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Course Modality and Dialogue as Predictors of Postsecondary Student Success in Online Programs

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Walden University
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Abstract

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

There is a growing demand for online education; however, online programs yield consistently lower student retention rates and student success. Students in online programs are typically nontraditional students from underrepresented populations in higher education. The purpose of this nonexperimental quantitative study was to determine whether dialogue (learner–learner, learner–instructor, and learner–content interactions) and course modality (traditional online and competency-based education [CBE] online) predicted student success (final course grade). Moore's model of transactional distance served as the theoretical framework for this study, specifically the dialogue component. Participants were 127 online higher education students who took (successfully or unsuccessfully) a traditional online course or CBE online course within the last 6 months. Participants completed a demographic survey and the Distance Education Learning Environment Survey. Ordinal logistic regression was used to analyze data. Results indicated that learner–instructor interactions were a significant predictor of student success. Course modality was not a significant predictor. Although not significant, learner–learner interactions were a marginal predictor of student success. Results may be used to inform positive social change through program and course development to increase the likelihood of success for traditionally underrepresented populations.

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Dedication

This dissertation is dedicated to my dad, Brock McClanahan. Although he is no longer with us, I know that he would have been one of my greatest supporters and extremely proud of this accomplishment.

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I would like to thank my husband, Jimmy Lawson; my daughters, Brianna, Amalia, and Remi; and my mother, Nancy, for their unwavering love and support. Thank you, Elicia, my residency partner and moral support. I would also like to thank my committee, Steven Linnville and Kimberly Rynearson, for their guidance and support throughout this process.

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Chapter 1: Introduction to the Study

Online education provides an academic opportunity for underserved and nontraditional higher education students. This may explain the vast expansion and growing demand for online programs. Although the demand for online programs in higher education continues to grow, academic institutions are faced with consistently higher attrition rates in online programs, as compared to their traditional face-to-face counterparts (Croxton, 2014). Despite lower student success, many students are drawn to online options. Although online programs offer increased flexibility for students, there are additional options that offer more even more flexibility, as well as an individualized academic experience. Competency-based education (CBE) is an online educational paradigm that is gaining significant momentum in higher education. CBE programs allow students to progress at their own pace and are developed to meet the individual needs of the student. CBE course completion is contingent upon demonstrating competency, as opposed to the traditional seat-time standard for credit hours.

The current study addressed the history of CBE and its modalities. I reviewed the current literature on CBE, highlighting the gaps. Although research had been conducted on CBE, less attention had been paid to the aspects of CBE that influence student success, such as the degree of dialogue and student demographics. The literature was also lacking in the examination of how CBE outcomes and student demographics compare to traditional online courses. This study addressed whether course modality (CBE online or traditional online) and dialogue (learner–learner, learner–instructor, and learner–content) predict student success. Moore's (1997) theory of transactional distance, specifically the

concept of dialogue, served as the theoretical foundation for this quantitative analysis of CBE. Moore defined dialogue as learner–learner, learner–instructor, and learner–content interactions. The Distance Education Learning Environment Survey (DELES) was used to assess student perceptions of dialogue within both traditional online courses and CBE courses (see Walker, 2003). The goal of the current study was to contribute to the literature that informs course development and institutional policy in efforts to increase student success in underrepresented student populations.

Background

Distance education dates back to 1840, when Isaac Newton began teaching via mail correspondence (Kentnor, 2015). With the technological advancements of radio and television, distance education continued to adapt and grow. However, the emergence of the internet in the 1980s had a monumental impact on distance education (Kentnor, 2015). By 1998, there was significant growth of online programs in nonprofit educational institutions (Arenson, 1998). Today, nearly 30% of students enrolled in a degree-granting postsecondary institution are enrolled in online courses (National Center for Education Statistics [NCES], 2018). Online learning is currently the fasted growing sector in higher education (Wengrowicz et al., 2018). Online education provides flexibility for students who may not otherwise have the ability to enroll in college courses. The typically asynchronous design in online education allows students to complete work at a time that is most convenient for them, without having to physically attend a class. This flexibility caters to those with other time-consuming life obligations (work, parenting) or limitations (geographical distance, physical limitations). The inherent flexibility of online education

has influenced its growing demand and enrollment. It is estimated that 1 in 4 college students choose to take at least one of their classes online (Allen & Seaman, 2017).

