the theory for unlimited potential. Moore (2018) detailed this in the following statement:

> Transactional distance theory provides the broad framework of the pedagogy of distance education. It allows the construction of an almost infinite number of hypotheses for research into the interactions between course structure, dialog between teachers and learners, and the student's propensity to exercise control of the learning process. (p.8)

By making this claim, Moore essentially invited critics to look at the theory and use his interaction explanations as needed for future research studies. Moore's research justified the need for learning interactions to occur and opened the door for other researchers to dig deeper to examine this theory and contribute to the existing scholarship. TDT allows for the conversation concerning interactions between peers, instructors, and the learning environment to expand the

learning space conducive to students developing stronger motivation and a feeling of connection within online coursework (Moore & Kearsley, 2012).

Teaching strategies must shift in mindset in regard to how instructors provide content to learners, adjusting for time, space, availability, lack of classroom interaction, and student motivations (Costello, 2016; Lehman & Conceição, 2014). Failure to develop effective course content and instructional design will always be an obstacle for online education, as instructors need to seek professional development and learn how to navigate a new teaching platform, including not meeting students in person (Guan & Stanford, 2016; Martin & Martin, 2015). The ability to adjust teaching strategies to develop intentional student learning and understand appropriate teaching methods falls on the instructor (Guan & Stanford, 2016). Furthermore, utilizing online teaching pedagogy techniques designed to promote instructor-learner interactions elicits a high degree of instructor activity and availability, positively influencing student interest and learning success (Lehman & Conceição, 2014).

The notion of the learning classroom should be reconsidered. A mental paradigm shift that eliminates the preconceived notion of the traditional classroom or lecture hall setting must evolve to a learning environment in which student and instructor participation merge through collaborative communication (Lehman & Conceição, 2014; Miller et al., 2014). Supporters of online education and online instructional design offer many teaching strategies to address online learning barriers created by both the instructor and learner distance. Most stress instructor engagement and development of an online presence through instructor lead contact, text conversations, and asynchronous messaging (Lehman & Conceição, 2014). Additionally, research has shown online learning is heightened by lively and frequent online forum discussions started with a "get to know you" type of interaction intended to draw out instructor and learner

personalities as well as develop a bond through connection (Miller et al., 2014). Regardless of the learning platform, an instructor needs to be active, visible, and engaged while providing instructional material with an intentional focus on the student interactions throughout the course (Miller et al., 2014).

The instructor must create a learning environment focused on interaction, develop various learning techniques, keep up with relevant content and technology, and rely on content to lead learning (Lehman & Conceição, 2014). To support this perception further, Holmberg (1995) stressed the importance of a personal connection between the teacher and learner as an essential part of online learning. Both Holmberg (1995) and Saba (2016) outlined "friendly conversation" as a critical factor in student success. While effective online education includes these influences, a teacher's presence connects the learning environment and student success due to an engaging and positive presence, a clear set of communication expectations for themselves and the student in the course, and positive integrated interactions. Instructors have long designed lesson plans to include student interaction and communication through classroom learning; however, online learning environments require interaction between the learner and the instructor to develop a thriving environment (Moore & Kearsley, 2012).

Teachers attempting to model the tone of course interaction might be one of the most substantial factors when considering dialogue delivery but can be very difficult to define (M. Moore, 2016). Often, online learners question their online identity and how their participation is received when enrolled in a course. To help with this identity fear, the learner must be given opportunities to showcase their identity throughout the course, encouraged through an instructor’s intentional instructional design. When enrolled in an introductory course, this design must be a foundational practice intended to spark interest in a profession such as education

(Lowenthal & Dennen, 2017). For example, students enrolled in online teacher education courses working to strengthen their online course identity will also need to develop a teacher identity concurrently, something dialogue and social presence may directly connect together (Lowenthal & Dennen, 2017). Student identity distinctly joins communication and dialogue, but as a "fluid construct" in social constructivism, instructors and learners must be acutely tuned into the development of each (Lowenthal & Dennen, 2017).

Chapter Summary

This literature review was completed to understand online education and identify how learning barriers may negatively influence student success in online teacher education courses. This review highlighted previous scholarship outlining the theories and conceptual framework pertaining to the different components of TDT. As Lehman and Conceição (2014) detailed, technology is not the problem anymore, but what educators do with it is the crux of the issue. Scholarship has provided additional context for understanding TDT and how learning interactions between instructor and learner lead to student satisfaction (M. Moore, 1989, 1993, 2003, 2007). Furthermore, several researchers have looked at transaction distance learning and attempted to explain online interactions in a web-based learning environment (Gorsky & Caspi, 2005; M. Moore, 1989, 1993, 2007). Martin and Martin (2015) supported Moore's theory by explaining how online instruction must contain learning interaction between the student and the content, the student and other students, and the student and the instructor, all while using various forms of computer-mediated communication. The interaction between learner-instructor must occur as part of a natural learning progression utilizing collaboration to create a personal connection within an online course while also supporting student need to identify barriers that

may negatively impact learning (Costello, 2016; M. Moore, 1989, 1993, 2003, 2007; Moore & Kearsley, 2012). Course instructors must be cognizant of Moore's explained "learner-instructor interactions" to ensure instructional strategies that will promote student engagement (Elbaum et al., 2002; M. Moore, 2007; Moore & Kearsley, 2012).

Additionally, higher education institutions must be aware of unintentional barriers that may affect student learning while designing the next iteration of online courses. Recognition of the need to create a positive learning environment, utilize consistent course structure and dialogue, promote student skill development, foster a personal online identity, and develop positive interactions between instructors is critical when motivating student toward success. Proper acknowledgment and understanding of student learning requirements, as well as instructor training and technological growth are necessary focal points that will lead to student success (Picciano, 2017). A more substantial push for specialized instructional design is needed to concentrate on student-centered learning that will bolster student motivation, ultimately leading to more impressive student outcomes (Miller et al., 2014).

Unintentional roadblocks to student success can hinder student motivation and learning, while also impacting enrollment over time, thus setting up failure for a program, instructor, and student (Lehman & Conceição, 2014; Picciano, 2017). Therefore, online learning environments must continue to provide flexibility to allow students to work at their own pace, plus incorporate asynchronous methods of instruction to create connections among the course, instructor, and university. These connections will allow students to develop pride in their program, feel connected to the institution, and work with the instructor and peers to achieve course success.

CHAPTER III: METHODOLOGY

The purpose of this study was to examine and compare the success rates of students who were enrolled in an online learning version of an introductory foundational course in the teacher education program sequence against those who enrolled in the face-to-face learning sections. This comparison will help reveal the online delivery modality's efficacy to ensure student success and possibly student retention in the teacher education program. In this chapter, the research questions will be reaffirmed. In addition, the research methodology that was employed in this study will be outlined. Specifically, the information provided in this chapter will explain the research design, data sources, ethical procedures, the data collection, and analysis process used to complete this study.

Additionally, the focus of this study was to identify the success rates of students who were enrolled in the initial teacher education course in a professional education sequence in an online learning setting compared to a F2F learning setting. This comparison will help identify learning barriers that may increase gaps affecting student success rates related to course learning modality. A quantitative study methodology was used to determine related patterns of success, failure, and student withdrawal rates from courses over a two-year/six-semester timeframe that allowed for a broad timeframe of student success rate understanding. With this study, quantitative research data was secured through institutional data collection systems using pre-existing data information widely available for program use.

Research Questions

1. To what extent do student performances differ in the traditional vs. the online teacher foundational education course?

2. To what extent do student dropout rates differ between traditional vs. online foundational teacher education courses?

3. What are the implications for offering an initial foundational teacher education course through online vs. traditional formats as part of a teacher education program?

Research Design

To strengthen the effectiveness of a quantitative research study, it is essential to consider which approach to research would best provide the desired information to the previously described research questions. When undertaking quantitative research, three common approaches are options when completing a research design; experimental, quasi-experimental, and ex-post factor (Black, 1999; Vogt, 2007). While determining which research method to choose, the experimental design was not a viable option due to the inability to directly assign the student enrollment choice of learning modality between F2F and the online version (Black, 1999). In addition, a quasi-experimental design proved to be an ineffective option for this study due to the inability to directly manipulate students' course modality enrollment options (Black, 1999). The third consideration, ex-post factor design, or causal comparative was the clear choice for this study due to the nonrandomizing of groups and the previously established course enrollment through student decision and course time and date offering (Black, 1999; Schenker & Rumrill, 2004). Causal-comparative designs are a primary consideration when research data characteristics and variables or a research design cannot be manipulated (Black, 1999). Due to the foundational course learning modality offered in two distinct options for students, the inability to manipulate the variable was consistent with an ex-post facto, or causal-comparative, research design (Black, 1999).

Causal-comparative research designs explore differences between or among pre-existing groups and are considered one of the most common forms of research designs in the field of education (Mertens, 2014; Schenker & Rumrill, 2004). A quantitative study methodology was conducted to determine related patterns of success, failures, and student withdrawal rates when investigating pre-existing data from an introductory course in the teacher education program sequence. Additionally, causal-comparative design is a practical approach to studying previously occurring phenomena (Schenker & Rumrill, 2004). This initial course, offered both in F2F and online modalities, is the first in a five-course professional education sequence by secondary majors at a university in the Midwest. The use of a causal-comparative design thus allowed for comparisons between variables when focusing attention on two different course modalities within the same teacher preparation course sequence (Brewer & Kubn, 2012; Mertens, 2014).

When designing a quantitative study that will engage the audience in the scholarship connecting the study's evidence, Bolker (1998) explains that research "requires that your mind engages with the material, ask it questions, and act upon it in such a way as to change the material-and, incidentally, yourself" (p.16). With this perception in mind, the research design for this topic looked at the practice of instructing students when comparing F2F teaching modalities in contrast to online or distance learning modalities. The design compared pre-existing data related to student success rates, dropout rates, and student withdrawal rates in two instruction modalities of a foundational secondary teacher preparation course sequence. Creswell (2003) stressed the following for those designing a study using quantitative research methodology:

> Quantitative research uses multiple methods that are interactive and humanistic. The methods of data collection are growing, and they increasingly involve active participation by participants and sensitivity to the participants of the study. Quantitative researchers

> look for the involvement of their participants in the data collection and seek to build rapport and credibility with the individuals in the study. They do not disturb the site any more than is necessary. (p. 181)

In alignment with Creswell's explanation of quantitative research, this research design compared student success rates in two separate learning environments. In addition, the research uncovered instructional implications to consider when working with students enrolled in online versus F2F course formats.