The rapid growth and demand for online education have influenced the growth of CBE. CBE dates back to the early 19th century and the acceleration movement (Gallagher, 2014). There was a reemergence of CBE approaches in the 1960s and 1970s (Gallagher, 2014). In 1968, the U.S. Office of Education provided funding for 10 colleges and universities to develop a competency-based training program for elementary school teachers (Nodine, 2016). Then, in the 1970s, the U.S. Department of Education issued the Fund for the Improvement of Postsecondary Education, which prompted the expansion of CBE-based programs (Gallagher, 2014). The U.S. Department of Education (2018) reported that there are over 600 postsecondary institutions that are designing or implementing CBE programs. CBE courses are anticipated to continue to grow (Nodine, 2016). This was evidenced by the U.S. Department of Education publicly inviting colleges and universities to apply for funding for CBE-based programs (Gallagher, 2014).

There are varying modalities for the implementation of CBE. Although traditional courses in higher education focus on seat time, CBE-based programs focus on competency or performance. Supporters of the CBE model argued that it offers “hyper-individualization,” a self-paced curriculum, and promises to save students money and time (Gallagher, 2014). Additionally, advocates argued that CBE programs personalize education and provide more opportunities for traditionally excluded groups (Gallagher, 2014). However, one of the criticisms of the CBE approach has been that there is an

overemphasis on individualization and a de-emphasis on social interaction (Gallagher, 2014).

It has been widely accepted that learner–learner, learner–instructor, and learner–content interactions play a vital role in learning (Lave & Wenger, 1991; Merriam et al., 2006; Vygotsky, 1986; Zimmerman, 2012). Bettinger et al. (2016) found that when online students who are less likely to engage in discussion are exposed to more interactive peers, they have a higher likelihood of passing the course, showing an improvement in grades, and having higher semester-to-semester persistence rates. Sung and Mayer (2012) demonstrated the importance of social presence and social interaction in online education by identifying five effective factors that have an impact on student perception of social presence: social respect, social sharing, open mind, social identity, and intimacy. Furthermore, T. Anderson (2003) examined the epistemological assumption about the role of human interaction within the realm of education and argued that social integration should be integrated within instructional design. Finally, O'Rielly and Newton (2002) found that students valued their interactions with peers as one of the most vital components of their education.

Results from the current study may help to fill a gap in the literature by addressing course modality and dialogue as possible factors that impact student success in online programs. Results may also help to fill a gap by comparing student success in traditional online programs and CBE online programs. This study was needed to identify factors that impact student success in online education, and thereby increase the likelihood of success in underrepresented student populations.

Problem Statement

The evolution and advancement of modern technology have dramatically influenced higher education. Students who were previously unable to enroll due to geographical distance, conflicting responsibilities, or schedule inflexibility are now afforded opportunities through the expansion of online education. Enrollment in online higher education courses continues to grow steadily and consistently (NCES, 2018). Despite the steady growth, attrition rates in online courses are consistently higher than in face-to-face courses (Peck et al., 2018; Radovan, 2019). For instance, online students are significantly less likely to complete their courses compared to students enrolled in traditional face-to-face courses (Wolff et al., 2014). Additionally, students who enroll in online programs are typically from underrepresented populations. In the 2015–2016 school year, the average student in a fully online program was a woman who was Black, 30 years of age or older, attending part-time, employed, independent with dependents, and married (NCES, 2018). All students should have an equal likelihood of educational success. To provide equal opportunity for student success, there must first be an understanding of reasons why there is lower student success in online courses. The purpose of the current study was to determine whether dialogue (learner–learner, learner–instructor, and learner–content interactions) and course modality (traditional online and CBE online) predict student retention (final course grade). Studies had been conducted to examine risk factors, protective factors, and reasons for the disparity in retention rates of online versus traditional students. Much of the research about online attrition focused on student variables: the number of prior class withdrawals, grade point average (GPA;