During this research design study, pre-existing data was collected each semester by the higher education institutional data collection system, COGNOS, operated by the university research and planning office, and grants program approval for data retrieval. With the data for this research study compiled through COGNOS, the information cannot be manipulated in any fashion as this would impact data used across the five individual colleges at the institution. The use of a casual-comparative design study allowed for an exploration of student enrollment differences when comparing F2F student enrollment with online student enrollment in the same foundational course offered in the College of Education at Midwestern University.

This research study centered on student outcomes in an introductory foundational teacher education course taught online versus traditional formats at one mid-sized university in Illinois. Using this research design enabled the researcher to comprehend further student learning, student success, and implications for a department when considering student course offerings, paying particular attention to the modality of instruction and delivery. In addition, the information provided will help determine how to create more concise programmatic course sequences to better instruct preservice students by offering best practices and successful student learning outcomes. This chapter will explain the research methodology and design, describe the course

program sequence utilized by the institution, lay out the population and sample size, outline the data collected and process, and address the ethical concerns for completing the research.

Data Sources

The secondary teacher preparation programs at this Midwestern University are separated by content area and contained in one of the five different colleges across the campus: College of Applied Science and Technology, College of Arts and Sciences, College of Business, College of Education, and College of Fine Arts. Together, these secondary programs make up approximately 40% of all teacher education students at the university. As the current programs across campus are constructed, each area designs individual course sequences and advises content-specific students when to enroll in the professional education sequence according to their programmatic plan of study. In addition, most secondary education teacher preparation programs require students to enroll in an introductory foundations teacher preparation course.

Originating in the College of Education through the Teaching and Learning Department, this study focused on the initial course in the professional educator sequence. For anonymity, the course titles have been changed using synonyms in place of the real course names and identifiers. This study zoned in on the course that will be referred to as Teaching Course #1, an introductory course in the teacher education program. This class must be completed and passed with a C or better grade to progress. The course sequence is comprised of the following: Foundations Teaching Course #1- Professionalism in Secondary Schools, Teaching Course #2 – Secondary Schools Principles and Practices, Teaching Course #3- Literacies & Technology Integration Across Secondary Curriculum, Educational Psychology Course #1- Introduction ARY Psychology to Education Covering Human Learning in a School Setting, and Educational

Foundations #1-Social Foundations of Education. When combined, this sequence provides the scholarship, theory, foundation, and practice for students majoring in secondary education teacher preparation.

Paraphrasing additional information in connection to the syllabus for Teacher Education Course #1, student requirements to complete the course align with the topics related to (a) The profession of teaching, and (b) Teacher professionalism. In addition, this course examines social, economic, and political forces that influence secondary schools' development, school organization, and process. Furthermore, this course develops students' base knowledge of contemporary issues in education related to the school curriculum, school environment, and organization through exposure to these topics while also highlighting a path of study in secondary education.

Additionally, Teaching Course #1 requires students to complete their first clinical observation with students in the local school district, community, and organization settings. Students must complete 20 clinical hours working with faculty, students, and staff in an educational setting throughout the state of Illinois and complete several assignments in conjunction with observation and field notes. This experience aligns with the college’s secondary teacher education program sequence as it allows for exposure to school settings, as well as working with teachers and students in an academic setting. Students merge their coursework learning with field experiences throughout these clinical observations, further synthesizing the demonstration of key concepts in education.

Data Collection

This study required the use of pre-existing data on student success, withdrawal, and dropout rates for the initial Teaching Course #1. To obtain this data, authorization to the campus-wide data collection system, Campus Solutions, along with a data collection program called COGNOS was necessary. Information on course grades, enrollment, and student outcomes was gathered through instructor grade entry and program collection through these two data systems.

Once the data was exported from the system into an Excel spreadsheet and sorted into a table organized by semester and course type, information was defined by the researcher. By doing this, the data presented clear information related to student success, withdrawal, and dropout rates, which allowed the natural barrier to student success to rise to the surface. Once this information was exported, clear indicators emerged that showed a significant need for additional study when focusing on student outcomes and barriers to student completion.

Participants of the Study

The data used for the study is from students who were enrolled over a two-year academic timeline which included six semesters in the introductory teacher education professional secondary education sequence course. These students were enrolled in a secondary teacher education preparation program that participates in the College of Education's professional education preparation program, either in a face-to-face or an online setting, over the timeline of two calendar years and six academic semesters. The data gathered include information for students who were enrolled in the course between Fall of 2018 and Fall of 2019, which included the summer terms. This timeline was selected because this was the period when the university's

College of Education introduced the online version of the introductory foundational course as an option for students entering into one of the college's secondary professional education programs.

The online sections of the initial teacher education methodology course were first implemented in Spring 2018 with one section of 31 enrolled students. Subsequent semesters either had one or two online courses offered for students to consider. Summer sessions offered the course only in an online format, capping the number of course sections at two. The enrollment numbers for the online format overall were between 23-62, with summer enrollment numbers between 39-44.

With six individual registration semesters included in this study, numerous F2F sections of the methods course were made available to students. In addition, several online versions of the same course were offered for students to select if desired. Only online enrollment was possible for students during the summer sessions, and only two course sections were offered. Over a two-year academic window, a total of 968 students enrolled in either the F2F or online version of the offered introductory teacher preparation methodology course. Table 1 includes the total number of students enrolled in either a F2F class or an online setting for instruction by semester and year. Due to the course only being offered online during the summer semesters, the number of students in a F2F setting for the fall and spring semesters who completed the course ranged between 156-187 students. In comparison, the number of students who completed the online version of Foundations Course #1 ranged between 23-57. In total, three of the six semesters offered both F2F and online versions of the course, one semester offered F2F only, and two semesters offered only online versions of the course. Thus, focusing on a two-year academic window, out of the 968 total students registered for the initial student teacher preparation, 857 completed the course,

while 111 dropped the course, 70 failed to earn credit for the course, and 787 successfully passed to earn credit for the course.

Table 1

Foundations Course #1 Total Students Enrolled, Dropped, Failed, and Passed by Modality

Semester	Enrolled	Dropped	Failed	Passed
Spring 2018				
Face to Face	198	11	10	177
Online	31	5	2	24
Summer 2018				
Face to Face	N/A	N/A	N/A	N/A
Online	44	17	8	19
Fall 2018				
Face to Face	219	32	13	174
Online	N/A	N/A	N/A	N/A
Spring 2019				
Face to Face	175	11	9	155
Online	23	0	3	20
Summer 2019				
Face to Face	N/A	N/A	N/A	N/A
Online	39	9	3	27
Fall 2019				
Face to Face	177	21	14	142
Online	62	5	8	49
Totals				
Face to Face	769	75	46	648
Online	199	36	24	139
All Students	968	111	70	787

Note. Dropped=students withdrew from course; Failed=students earned less than a 70% C in the course with no credit granted; Passed=students earned a 70% C or greater in the course with credit granted.

Table 2 represents the percentage of students registered in either the F2F or online version of the foundational course during the six semesters included in the study. Additionally,

the table outlines the percentage of students who dropped the course and those who completed the course over a two-year academic calendar covering six-semesters.

Table 2

Percentages of Students Enrolled, Dropped, Failed, and Passed in F2F and Online Courses

Modality	Enrolled		Dropped		Failed		Passed	
	n	%	n	%	n	%	n	%
Face to Face	769	79.44	75	9.75	46	5.98	648	84.27
Online	199	20.56	36	18.09	24	12.06	139	69.85
All Students	968	100	111	11.47	70	7.23	787	81.30

Note. Percentages calculated using the number dropped, failed, or passed out of the number enrolled for each course modality. Copyright 2020 Midwestern University.

Overall, nearly 80% of students registered in the foundational course selected the F2F option, and over 84% of those students passed and earned credit for the coursework. Out of the students who selected the online option, just over 69% of students passed the semester course. With an average completion rate for all students registered in the foundational course around 81%, those taking it F2F had a significantly better completion percentage than those in the online version.

Data Analysis Procedure

The procedures for the data analysis process began with organizing and securing pre-existing data related to course enrollment, student grades, and percentages needed to properly identify information to answer the previously mentioned research questions (Salkind, 2011). To help with the causal-comparable data analysis, it was determined that descriptive analysis

techniques would be the best option for establishing desired relationship data. Descriptive statistical analysis provides a more vital understanding of the course enrollment when comparing the F2F course and the online version of the course (Hair et al., 1999). This methodology was selected due to the inability to manipulate pre-existing data that is used throughout the university for programmatic decision-making. Through the campus data management system, this information is disseminated at different times throughout the semester and calendar year, and therefore manipulation and coding changes are not possible. In addition, the information was inputted into the Statistical Package for the Social Sciences (SPSS) system, which is a software program for compiling statistical data and analysis.

Ethical Considerations

This data was collected as part of a programmatic study, using pre-existing enrollment, completion, and academic recording data; hence the Institutional Review Board's permission was not sought for this study. All participants included in this study were not identified by name, program content area, or program sequence.

As with any data collection, statistics, or university research protocol, the information and participants' security must always be considered. Institutional Board Review (IRB) approval was not required for this study based on the data collection of pre-existing information accessible by the institution and College of Education personnel. Due to the data collection system used at the university, student names, instructor names, class rosters, and student grades were provided anonymously, with no security measures needed for the collection of the intended data. This information was gathered due to pre-existing university reporting needs and was not explicitly

collected for this study. In addition, anonymity and personally identifiable information about individual students was not included in this study.

Summary

As stated throughout this chapter, this research aimed to determine if barriers exist to student outcomes when comparing students enrolled in the same secondary teacher preparation course in a F2F (traditional) course versus the online (distance education) version of the course. The research focused on student performance, dropout rates, and withdrawal percentages as part of the total enrollment for two different course modalities. This course combines a set of contemporary topics in education related to curriculum and school organization and provides information to help students understand the profession of teaching. In addition, enrolled students begin to develop a professional perspective on teaching and how the field of education can be a potential career. Furthermore, this course includes a clinical observation component as an assignment, providing students with initial exposure to a classroom and community organization to observe and interact with teachers and students at the secondary level.

The data was collected through pre-existing institutional processes and data source gathering using COGNOS, a campus-wide software program that allows access to data such as student enrollment, dropout, withdrawal rates, and grade outcomes. The information is used as institutional data related to overall student course success, student completion, and enrollment numbers to project future program staffing needs and properly provide course availability for both the semester and academic calendar year. For this study, the data was analyzed using a quantitative research design utilizing an analysis of variance (ANOVA) test for statistical differences and significance, including descriptive statistics. This test reveals a statistical

difference of significance between variables. The results of the analyses are presented in the next chapter.

CHAPTER IV: RESULTS

Causal-comparative research designs explore differences between or among preexisting groups and are considered one of the most common forms of research design in the field of education (Mertens, 2014; Schenker & Rumrill, 2004). The purpose of this quantitative causal-comparative research study was to determine if there was a significant difference in student success and student completion when comparing face-to-face (F2F) and online learning sections of the same professional education sequence introductory course. This chapter will explain the data collection and analysis findings when concentrating on instructing students enrolled in F2F teaching modalities in contrast to online or distance learning modalities. The design was used to compare preexisting data related to student success rates, dropout rates, and student withdrawal rates in two instruction modalities of a foundational secondary teacher preparation course.

The findings presented in this chapter are structured around the research questions presented in Chapter III: Methodology. This chapter includes three distinct sections to identify specific results. The first section presents the collected data from the six semesters of course enrollment for the initial Foundations Course #1, both F2F and online variations. The second section of this chapter will analyze the different student success rates of the students enrolled in the two different course modalities in response to research question one. The third section will identify the differences in dropout rates when looking at the two different course modalities in response to research question two. The findings from the first two research questions will reveal implications for the teacher education program related to different instruction modalities of the same teacher education foundations course. This information is presented in the final chapter of this study.

Research Questions

1. To what extent do student performances differ in the traditional vs. the online teacher foundational education course?
2. To what extent do student dropout rates differ between traditional vs. online foundational teacher education courses?
3. What are the implications for offering foundational teacher education courses online vs. traditional formats throughout foundational teacher education courses?

Variables

By implementing a causal-comparative design, the two variables used for this study were the classroom settings (the two levels being the two different classroom instructional modalities used when comparing different students) and student outcomes (student success and dropout rates). For research questions 1 and 2, the independent variable remained constant with the dependent variable changing to address the need of the research question outcomes. The students and instructors of both course sessions never shared the same learning space.

It is critical to understand the data chart below and how it presents the research findings of the entire study. As presented in Table 3 below, both total numbers, as well as percentages of students enrolled in the courses, were used for the data analysis of this study to illustrate and support the variance in data collected for each of the course learning modalities.

Table 3

Breakdown of Student Data in All Sections of Foundations Course #1 over Six Semesters

Semester	Section	Modality	Enrolled	Dropped		Completed		Passed		Failed	
			n	n	%	n	%	n	%	n	%
Spring 2018	1	F2F	31	5	16.13	26	83.87	24	92.31	2	7.69
Spring 2018	2	F2F	29	1	3.45	28	96.55	27	96.43	1	3.57
Spring 2018	3	F2F	29	1	3.45	28	96.55	26	92.86	2	7.14
Spring 2018	4	F2F	29	2	6.90	27	93.10	26	96.30	1	3.70
Spring 2018	5	F2F	29	1	3.45	28	96.55	26	92.86	2	7.14
Spring 2018	6	F2F	30	1	3.33	29	96.67	28	96.55	1	3.45
Spring 2018	7	Online	31	5	16.13	26	83.87	24	92.31	2	7.69
Spring 2018	8	F2F	21	0	0.00	21	100.00	20	95.24	1	4.76
Summer 2018	1	Online	25	11	44.00	14	56.00	8	57.14	6	42.86
Summer 2018	2	Online	19	6	31.58	13	68.42	11	84.62	2	15.38
Fall 2018	1	F2F	35	5	14.29	30	85.71	25	83.33	5	16.67
Fall 2018	2	F2F	33	3	9.09	30	90.91	28	93.33	2	6.67
Fall 2018	3	F2F	35	9	25.71	26	74.29	26	100.00	0	0.00
Fall 2018	4	F2F	34	4	11.76	30	88.24	29	96.67	1	3.33
Fall 2018	5	F2F	35	6	17.14	29	82.86	26	89.66	3	10.34
Fall 2018	6	F2F	19	1	5.26	18	94.74	18	100.00	0	0.00
Fall 2018	7	F2F	28	4	14.29	24	85.71	22	91.67	2	8.33
Spring 2019	1	F2F	23	2	8.70	21	91.30	20	95.24	1	4.76
Spring 2019	2	F2F	22	1	4.55	21	95.45	19	90.48	2	9.52
Spring 2019	3	F2F	21	0	0.00	21	100.00	19	90.48	2	9.52
Spring 2019	4	F2F	24	2	8.33	22	91.67	21	95.45	1	4.55
Spring 2019	5	F2F	22	3	13.64	19	86.36	18	94.74	1	5.26
Spring 2019	6	F2F	23	1	4.35	22	95.65	21	95.45	1	4.55
Spring 2019	7	Online	23	0	0.00	23	100.00	20	86.96	3	13.04
Spring 2019	8	F2F	22	1	4.55	21	95.45	20	95.24	1	4.76
Spring 2019	9	F2F	18	1	5.56	17	94.44	17	100.00	0	0.00

(Table Continues)

Table 3 Continued

Semester	Section	Modality	Enrolled	Dropped		Completed		Passed		Failed	
			n	n	%	n	%	n	%	n	%
Summer 2019	1	Online	17	2	11.76	15	88.24	13	86.67	2	13.33
Summer 2019	2	Online	22	7	31.82	15	68.18	14	93.33	1	66.67
Fall 2019	1	F2F	20	0	0.00	20	100.00	18	90.00	2	10.00
Fall 2019	2	F2F	37	6	16.22	31	83.78	30	96.77	1	3.23
Fall 2019	3	F2F	34	5	14.71	29	85.29	26	89.66	3	10.34
Fall 2019	4	Online	30	1	3.33	29	96.67	26	89.66	3	10.34
Fall 2019	5	F2F	32	3	9.38	29	90.62	27	93.10	2	6.90
Fall 2019	6	F2F	22	5	22.73	17	77.27	15	88.24	2	11.76
Fall 2019	7	F2F	32	2	6.25	30	93.75	26	86.67	4	13.33
Fall 2019	8	Online	32	4	12.50	28	87.50	23	82.14	5	17.86

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The data table for this research study illustrates the findings for both research questions using total enrollment numbers by class and year, section, groups, count numbers, and percentages. Throughout the data table, it is significant to explain how percentages were used to demonstrate different components of a student enrollment group, student success groups, dropout groups, and overall enrollment numbers per section and delivery method of the Foundations Course #1.

Table 3 details a six-semester, two-year Foundations Course #1 enrollment cycle pre-COVID-19 pandemic. It must be highlighted that this research study uses data pre-pandemic, as students at the university were all required to enroll and complete all coursework in an online learning environment over the subsequent three semesters during the pandemic. With the study looking to draw conclusions related to student success and dropout rates when comparing F2F and online settings, it was essential to recognize data where the enrollment modality was not

offered to all students. The collected data was used for the following semesters: Spring 2018, Summer 2018, Fall 2018, Spring 2019, Summer 2019, and Fall 2019. These semesters were chosen to provide a two-year study that coincided with the semester breakdown at a traditional university. Additionally, this timeframe was chosen due to the online version of the Foundations Course #1 being offered in an online version for the first time.

The first column in Table 3 indicates the specific semesters identified for this research study. For this study, the research starts with Spring 2018 and subsequently moves through six semesters, including two summer sessions. In total, there were 36 course sections offered both in the traditional F2F modality and the online variation of the course. Additionally, each semester had a different total number of sections per Foundations Course #1 offered, ranging from the highest number of nine course sections in Spring 2019, to the lowest number of two in both Summer 2018 and Summer 2019.

The second column of Table 3 indicates the numbered sections categorized by semester and course offering for this study. As mentioned in the previous paragraph, each semester had a different number of course sections chronologically listed in the university's course catalog. Students were able to register for each section per semester based on the days/times of the course sections offered. In total, 36 course sections were offered through the College of Education at Midwestern University from Spring 2018 through Fall 2019.

Column #3 of the data table illustrates the type of teaching modality for each individual course section of the Foundations Course #1. This column separates course sections taught in a traditional style F2F and the online version of the same course. It is essential to clarify that some semesters did not offer the online instruction modality for the Foundations Course #1 until Spring 2018, which helped identify the correct semesters to use for this study. Additionally, the

Foundations Course #1 was only offered in an online modality for both summer semesters. Overall, the six semesters identified for this study had a total of 36 class sessions, 28 offered in the F2F modality and eight sections held in the online course modality.

The fourth column of the data table details the total number of students who initially enrolled in each section of the Foundations Course #1 over the two-year, six-semester data research period both in the traditional F2F modality as well as the online version of the course. This column displays the overall number of students who registered for one of the 36 sections, with an overall total of 968 students, 769 of which enrolled in the F2F sections and 199 who registered for the online version of the same Foundations Course #1. Over the research period, the student enrollment ranged from 17 in the Summer of 2018 to 37 in the Fall of 2019.