Bloemer et al., 2018), self-efficacy (Bradley et al., 2017), self-regulatory skills (Bradley et al., 2017; Peck et al., 2018), age, use of financial aid (Cipher et al., 2017), employment, intrinsic motivation, intent to finish a degree, help-seeking attitudes, general stress, workload (Brubacher & Silinda, 2019), and subject-specific proficiencies (Wolff et al., 2014). Some researchers have taken the approach of examining instructional techniques and variables specific to online education: preparing instructors to teach in an online environment (Matthias et al., 2019), the use of student-preferred instructional strategies (Watson et al., 2017), and the correct use of technologies (Chang & Hannafin, 2015). The current study addressed a gap in the literature by addressing course modality and dialogue as potential factors that impact retention.

Researchers have also examined solutions to online attrition. Some of these empirically based solutions have included identification of at-risk students (Brubacher & Silinda, 2019), investment in faculty and staff development, careful selection of instructors to teach first-year classes (Simplicio, 2019; Tinto, 2006), new student orientation programs (Robichaud, 2016), assessing readiness for online instruction (Simplicio, 2019; Wladis et al., 2016), scheduled student–instructor contact times, strong campus support (Simplicio, 2019), and academic coaching (Lehan et al., 2018). Most of the proposed solutions for decreasing attrition rates in online courses did not focus on instructional design. There are innovative instructional modalities that should be explored as potential solutions to online attrition, such as CBE. The current study filled a gap in the literature by addressing whether CBE is a potential factor for increasing online student retention. I also examined the role of dialogue in online retention.

CBE is an innovative approach to improving student outcomes and student satisfaction in higher education. Four components of CBE separate it from traditional education: flexibility, customization, mastery, and transparency (Hilliard et al., 2018). CBE is flexible in terms of providing learner-paced coursework (Hilliard et al., 2018). Students can customize their learning experience by tailoring content to meet individual interests, preferred learning styles, and credentialing requirements (Hilliard et al., 2018). As opposed to the traditional seat-time standard, CBE students are required to demonstrate mastery of content (Hilliard et al., 2018). Lastly, CBE provides transparency by providing students with clear connections between learning goals and career alignment (Hilliard et al., 2018).

Studies have been conducted to evaluate the efficacy of CBE courses. Krause et al. (2015) compared traditional online courses to CBE online courses and found that the following variables were important indicators of success: quality and relevance of resources, providing increased support and ongoing feedback, and offering opportunities for students to practice what they have learned. Some studies have focused on specific outcomes such as critical thinking skills (Mayeshiba et al., 2018) while other studies have focused on evaluating and comparing specific programs that are using different CBE models (Grann, 2017; Klein-Collins, 2012; Marcus, 2017). Hilliard et al. (2018) identified four main issues with CBE: Flexible pacing can stall progress for some learners, online delivery models have weak outcomes for unprepared learners, assessment creates a high-risk environment that can create test anxiety for some learners, and competencies align to future employment. Additionally, some studies focused on the

establishment and application of specific competencies (Gruppen et al., 2016). However, there was a gap in the literature regarding the comparison of student retention in traditional online courses versus online CBE courses (Gallagher, 2014).

Purpose of the Study

The purpose of this nonexperimental quantitative study was to determine whether course modality (traditional online and CBE online) and dialogue (learner–learner, learner–instructor, and learner–content) predict student success (final course grade). Participants identified as previously (within the last 6 months) or currently enrolled in a traditional online program or a CBE online program in the demographic survey. Dialogue (learner–learner, learner–instructor, and learner–content) was measured using the DELES, which provided a numerical subscore for each form of dialogue. These subscores were continuous interval variables. The dependent/outcome variable was student success. Student success was based on a 4-point grading scale; therefore, it was a continuous variable, but this outcome measure was later changed into a categorical variable. Demographic data were collected and compared between traditional online students and CBE online students using descriptive statistics. The questions in the demographic survey were based on the current literature. Demographic data included the following: information about the current or most recent course, current academic performance, gender, race, ethnicity, age, military experience, financial aid, previous college experience/performance, relationships, employment/professional experience, and basis for choosing program (CBE versus traditional).