Column #5 of Table 3 displays the number of students who dropped the course during the semester prior to completing the course to earn a grade, decreasing the overall number of enrolled students. The total number of dropped students is indicated by each semester and course modality, totaling 111 students over a two-year, six-semester timeframe from Spring 2018 through Fall 2019. All in all, 75 students dropped the F2F modality of the Foundations Course #1, while 36 students dropped the online version of the same course. In addition, the next column #7 illustrates the overall percentage of students who dropped the course connected to the modality of the Foundations Course #1. This data table shows a significant difference in dropout percentages between the two modalities. For the traditional F2F course modality, 9.75% of the enrolled students dropped the course and did not earn a grade. On the other hand, in the online version of the same course, 18.09% of the initially registered students dropped the course and did not earn a grade. When comparing the course delivery modalities, 8.34% more students dropped

out of the online version of the Foundations Course #1 than the F2F sections, showing a significantly higher online enrollment dropout rate.

The seventh column demonstrates the total number of enrolled students who completed the course over the indicated timeframe for this study. This column is sorted by semester and course modality, showing the total number of students finished the F2F and the online sections of the Foundations Course #1. Overall, the data represents a total of 857 students who enrolled and completed Foundations Course #1 over the two years. In total, 694 students completed the F2F version of Foundations Course #1, and 163 total students completed the online option of the same course. The next column breaks down the percentage of students who stayed in each section through the end of the semester. The data table reveals a ratio of F2F students to online students completing the same Foundations Course #1 at just over 4:1, indicating a significantly higher student population completing the F2F course modality for the Foundations Course #1.

The ninth and tenth columns outline the statistics for students who were successful in the Foundations Course #1 by earning a passing grade of A, B, or C as outlined by the institution's course catalog and academic requirements as per the Midwestern University course catalog. It is crucial to identify that all courses included in the secondary education professional education program sequence must be completed with an earned grade of A, B, or C to be recognized as passing (successful) and earn graduation credit without a course needing to be repeated. In addition, the State Board of Education recognizes a passing grade in teacher education preparation courses as A, B, or C earned grades. In total, 787 out of a possible 968 students initially enrolled in either modality of the Foundations Course #1 successfully earned a passing score of an A, B, or C. In total, 648 out of the 694 students who completed the F2F sections of the course received a passing grade. Plus, 139 students out the 163 students who completed the

online modality of the same course earned credit. Students who did not complete the course for a grade were not included in this column as they did not represent course completion. Additionally, students who earned a D, F, or WX were not included in this column.

It is vital to accurately identify the student percentage of enrolled students who successfully completed the course in each of the different formats offered. Overall, the traditional F2F sections had a 93.37% total success rate over the six-semester study period. However, the online sections of the Foundations Course #1 saw an 85.28% successful passing percentage. Thus, the rate difference between the two modalities landed at 8.1% in total. This variance represents a significantly lower student success rate when enrolled in the Foundations Course #1 through the online modality.

The eleventh column on the data table illustrates the number of students who enrolled in the Foundations Course #1, both the F2F version as well as the online version, who did not successfully complete the course with a passing score of A, B, or C. As the column reveals, a total of 70 students over the six semesters, two-year study did not earn a passing grade according to the institution's grading scale and program guidelines. Zoning in on students who enrolled in the traditional F2F setting, 46 out of the 648 student who completed the semester did not successfully earn credit for the course. The column also highlights that 24 out of the 199 students who completed the semester in the online version did not earn a passing grade for the course.

The final column on the data table highlights the overall percentage of students enrolled in the course, either F2F or traditional, who did not successfully complete the course with a passing score of A, B, or C. Over the two-year study, it was determined that 6.63% of students who enrolled in the traditional course modality were not successful, compared to 14.72% of students in the online sections of the Foundations Course #1. In total, an 8.09% rate of difference

exists between students enrolled in the traditional versus online course modality showing a significantly lower student success rate when enrolled in the Foundations Course #1 online modality.

Research Question 1

To what extent do student performances differ in the traditional vs. the online teacher foundations education course?

Student success was determined by the institution's course catalog description that a student must earn an A, B, or C to pass the course and move through the program sequence. Focusing all research data for this study on the Foundations Course #1, the introductory course in the program, students who did not earn a successful grade either chose to retake the course or drop out of the secondary teacher education program. Students who do not pass the Foundations Course #1 must decide to delay graduation by re-enrolling in the course or removing teacher education from their program of study, changing major content areas of focus, and potentially needing to apply for a different content major program.

Of the 857 total students who completed the semester course, the 648 students enrolled in a F2F section over the six-semester period earned an A, B, or C final grade. This computes to a success rate of 93.37% of students who completed the course in the F2F modality. Turning attention to the online course completers over the same six-semester timeframe, 139 total students earned an A, B, or C in this modality of the class, representing a success rate of 85.28%. In total, 70 out of 857 students who completed the semester did not successfully earn credit for the course according to both the institutional and state board of education standards with a

passing score of A, B, C. The failure rate for students in the F2F sections landed at 6.63%, while that of the online sections was 14.72% all in all.

In this study, the results related to the first research question demonstrate that student success when enrolled in a F2F modality stands significantly higher compared to the rate of success in the online version of the Foundations Course #1. A one-way ANOVA was conducted to determine the mean student success rates for students completing the course earning grades of A, B, or C related to the course modality. As shown in Table 4 below, the mean percentage for successful students in the face-to-face class was 93.53%, M = 93.53, and the standard deviation SD = 4.01. Table 4 also highlights that the mean for successful students in the online version of the course was 84.53%, M = 84.53, and the standard deviation SD = 11.81. When comparing the student outcomes of success between the F2F course modality and the online version, there was a 9% higher outcome for students who enrolled and completed the F2F version of the course, representing a significant performance increase through the research timeframe. The findings from the analysis showed a significant difference in student success related to class modality, $F(1, 34) = 13.78$, $p = .001$. This test shows a notable effect of the course delivery method on student success rates for the two-course modalities in this study.

Table 4

Student Success Rates by Course Modality

Modality	Sections	M	SD	Std. Error	F	p
F2F	28	93.53	4.01	0.76	13.78	0.01*
Online	8	84.10	11.52	4.07		
Total	36	91.53	7.40	1.23		

Note. M=Mean; SD=Standard Deviation; Std. Error=Standard Error; *p < 0.05

In contrast, a one-way ANOVA was conducted to determine the mean for students who were unsuccessful in passing the course by earning grades lower than a C in each method of course delivery. As displayed in Table 5, the mean for unsuccessful students in the F2F sections was 6.21%, M = 6.21, and the standard deviation SD = 3.97. The mean for unsuccessful students in the online sections of the course was 15.90%, M = 15.90, and the standard deviation SD = 11.52. When comparing the mean outcomes between the F2F and the online versions of the course, a difference of 9.7% represents a significant variation in failures based on the modality selected by the students. An analysis of variance showed student failure related to class modality was significant F (1, 34) = 14.67, p = .001. This test underlines a significant effect on the percentage of students who did not earn credit for the course when comparing the delivery method for the two variables in this study.

Table 5

Student Failure Rates by Course Modality

Modality	Sections	M	SD	Std. Error	F	p
F2F	28	6.2071	3.96871	0.75002	14.67	0.001*
Online	8	15.8975	11.52069	4.07318		
Total	36	8.3606	7.44242	1.24040		

Note. M=Mean; SD=Standard Deviation; Std. Error=Standard Error; *p < 0.05

Research Question 2

To what extent do student dropout rates differ between traditional vs. online foundational teacher education courses?

Student termination, or dropout, was determined by the institution's course catalog and registrar's office explanation of course enrollment termination. Focusing all research data for this study on the Foundations Course #1, or the introductory course in the program, students could drop the course prior to the scheduled timeline to withdraw and receive a WX on the transcript, usually before the 10th day of classes of the first midterm evaluation period. Students who dropped the Foundations Course #1 had to decide to delay graduation by re-enrolling in the course or remove teacher education from their program of study, changing major content areas of focus, and potentially needing to apply for a different content major program.

A total of 111 students dropped the Foundations Course #1 between Spring 2018 and Fall 2019, or more accurately, a six-semester timeframe. Of the total number of students who withdrew from the course (n=111) total, 75 students were initially enrolled in the F2F course modality option, while 36 students were initially enrolled in the online version of the same course over the six-semester calendar timeframe between Spring 2018 and Fall 2019.

As shown in Table 6, the mean percentages for students who dropped the F2F class equaled 9.07%, M = 9.07, and the standard deviation SD = 6.73. Furthermore, the mean for student dropouts in the online version of the course was 18.90%, M =18.89, and the standard deviation SD =15.39. To support these statistics, 75 out of the 769 students who initially enrolled in the F2F course modality dropped the course over the six-semester timeframe for this study. Additionally, 36 out of 199 students initially enrolled in the online version dropped out of this course prior to completion.

When comparing the student dropout rates between the F2F and online course modalities, there was a 9.83% variance between the two versions, representing a significant difference in performance through the research timeframe. An analysis of variance showed student dropout

rates related to class modality were significant F (1, 34) = 7.13, p = .012. This test revealed significant effect of course delivery method, F2F or online, on student dropout rates for this study's focus on the Foundations Course #1.

Table 6

Student Dropout Rates by Course Modality

Modality	Sections	M	SD	Std. Error	F	p
F2F	28	9.07	6.73	1.27	7.13	0.012*
Online	8	18.90	15.39	5.44		
Total	36	11.20	9.95	1.68		

Note. M=Mean; SD=Standard Deviation; Std. Error=Standard Error; *p < 0.05

In this study, the results for the second research question concerning student dropout rates when enrolled in a Foundations Course #1 in the online setting are significantly higher when compared to students who dropped out of the F2F version by a 2:1 ratio. This information represents a meaningful impact of the course modality on the student enrollment and completion rates in the Foundations Course #1, with a clear increase in potentially lost student enrollment, failure to complete the course, and potential loss of graduates entering the professional field of education. The results suggest a higher expected dropout rate of students who enroll in the online version of the Foundations Course #1, creating a significant barrier to student success.

Summary

This chapter focused on analyzing the first two research questions of the study related to student enrollment and success in the initial Foundations Course #1 as part of the secondary education professional education sequence at Midwestern University. The study findings for research question #1 show a significant difference in students' success, with more students

earning a letter grade of A, B, or C in the F2F sections, at a rate of 9% higher significance than students enrolled in the online version of the same course. Thus, this information shows a significantly higher performance rate for student success when enrolled in the F2F version of the Foundations Course #1.

Additionally, the data collected for research question #2 shows there was a significantly higher student dropout rate for students enrolled in the online version of the Foundations Course #1, versus that of the F2F sections, at a 2:1 ratio or just under 19% for all students enrolled in the online version of the Foundations Course #1. Overall, this data provides information that details a statistically significant variability to student dropout rates when comparing course instruction modalities. To round out the study, Chapter V will dig into the third and final research question regarding the implications for offering the foundations course in both versions and potential steps for the institution moving forward.

CHAPTER V: DISCUSSION OF FINDINGS, RECOMMENDATIONS, IMPLICATIONS, AND FUTURE RESEARCH

This study aimed to compare student performance, completion, and dropout rates in a traditional versus online version of the foundational course in a secondary education teacher education preparation program. To achieve this purpose, university data were gathered over a two-year or six-semester period from Spring 2018 through Fall 2019. In this chapter, a summary of the findings from this investigation is presented. In addition, implications of the study are discussed in relation to past literature, and recommendations for practice and future research are made.

Summary of the Study

Findings from this investigation, as documented in Chapter IV, demonstrate significantly lower student success and completion rates and higher dropout rates for students enrolled in the online version compared to the traditional face-to-face version of the foundational course. Data from the two-year study illustrates that when comparing student success through different course modalities, there could potentially be a 33% greater unintended failure rate causing an inability to complete the course for students who enroll in the online version of the Foundations Course #1. The results further suggest that student performance in the traditional classroom setting is strong, with only a few students failing to earn a passing grade or completing the course.

Alternatively, the students enrolled in the online version of the course have significantly lower success rates, either by failing to earn a passing grade or not completing the Foundations Course #1. The results have implications for the secondary teacher education program in that the students who enroll in the traditional face-to-face (F2F) course seem to have a higher potential to

continue in the preparation program, complete student teaching, and enter the profession of education. On the other hand, a substantially lower number of students from the online version of the Foundations Course #1 are completing the course, which may lead to an increased number of students who are less likely to remain in the teacher preparation program and graduate to become classroom teachers. In a vacuum, the data suggest lower student completion statistics may negatively impact the teacher shortage issue in the state.

The information from this study provides a myriad of avenues for discussion focused on the need to improve student success in the online version of the Foundations Course #1. With a significantly higher dropout rate (18.09%) for students enrolled in the online course modality, attention must be focused on the unintended barriers limiting student learning and completion. Also, in conjunction with the 14.72% of students who were unsuccessful in earning a passing grade in the online sections of the Foundations Course #1, the results of this study provide information that could potentially translate into reasons to consider redesigning the online version of the course.

Limitations of the Study

It is important to recognize several limitations to this study that prevented potential research topics that may have provided additional findings and allowed for discussion. Potentially, these limitations could bring to the surface areas of future research that may be added to the current statistics of this study and provide new research to help identify answers to some of the topics to be discussed later in this chapter.

The first limitation to discuss was the decision not to use any data existing during what was considered the height of the COVID-19 pandemic. To be specific, data compiled for this

study did not include the following semesters: Spring 2019, Summer 2019, Fall 2020, Spring 2020, or Summer 2020. To explain further, these semesters included primarily online courses, especially in the case of Spring 2019 when higher education had to abruptly move to a remote setting for all students in an attempt to complete the remainder of the semester. This research study compared students who willingly had the opportunity to choose which modality of the initial Foundations Course #1 they wanted to enroll in by personal choice. Using data collected while the COVID-19 pandemic affected semesters would have skewed data to higher online enrollment, potentially altering data results significantly. Due to the uncertainty of student choice as well as requiring students to move to a course modality they may not have intended to enroll in, it was deemed necessary to remove these identified semesters from the study.

A second limitation to this study was incorporating student demographic data that may have provided additional pathways to the results and implications of this study. Due to the nature of much of the student demographic and personal information, it was deemed rational to provide more baseline data and not incorporate individual student demographic statistical information to this study. Recent university protocols have made it increasingly more challenging to obtain data related to many student demographic statistics, steering the decision to eliminate all specific student demographic information from this study. Due to this limitation, it was determined to use enrollment data by semesters, class, and modality only and not include any specific student demographic information. By adhering to this limitation, additional studies could potentially illustrate specific student success and completion rates by different demographics and create a pathway to additional research areas that would provide beneficial data to program-level, department course design, or university decision making.

A third limitation to this study was the inability to compare pre and post Covid-19 statistical data to gauge significance to student enrollment, success, and drop-out rates when students no longer had the choice to enroll in the course in either modality. As mentioned previously, students were forced to complete the Spring 2019 semester online without any face-to-face option, and the subsequent two semesters only allowed online enrollment for initial Foundations Course #1. This information could significantly impact enrollment data, but in a way that was not consistent with this study. This information could potentially shed light on trends that would create a future research opportunity to discuss what the statistics reveal about the studied variables and how they may have been impacted when comparing the two distinct time periods. When factoring in the focal points of this study and the need to compare students from different modalities of the same course, the inability to provide statistical significance to the study over the specifically identified pandemic semesters that were greatly impacted could potentially skew data in a manner that may significantly impact the goals of this study.

Discussion of the Findings

Research Question 3

What are the implications of offering an initial foundational teacher education course online vs. traditional formats as part of a teacher education program?

At a foundational level, a good learning experience is one where students can "master knowledge and skills, critically examine assumptions and beliefs, and engage in an invigorating, collaborative quest for wisdom and personal, holistic development" (Eastmon & Ziegahn, 1995, p.59). Eastmon and Ziegahm noted that while the modality of learning may continue to change as we move further into the 21st century, the premise of learning and personal growth through a

learned concept has remained the same across college campuses for a very long time. Granted, this concept can be considered dated. However, the findings from the current study demonstrate a significant chasm when comparing the number of students who are either unsuccessful or fail to complete the introductory course in a secondary education teacher preparation program when taught online compared to successful students enrolled in a F2F section of the same course. By bringing awareness to this gap, the university can look at the existing model of instruction and use research-based information to accurately identify the changes needed to improve student success in the online course sections.

According to a report conducted in Fall 2021 by The Illinois Association of Regional Superintendents of Schools and Goshen Education Consulting, a survey went to 852 school leaders in the fall of 2021, with 660 responding to the grave nature of the state's teacher shortage crisis over the past five years. This report identified that more than 2,000 positions were either unfilled or filled by someone who was not qualified to teach (Smylie, 2022). By creating barriers to student success, the institution may unintentionally exacerbate the statewide teacher shortage risks and negatively impact the number of future teacher candidates who become first-year teachers. When looking at the learning gap revealed by this study that highlights lower success rates for students who are enrolled in the online version of the Foundations Course #1, the implication of this course, with a lower number of enrolled students and higher average rates of dropout and failure, can potentially remove more students from completing a degree in secondary education programs.

As this study indicates, the main implication resulting from the data is that there is a significantly lower student success rate for students enrolled in the online format of the initial teacher preparation sequence. When combining the lower rate of student success in earning a

passing grade (A, B, or C), with the higher percentage of students who do not complete the course and drop out, there is a significantly higher number of students who in turn are not moving onto the next course in the teacher education professional educator program sequence. Due to the Foundations Course #1 being the initial course and a prerequisite for all subsequent courses in the secondary teacher preparation sequence, student outcomes have a significant impact on overall enrollment numbers for students continuing or halting their progress in a teacher preparation program to earn an undergraduate degree in education. Conversely, students who are not successful in the initial Foundations Course #1 risk being either required to repeat the course, causing a delay in graduation and incurring additional financial burdens, or dropping the teacher education program altogether.

As explained in Chapter 4, an 9% lower student success rate was found when comparing the two modalities of the same Foundations Course #1 across the two-year timeline of this study. While 93.53% of students who enrolled in the course's F2F format successfully earned a passing score, only 84.53% of students enrolled in the online version of the same course successfully passed the course. True, both course percentages show a high rate of course success and should be recognized, but a 9% difference exists between the two modalities. Plus, a 2:1 ratio of student dropout rates was discovered for the students who enrolled in the online format versus those in the F2F sections. This result shows a significantly lower percentage of potential student completers for the online sessions. When this occurs, a significantly lower number of students continue in higher education, graduate, and enter the workforce as newly licensed teachers throughout the state.

This data can be linked with the theoretical framework outlined in previous chapters of this study which draw a connection to the creation of an online learning environment that can

strengthen the learning experience of students and elevate the student success rates. As outlined in Chapters 1 and 2 of this study, Moore's theory of transactional distance covers a broad spectrum of teaching and learning capabilities with regard to distance education. As Moore (1991) stated, "The distance of understanding and perceptions, caused in part by the geographic distance that has to be overcome by teachers, learning, and educational organizations if effective, deliberate, planned learning is to occur" (para. 4). As mentioned previously, TDT outlined the need for "dialogue, structure, autonomy, and the existence of transactional distance as a psychological variable that must exist in a learning or educational setting" (Saba & Shearer, 2018, p 2-3). Linking the criteria for distance learning needs with the lower student success and completion rates for students who enrolled in the online version of the Foundations Course #1, several potential recommendations for focusing on the learning environment, course instruction, and course design could potentially raise student success levels. The adaptation of the current iteration of the learning environment could potentially negate the optimum learning space conducive to students' stronger motivation and connection within online coursework, developing a positive learning space allowing the process of student learning to take place (M. Moore, 2013; Moore & Kearsley, 2012). Identifying the needs of the online learners and choosing to actively adapt the course instruction and design of the online course could potentially close the gap in student success compared to the traditional face-to-face course.