Research Questions and Hypotheses

The key research question (RQ) in this study concerned whether online course modality type (traditional online versus CBE online) and dialogue (learner–learner, learner–instructor, and learner–content interaction) predict student success.

H_0: Online course modality and dialogue do not predict student success.

H_1: Online course modality and dialogue predict student success.

More specifically, the RQs and hypotheses were the following:

RQ1: Is online course modality (traditional online or CBE online) a significant predictor of student success?

H_{01}: Course modality (traditional online or CBE online) is not a significant predictor of student success.

H_{a1}: Course modality (traditional online or CBE online) is a significant predictor of student success.

RQ2: Is dialogue (learner–learner interaction) a significant predictor of student success?

H_{02}: Dialogue (learner–learner interaction) is not a significant predictor of student success.

H_{a2}: Dialogue (learner–learner interaction) is a significant predictor of student success.

RQ3: Is dialogue (learner–instructor interaction) a significant predictor of student success?

H_{03}: Dialogue (learner–instructor interaction) is not a significant predictor of student success.

H_{a3}: Dialogue (learner–instructor interaction) is a significant predictor of student success.

RQ4: Is dialogue (learner–content interaction) a significant predictor of student success?

H_{04}: Dialogue (learner–content interaction) is not a significant predictor of student success.

H_4: Dialogue (learner–content interaction) is a significant predictor of student success.

Research Questions 1–4 were analyzed using ordinal logistic regression. The initial plan for statistical analysis was to use a multiple linear regression to control for confounding variables. The survey used to collect data was formatted to collect multiple choice responses, as opposed to filling in a response. The outcome variable (GPA) was then categorized into five categories: (a) 4.0 or higher, (b) 3.0–3.99, (c) 2.0–2.99, (c) 1.0–1.99, and (e) less than 1.0. This change switched the outcome variable from a continuous variable to a categorical variable, requiring a shift in data analysis from a multiple linear regression to an ordinal logistic regression. The purpose of ordinal logistic regression is to predict the value of a categorical outcome variable based on predictor variables. In this study, student success (i.e., categorized GPA) as the outcome variable value was determined by whether online course modality (traditional online versus CBE online) and online dialogue (learner–learner, learner–instructor, learner–content) for the course were

predictive of student success. A G* power analysis indicated a minimum sample size of 100 was needed to reach statistical power of .80, a small effect size (odds ratio < 1.5 or Cohen's *d* of < .2 equivalent) with a statistical significance probability of less than .05.

Demographic information was collected for purposes of providing descriptive statistics (means and standard deviations) and identifying potential confounding variables. One demographic variable identified as being potentially a confounding variable was financial aid. That is, there was a high probability that participants could have received financial aid, based on data from the NCES (2018). Dropping a course or withdrawing from a course can lead to various negative consequences for those using financial aid. Therefore, the ramifications of dropping a course could influence a student's decision whether to do so. Other demographic information was also collected. If any other variables appeared to be confounding (i.e., through a series of Pearson correlations of the potential confounds and the outcome variable to determine any significant correlations), then they were also planned to be included as controlling variables in the statistical analysis. If the controlled variables were statistically significant, a post hoc analysis of that segment of the data was planned using multiple linear regression to determine its impact on the outcome variable.

Theoretical Framework

In the theory of transactional distance, Moore's (1997) argued that there is not only a geographical distance that exists between learners and instructors, but also a psychological distance. According to Moore, there are three components of transactional distance: dialogue, structure, and autonomy. Moore further explained dialogue as two-

way communication and interaction that occurs in the online learning process. Moore identified three components of dialogue: learner–learner, learner–instructor, and learner–content interactions. The current study's goal was to examine the role of dialogue (learner–learner, learner–instructor, and learner–content interactions) in student success.

Nature of the Study

The purpose of this study was to determine whether online course modality (traditional online or CBE online) predict student success. The purpose was also determined whether dialogue (learner–learner, learner–instructor, and learner–content interaction) predict student success.