Recommendations for Practice and Further Research

This study was conducted to further the understanding of the difference in student performance and dropout rates when enrolled in either the online or face-to-face versions of a foundational teacher education course in a professional education sequence. Considering the data

described throughout Chapter 4 and above in this chapter, several recommendations for practice and further research will be addressed below.

Programmatic Training in Online Teaching

Some of the reasons for the lack of student success in online programs as already presented in past research are as follows: physical separation and feeling of isolation, technology failures, negative interactions, inadequate instructor interaction and feedback, and lack of course clarity and direction (Lehman & Conceição, 2014). In comparison, Schifter (2000) and later Salvo (2017) highlighted that the main barriers in online higher education programs are lack of institutional support for faculty, lack of technical infrastructure, and failure to address course development. Also, there exists a chasm between what higher education believes is a well-developed online education program and what students are clamoring for when they search for a program in which to enroll (Lehman & Conceição, 2014, Salvo, 2017). When working to unite these two concepts to find a commonality for success, these two focal points do not seem to emphasize student success in online education or institutional success in developing student-centered courses and programs.

It is imperative to recognize potential changes to the discussed teacher preparation program to identify improved ways to support and promote a higher degree of student success when enrolled in the introductory course. By looking at the following areas, a great opportunity exists to lower the number of students who are unsuccessfully completing the course, keep students on track to earn their undergraduate degree in teacher education and join the teaching workforce, and help lessen the identified teacher shortage epidemic.

Examination of Student Demographics

Further analysis of student demographics in the online course sessions could open up discussion as well as provide a myriad of research opportunities. One avenue would be to seek to understand student success in the Foundations Course #1 and how traditional versus online modalities are trending in response to demographics such as gender, background, first-generation, socioeconomic status, and even grouping by student residency areas. Further research could provide unique details to redesign courses sessions to remove unintentional learning barriers. For instance, Duffin (2019) cited research showing more female students enroll in online courses in higher education. Almost 65% of all undergraduate students enrolled in online courses are female, providing an opportunity for a study based on student gender information. With this data, a study may prove beneficial in developing course design further to potentially highlight gender demographics to correlate student success and gender. Further analyzing the data to break down by student demographics would provide additional knowledge to develop alternate course learning environments that identify barriers, helping to remove components that may provide increasing deterrents for students or ultimately, causing student failure or dropout percentages to increase. These studies could also raise awareness to common links to student success in other programs on campus or show needed attention to course redesign based on national statistics.

Student Voice

Another recommendation for practice and future research focuses on student voice. A qualitative study that encompasses interviewing students enrolled in the Foundations Course #1 could uncover details about their experiences in the course as well as in the secondary education teacher program. These interviews would allow for meaningful conversations for both successful

and completed students and those who did not complete the course, as well as generate a better understanding of the reasons that resonated with each group.

Past research cites some of the reasons for student interest in online courses as addressing affordability and offering the quickest path to graduation. The school's reputation and quality of the faculty and program continue to gain momentum as significant factors when aiding a student's decision to enroll in distance education (Duffin, 2020). A 2019 survey asked 1,500 students enrolled in at least one online class to identify the main reasons for their enrollment choice and found almost 60% of students selected affordability of the course as the initial driving force, and 40% of students responded that the reputation of the school/program was the second most crucial factor when selecting their course option. Quality of faculty in a program ranked in the top five choices, with just under 35% of students selecting this factor (Duffin, 2020). It is becoming clear that while affordability will likely be the number one driving force for online course delivery, the quality of program and instruction continue to become critical factors in decision making. With this said, several potential focal points may aid in providing support to this new evidence and help program and instructor development align with student needs. Acknowledging specific student needs when enrolled in an online course, developing program pedagogy to aid learning, and providing instructors with professional development to identify weaknesses in instruction will aid student development and success in the Foundations Course #1 and the program as a whole.

According to Jaggars and Xu (2010) and later discussed by Guan & Stanford (2016), research has identified a strong connection between student withdrawal in online programs and the lack of support either from the faculty member instructing the course or from the institution as a whole. Sitting down with the students to ask questions about their course experience by

specifically focusing on the learning environment, course structure, learning barriers, or even simple communication throughout the course could provide evidence for compelling further discussion topics as evidence for modifying practice. Looking for evidence of barriers from the student perspective may not have been considered when course development was completed. These unintended barriers may uncover why students are unsuccessful in the foundations course as they start in the teacher preparation program.

A Focus on Underrepresented Groups

There are countless avenues to pursue additional research specifically highlighting students from underrepresented groups enrolled in teacher education programs, specifically connected to online programs. These studies could potentially help a university or undergraduate programs identify barriers to completion by identifying the inequities in learning and instruction. The use of quantitative and qualitative research methodologies could potentially draw attention to these anomalies. For instance, in 1974, the completion percentages for students at a four-year college were as follows: white students (14%), Black students (5.5%), and Hispanic students (5.5%) of total students (Wellman, 2017). According to this analysis, these numbers indicate an achievement gap of 8.5% between white students and either Black or Hispanic students. Jumping forward to 2015, the rates for same three student groups who completed four years of college advanced to the following: white students (36.2%), Black students (22.5%), and Hispanic students (15.5%) (Wellman, 2017). As the percentages reflect, there was a 13.7% gap between Black and white students and a 20.7% gap between Hispanic students and white students. When comparing the results from 1974 to 2015, the gap represents a much higher number than the original 8.5% statistic. This study examined in more detail the widening achievement gap in our higher education system when comparing Black, white, and Hispanic students in higher

education. The good news is that the number of individuals obtaining higher education degrees has increased for all three student groups. The negative statistics however represent a continued widening gap for students of color, representing the need for attention from higher education campus leadership. This helps to identify continued problems in achievement and shows a pressing need for a continued paradigm shift in our education system when considering equity.

These numbers illustrate an achievement gap that continues to manifest itself throughout society. Many believe a higher education institution degree is the best way to elevate one's standard of living and enter the workforce with the necessary skills leading to employability. When students are not successful, this has a trickle-down effect on students, families, socioeconomic status, and ability to secure a position with a company to earn an equitable wage and begin to remove barriers created by income (Wellman, 2017; Young Invincibles, 2019). The existing gap in higher education attainment is often considered the primary reason for many inequities in our country. The lack of educational attainment throughout public school and higher education leads to a considerable gap in socioeconomic status and living conditions (Young Invincibles, 2019). These sentiments are not generating new discussions or bringing to light any academic phenomenon; instead, they are reshaping a need. However, the focus needs to be on a continued conversation to turn a systemic problem into a cultural shift. Moving forward in the 21st century, higher education cannot rest on history and tradition. There can no longer be continued support for widespread, systematic failures frequently not recognized by academia and higher education leadership.

As higher education institutions rush to discuss enrollment strategies and turn to distance learning, some student demographics are left behind to navigate the process independently, with little support or a chance to succeed. This inequity related to higher education distance learning

is the failure to link college access to student support culminating in a disparity in academic success across all student groups (Salvo, 2017).

Turning attention specifically to online education enrollments to further illustrate a widening gap in student demographics, undergraduate enrollment percentages reflect the following: the percentage of White students (63%), Black students (15%), and Hispanic students (10%) enrolled in partial or complete online programs differs greatly. Furthermore, graduate student populations mirror undergraduate statistics, with similar percentages of white students (67%), Black students (11%), and Hispanic Students (10%) enrolled online (Classes and Career, 2018). These statistics show a significantly lower enrollment number for students from underrepresented groups. With lower online enrollment for students from unrepresented groups ranging from 48-53%, the inequity in higher education attainment continues in online education, a platform intended to bring educational attainment to more students who seek higher education degrees. Throughout the scholarship, many outlets discuss the preference for Black and Hispanic students to enroll in online courses to counteract significant personal and professional time constraints. However, the overall lack of completion and student success points towards a disconnect in how online course delivery is structured, negatively impacting completion (Garrison, 2017; King & Alperstein, 2018).

Online learning program development continues to lag when focusing on students' success from underrepresented groups (Salvo, 2017). As mentioned earlier, research has identified connections between student withdrawal from online programs due to the lack of student support by a faculty member, the course structure, or the institution as a whole (Jaggars & Xu, 2010; Guan & Stanford, 2016). These failures can be an opportunity for further study, focusing on individual students who represent underrepresented student groups enrolled in

teacher education and identified by campus enrollment management and the registrar's office. While these students provide a lower total number of enrollments in many teacher education programs, there is a concern for student attrition throughout the college programs. A comparison study to evaluate success when enrolled in a traditional course compared to the online version of the same teacher preparation course may provide detailed information to unidentified learning barriers specifically targeting certain student groups. This study could be completed using either a quantitative or qualitative methodology, depending on the area of focus and intended outcome.

In 2014, Diana Moore completed a research study to investigate why Black students withdrew from online education courses. In this study, of which 50% of the participants were Black males, it was concluded that a lack of interaction and inefficient communication from the instructor and university was the leading cause of the decision to drop out (D. Moore, 2014). A deficit mindset would investigate why Black males struggled to be successful in these courses and focus on what those students did poorly. However, a deficit mindset focused on the lack of institutional support is needed for these students to continue enrollment in the online programs by laying the blame on the format of the class and instructor (D. Moore, 2014). The failure of institutional support to manifest itself in diverse course content and interaction techniques to bring out proper student learners was no fault of the students enrolled. The students were not provided the opportunity to learn and use developed skills. They were pushed into a course with minimal chances to be an individual and learn as their skillset required (D. Moore, 2014). This is an example of the need to shift the mindset from blaming outcomes on how the students are failing to learn to pointing out what the institutions are not doing to support student learning. Although they have not existed for decades as most educational and behavioral theories have, newer theoretical framework such as anti-deficit thinking and anti-blackness allow for student

success to drive program reframing and better design a learning space product. This space allows students to feel equal and safe. If institutions develop comprehensive, equitable online programs for 21st century students, the learning theory should coincide with technology and support student needs within program development.

Traditionally, an anti- deficit mindset looks to unlock why students of color struggle to obtain high school and college degrees. The focus on what students do not do or how they struggle aligns with a system setting students up for failure. Higher Education needs to continue an emerging process of creating an online program supporting students' needs through an anti-deficit mindset. What does the concept of anti-deficit necessitate? The concept was introduced by Harper (2012) and Salvo (2017) to spotlight the strengths of the students and to highlight the resiliency students have shown through adversity and lack of support. These strengths lead to personal and professional success. Harper focused on the intentionality of shifting the mindset to discover what students are doing right instead of what they are doing wrong and why those wrongs hinder success (Harper, 2012). This type of thinking leads to a new pathway designing equitable access to higher education, either through traditional learning (face-to-face) mediums of interaction or distance learning (online education) platforms (Salvo 2017).

Investigate Student Acceptance

Continuing to investigate student experiences when enrolled in distance education courses, future research topics could look to draw positive connections between program development and student acceptance within those programs. Potential qualitative research trends may highlight student experiences and identify factors that promote a positive program experience or identify barriers precluding students from being successful and completing a course to enter into the workforce.

A research study by Tucker (2014) found that factors motivating students from underrepresented groups to complete online programs include: class convenience, flexibility, a color-blind environment, support and interaction with faculty, and institutional support. These factors were identified as contributing to student success within a learning environment. The research also identified factors stretching *beyond* institutional support and described them as students' influences contributing to success as self-efficacy, educational resilience, and motivation (Tucker, 2014; Salvo, 2017). Tucker's case study also concluded that student participants of color preferred offline social supports and acknowledged social interactions helped alleviate feelings of isolation typically attached to online course enrollment. These interactions allowed students of color to experience interactions centered on learning, but not necessarily in an online learning environment. Specifically, Black students believed fewer microaggressions existed in online learning environments, allowing for learning without cultural and racial bias at a higher rate than F2F courses (Patterson & McFadden, 2009; Salvo, 2017; Salvo, 2017). This information led to the study results showing that almost 40% of Black students preferred online courses because they created a non-prejudicial learning environment (Salvo, 2017). In Tucker's (2014) cases study, one student's remark supported these claims:

> It's an open forum where everyone has the opportunity to say what they want to say. In the classroom, you may not get picked. That's just being honest. In online classes, everyone has the same access. I hate to talk about all that kinda stuff. You know, race and that. But I see fewer people of color raising their hands. Because they already know that it's not going to happen. In online classes, it takes all of those variables away. It makes you feel comfortable. No anxiety about any of that. (p.28)

This student's comment further heightens the need for faculty to address acceptance and cultural awareness in the classroom to allow students of color to feel both supported and equal within the classroom environment. Cultural neutrality in a classroom promotes student learning environment acceptance and encourages student motivation to learn actively as part of the learning community. Student acceptance directly affects motivation and course interest, providing the necessary connections students seek to develop when enrolled in online classes. This notion was supported by comments from a Black college student pursuing a degree in education:

> College is stressful. You have a lot to worry about, like paying for school, loans, passing classes, balancing work and personal matters, as well as financial issues, but when you're a student of color, you have additional things to stress about like enduring racial bias. I've experienced considerable racial bias to the point where I considered dropping out of school. I've seen how textbooks can make your race seem like a deficit or how indifferent professors and classmates can make you feel unwelcomed as a person of color. For me navigating college is hard enough with the present financial obstacles, but the racism tied to our higher education system needs to be addressed for people of color to truly feel like a college degree is available to everyone regardless of skin color. (Young Invincibles, 2019, para. 1)

Student isolation and negative social interaction are the predominant reasons students are unsuccessful in an online learning platform. When investigating students from underrepresented groups and underachievement, isolation, and the lack of a culturally neutral environment, or what is known as negative learning experiences, continue to surface as predominant factors for student struggle (Hall, 2010; Salvo, 2017).

With the continuing emphasis on the need to support students and integrate an anti-deficit mindset to support students, online education is both an attractive option and a barrier for students from underrepresented groups. While the potential to enroll in higher education classes offers a variation in the schedule, time commitment, and cost to aid in time management problems, dropout rates for Black students are significantly higher versus those for white students (Willging & Johnson, 2009). Many of the factors leading to online course incompletion for all students tend to be similar but unique to the individual student. Black students often site disconnectedness as well as expectations of lower achievement as main struggles (Willging & Johnson, 2009; Patterson & McFadden, 2009).

Disconnectedness can be explained as a lack of positive learning interactions that would ensure the students feel they are part of the learning community, and their contribution to the class is welcomed (Willging & Johnson, 2009; Patterson & McFadden, 2009). In a study completed by Hall (2010), Black students cited primary reasons for enrolling in online courses as believing they were entering into culturally neutral environments where they could learn in a more color-blind environment (Patterson & McFadden, 2009). This experience created a learning environment focused on positive relationships and student interactions.

Faculty Instruction and Voice

Another area of research that may assist in better understanding barriers to student success when enrolled in the online sections of the Foundations Course #1 would be to complete a study investigating factors for faculty to be successful when instructing an online course. Research shows the main reasons for the lack of student success in online programs are the following: physical separation and feeling of isolation, technology failures, inadequate instructor interaction and feedback, and lack of course clarity and direction (Lehman & Conceição, 2014).

A possible study could help identify research methodology to help faculty articulate professional development needs to continue learning best practices related to online education. These studies could assist in the implementation of professional development for improving online pedagogy strategies to aid in student success. Looking at online teaching pedagogy specifically, Rehn et al. (2016) discussed the need for faculty to develop the necessary skills to transition from F2F teaching to online instruction and pay specific attention to building relationships and rapport between the teacher and the student as one of the most critical components to a positive learning environment. Simpson (2008) called this teaching style "coaching methodology" and explained the need to proactively motivate students and create lesson plans focusing on the individual with interactive and motivational lesson plan design (p. 160). Guan and Stanford (2016) supported a program change in which faculty focuses on enhancing coaching pedagogy and explained that this type of teaching reinforces motivational support theory due to the primary concern of education as a supportive role requiring additional coaching (p. 68).

Often faculty members become the conduit for developing the connection between students and the campus and must allow for both communication and independent online profiles to connect the two when F2F learning does not occur (Lehman & Conceição, 2014). The students' first "link to a university" is the faculty member assigned to instruct the online course, allowing students to feel connected to the university from the other side of the screen in an online learning environment (Rehn et al., 2016). Faculty must learn to utilize technology to create an online classroom driven by consistent, relevant, and varied interaction methods, as well as content with purposeful attention to additional motivation and guidance for student learning (Lehman & Conceição, 2014; Moore & Kearsley, 2012).

At the most basic level, when looking to study equity in education, the "how" is as important as the "what" is taught in the classroom (Campbell & Storo, 1996). While this concept is more than two decades old, the premise still needs adjustment. Historically speaking, the systematic approach to instructing all students created an unfair and uncomfortable learning space for some students, resulting in inequity (Campbell & Storo, 1996). To combat this inequity, Lucas et al. (2020) claimed that identifying the inequities in an online learning space is equally a challenge for instructors as is providing learning instruction (Lucas et al., 2020). Instructors must look at their practice and pedagogy, identify student challenges, and work to reach all students equally, given the many challenges facing online instruction (Lucas et al., 2020).

Over the last two decades, distance learning and educational equity have aligned to contest what access in higher education truly means and continued to progress towards providing underserved students with increased access to learning. As higher education looks to evolve with technology and break down learning barriers online, citing "access" to provide equal learning opportunities to all students is no longer considered an option. As online education continued to be accepted into the mainstream of higher education, unfortunately, learning proper distance learning pedagogy techniques was not mandated in most circumstances. This left classroom instructors and content-specific lecturers uncomfortable and insufferable throughout learning online teaching on the go (Campbell & Storo, 1996; Lehman & Conceição, 2014).

To be clear, it is the professional responsibility of the instructor to create an environment of inclusion for all students (Guan & Stanford, 2016). One of the most crucial components of instructing in an online setting is to allow students to see what the instructor is doing so they feel they are participating in the process and are connecting to the learning and instruction (Evans,

2020). The instructor must develop several mediums for interaction, create a learning environment stressing equity, use online pedagogy concentrating on the individual learner and humanizing them, and utilize their unique learning skills to motivate learning. Instructor pedagogy must be intentional and not create barriers to learning, which may have an unintended consequence of lower success and lead to students' potential problematic online course success (Lehman & Conceição, 2014). In addition, the lack of teacher visibility in an online course may significantly influence student success and in turn, completion of a teacher education preparatory program.

At times, distance learning courses will highlight students' academic challenges as reasons for struggle or dropping courses in previous academic settings. A lack of connection, negative social interactions, motivation, and interest in the content have been shown through research to be causes of student failures, which must be addressed by faculty teaching online courses (Campbell & Storo, 1996; Lehman & Conceição, 2014). The ability to adjust teaching strategies to develop intentional student learning and understand appropriate teaching methods falls on the instructor (Guan & Stanford, 2016). Furthermore, utilizing online teaching pedagogy techniques designed to promote instructor-learner interactions elicits a high degree of instructor activity and availability, positively influencing student interest and learning success, especially in an online setting (Lehman & Conceição, 2014).

Supporting these notions, through research completed in 2009 and again in 2014, 60-64% of faculty who taught online courses wanted additional online education professional development opportunities (Guan & Stanford, 2016; Ray, 2009). These teachers cited the lack of connection to students and a lack of understanding of the potential technology utilized for best practices (Guan & Stanford, 2016; Ray, 2009). In addition, program development over the last

decade has found that the best way for instructors to learn proper techniques to instruct online is to experience online education from the student perspective. Most universities did not enforce this notion and, in truth, even considered creating professional development opportunities in this area at many universities. For example, programs developed at DePaul University (2009), the University of Central Florida (2009), and the University of Louisiana Lafayette (2014) all required instructors to participate online in the learning platform as a student. The focus of these programs was to allow instructors to learn how to navigate the course as a student and use various system communication methods to develop further empathy for the students who have enrolled in their classes (Guan & Stanford, 2016; Ray, 2009). These programs are several examples of how genuine professional development opportunities focusing on student needs help faculty to identify the origin of a significant online inequity and to develop an effective learning environment. In 2020, Lucas et al. found that almost 80% of instructors believed that the curriculum was lacking in transferring classroom pedagogy to the online environment. Through conscious awareness of learning needs, faculty began to understand such concepts as cultural awareness and neutrality, the extent to which text-based communication could hinder learners, and how harmful microaggressions could all impact learning and create student lack of motivation leading to dropping out (Campbell & Storo, 1996; Garrison, 2017; Lehman & Conceição, 2014). Specifically, these learning environments did not promote learning success in underrepresented groups, as students may have enrolled in classes without a solid academic background. These environments would further enhance inequity in students (Garrison, 2017).

If the goal of education is to create a personal learning experience, the instructor's primary role is to develop positive teaching practices to support an equitable learning space (Guan & Stanford, 2016). Faculty who teach online education courses must clearly understand

both the goal of the course, as well as understand the needs of the students who are enrolled in the course. The educational experience has two main focal points: 1) to construct personal meaning through a reconstruction of experience, and 2) refine meaning and confirm understanding collaboratively within a community of leaders (Garrison, 2017). The course instructor must ensure this is completed for all students by developing an intentional medium for learning and positive communication (Lehman & Conceição, 2014; Moore & Kearsley, 2012, Garrison, 2017). A faculty member's role is to create and shape a learning environment that is pedagogically linked with the course and define expectations through several communication mediums. Much like when enrolled in a traditional F2F course, new technology continues to create sustainable cognitive and social conditions, but cultural awareness and equitable learning potential are still the instructor's responsibility (Garrison, 2017; King & Alperstein, 2018). Again, education is a fundamentally interactive and transactional process for each student (M. Moore, 1993; Moore & Kearsley, 2012; Picciano, 2017). However, how these learning transactions are represented to students acknowledging individual learning, humanizing students, and developing equitable practices within a classroom are primary concerns of the online instructor.

Program Development

As a higher number of students seek entrance into online programs and courses to combat heavy schedules, including work demands, family life, personal life, study responsibilities, and cost, higher education institutions keep developing online education programs as a way to exhibit an understanding of student needs (Miller et al., 2014). Several potential areas of interest for discussion and further study would be to consider how online course creation can be positively or negatively utilized as an option for student enrollment management. As an example, a case

study methodology approach may be considered for a research study to determine if equity exists in learning throughout a program.

As outlined in Chapters 1 and 2, the Five Pillars of Quality Online Education were developed to emphasize the quality of online education (Miller et al., 2014). While all pillars focus on quality online education, student success is highlighted in the "student satisfaction" pillar (Miller et al., 2014, p. 9). The Sloan pillars measure student satisfaction based on several factors: student satisfaction with their experiences in learning online, including interactions with instructors and peers, learning outcomes that match expectations, services and orientation, timely faculty/learner interaction, and adequate and fair systems to assess course learning objectives (Miller et al., 2014). It would be imperative to consider the pillars when discussing program redesign to ensure that the quality of the teaching and course design equals what students experience in the face-to-face courses. Additionally, drawing connections to Moore's theory concerning a more robust understanding of students' learning experience related to transactional distance would provide a second pathway to redesign considerations. When combined, these two reference points may deliver more intentionality to course or program design, using proven theories to provide students with the best possible pathway to success.

When developing a curriculum for online education success, program leaders may consider Garrison, Anderson, and Archer's Community of Inquiry (CoI) theory of instruction for understanding interactions related to learning. Much like Moore's method of transactional distance learning discussed earlier in this study, a CoI looks to blend a combination of three distinct presences: cognitive, social, and teaching (Garrison et al., 1999). In further detail, CoI aims to integrate active learning environments or communities dependent on instructor and student sharing ideas, information, and opinions. Moreover, these interactions are aligned with

what is known as presence, which is explained as a social phenomenon created through interactions between instructor and student (Garrison et al., 1999). Considering how teacher presence and interaction affect student satisfaction, it is essential to recognize the need for students to feel part of the learning environment as a contributor, not just as observers in a learning space viewing content via text. Instructors are charged with creating a learning environment built on student expectations, which include consistency, variety, relevance, and content designed to engage learning from students (Lehman & Conceição, 2014; Miller et al., 2014).

According to statistics from Classes and Career (2018) regarding online education, 31% of all college students in 2017 enrolled in at least part of their coursework online, either in full or partial program requirements. Of this 31% of online student enrollment, 15% of students were enrolled in 100% online classes, representing a continuously increasing number over the last ten years. More significantly, online education enrollment experienced a growth of 17% from 2012- to 2016, marking the highest enrollment climb in higher education (Classes and Career, 2018). With enrollment continuing to climb, the attention to online education shifts from access to quality concerning student satisfaction, student learning, and student motivations in online education courses. Student motivation is a leading factor in online education due to the nature of classroom learning anywhere, anytime. Students need to construct intrinsic motivations developed over time to achieve their success goals while taking ownership of learning outcomes (Moore & Kearsley, 2005, 2012).

Research completed by Flores (2016) explained how in successful online learning, or e-learning, the environment can be measured by student satisfaction of the course based on content and quality and is reflective of a student's sense of achievement. These feelings are based on a

student's self-efficacy and self-regulation in an online course and expectations of course structure and self-achievement (Flores, 2016). Lehman & Conceição (2014) also identified strategies that help student motivation and success, including "self-awareness, self-efficacy, a purpose or goal, the desire to achieve learning goals, and achievement recognition as motivating factor" (pp. 38-39). The overall understanding is garnered in research on student success in online courses. Students must be present, have positive interactions, allow learning to take place at their own pace, and receive feedback from the instructor.

When delving into student dissatisfaction and how students understand barriers to online success in coursework, students often cite a sense of isolation, technology failures, lack of instructor participation and feedback as the top reasons students do not continue in an online program (Lehman & Conceição, 2014). Online learning requires different cognitive and affective motivations for successful completion. Cognitive efforts involve a student's mental learning process while the affective efforts focus on the psychological and emotional process students must actively self-motivate for learning success (Lehman & Conceição, 2014). While isolated from peers and instructors, students must adapt to using different strategies for success and often focus on their online presence and communication integrated into the classroom by the instructor's ability to teach online. These factors enable a student to design a student presence online, allowing ownership to occur to a student's course presence (Guan & Stanford, 2016). In most cases, a student's feeling of isolation is based on a lack of instructor teaching strategies to both engage students in active learning and communication, as well as the instructors' lack of awareness of online teaching pedagogy as being different than F2F learning (Flores, 2016; Lehman & Conceição, 2014). Additionally, students from unrepresented groups often identify a

lack of technology skills and understanding of online learning platforms as barriers to online learning success (Flores, 2016).

On the topic of program development, an opportunity exists to complete research that asks students to identify reasons for enrolling in one particular course modality instead of the other. It would be interesting to provide background for these conversations that explain the information gathered in this study, that outline data that demonstrates possible connections to lower student success rates and potential higher dropout rates, and that ask students to provide context for their decisions. If the university is concerned with discovering ways to promote online course enrollment as an equal opportunity to complete a course needed within a program, information from this study may provide a context for students who wish to make decisions related to their course success. Frequently, students are not aware of their individual learning strengths and weaknesses that promote success or negatively impact their ability to succeed. With the information provided from this study, students can be made aware of options with examples of student success and then make an informed decision. Such a case study could ask students about their decision and reasons for enrolling in one of the two course modalities when provided this information to detail their decisions with context and reason. This would allow for a deeper understanding of a specific course interest level, regardless of student success rates. A study with that focus may shed light on student interest in a class pertaining to time management, course time offering, learning strengths, online student identity, or even self-motivation strengths (Lehman & Conceição, 2014).

The best way to combat these barriers is to develop an online education system that identifies student background, educational competencies, and student ability, plus grasps how to utilize a student's life experiences to develop online learning platforms and instruction

successfully. By creating a system that promotes success and establishes a way to circumvent the lack of motivation or interaction that often leads to failure, the system can develop the resources to encourage healthy interactions and support student success. Using an anti-deficit mindset to reframe program development and promote student strengths is a challenge for higher education. In focusing more specifically on the plight of Black males in online education, a program that delivers equitable access to online learning must take aggressive steps to ensure learning reaches the individual student, promoting learning through student motivations and interest (Bambara et al., 2009; Salvo, 2017).

Summary and Conclusion

Higher education is not immune to adapting to student interests to aid in enrollment opportunities, but it often takes a long period of time to do so. Online education is no longer considered "the future of education" but has joined the present framework of the academic landscape. Online courses, teacher pedagogy strategies, course development, and program design must continue to progress, offering all students the opportunity to learn "anytime, anywhere, and in any environment" (Moore & Kearsley, 2012; Picciano, 2017). When constructing online education courses, continued innovation will further push new technologies and change the learning process. These efforts will continue to shift higher education's trend of enrollment decrease as students find positive reasons to align their needs to enrollment in distance learning courses (Duffin 2020). There is now a paradigm shift in the teaching and learning processes, and it is this generation's responsibility to understand it in order to shape a better future for the upcoming generations (Bozkurt & Hilbelink, 2019).

With higher education enrollment on the decline, online education could be the solution to encourage more students to pursue their post-secondary studies. After all, even though the overall enrollment rates dropped in the past years, patronage of online courses grew (Lederman, 2018). This idea suggests that if students are provided with the chance to complete their courses online and be successful, many are likely to take the opportunity. Such alternative options could provide substantial benefits to all stakeholders involved, provide additional support, see an increase in student success, and gain enrollment for programs. Ultimately, breaking down learning barriers to promote student success is the goal. With an outlined set of statistical data to support the existence of a gap in online course success, adjusting the attention to shifting the mindset in order to focus on what students need to be successful may provide countless positive dividends to students, programs, institutions, and in this case, a growing workforce shortage.

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