Data were collected from students in both traditional online courses and those in CBE online courses. The nature of the study was quantitative with a nonexperimental design. This design allowed for statistical comparison of two preexisting groups: traditional online and CBE online students. Student success was measured using the final course grade (0.0–4.0). The first independent or predictor variable was course modality (traditional, CBE). Participants self-identified in the demographic survey as being a traditional online student or a CBE online student (having completed a course, successfully or unsuccessfully, within the last 6 months). The second independent or predictor variable was dialogue (learner–learner, learner–instructor, learner–content interactions). Dialogue was measured using the DELES because this instrument provides separate numerical scores for each type of dialogue: learner–learner, learner–instructor, and learner–content interactions. Participants were given information about the purpose

of the study, confidentiality, expectations for participation, the voluntary nature of the study, and contact information for Walden University and for me.

Definition of Terms

The following terms and parameters are defined as used in the study:

Asynchronous learning: Learning that occurs online and where students perform work independently without immediate feedback or live interactions with others. The learner and the instructor are not interacting at the same time or in the same place.

Competency-based education (CBE): A course in higher education that meets the following criteria: exclusively online, student paced, course completion within 6 months, and competency assessments to demonstrate mastery.

Higher education: Coursework completed after completing high school at a college or university.

Student success: The final course grade based on a 4-point scale.

Traditional online course: A course in higher education that is held exclusively online.

Assumptions

There were several assumptions in this study. One assumption was that the DELES accurately and effectively measures the three components of Moore's (1997) dialogue construct: learner–learner interaction, learner–teacher interaction, and learner–content interaction. There was also an assumption that students who did not pass their most recently completed course are equally as likely to participate in the study. I also assumed that each student was enrolled with the intention of completing necessary

competencies and/or requirements within the required time frame. Another assumption was that the student participants honestly and accurately reported information.

There was also the assumption that one or more demographic variables could be confounding. For example, based on national averages (Hanson, 2021), nearly 85% of college students receive financial aid. To continue to receive aid, a student must complete the course; whether the individual passed or failed the course impacts GPA and student success. Therefore, financial aid was considered a confounding variable and one to control in the analyses. However, if any other demographic variable (e.g., age, gender) appeared to be confounding through data trends, they too also included as a controlling variable in the statistical analysis. If a controlling variable was significant, a post hoc analysis was planned for that variable to determine whether the set of predictors for this subset was different from the pool of participants.

Had multiple linear regression been used, there was an assumption that variables were normally distributed and free of outliers. There needed to be a normal distribution of scores. If there were outliers, data entry error could be assessed. If the error was not due to data entry, data cleaning could be used (see Tabachnick & Fidell, 2000). According to Osborne (2001), the removal of outliers can reduce the probability of Type I and Type II errors. Second, there was an assumption of a linear relationship between the dependent variable and the independent variable. When plotting the data on a scatterplot, the line of best fit should have represented all data points. If the relationships were not linear, regression results could underestimate the relationship (Osborne & Waters, 2002). Nonlinearity must be accounted for. Third, there was an assumption that the variables

were reliable measures without error. The testing instrument used for this study had been vetted by other researchers. Walker and Fraser (2005) tested the DELES on 680 online students. They reported alpha reliability coefficients that ranged from 0.75 to 0.94. which meant that the measure was reliable or that there was internal consistency. Fourth, there was an assumption of no multicollinearity. When there is multicollinearity, there are two or more predictor variables that are strongly correlated with each other, and the effect of the individual predictor variable cannot be separated from the other. Finally, there was an assumption of homoscedasticity, that variance in errors is the same across all predictor variables. This means that the level of error or variance is constant and that it does not change in response to changes in the predictor variables. Heteroscedasticity can be reduced with transformation of variables (Osborne & Waters, 2002).

Because of a needed change in the type of regression analysis due to a change in the outcome variable from continuous to categorical, there were four assumptions that needed testing in the use of ordinal logistic regression. The first assumption was the dependent or outcome variable was ordered. The second assumption was that the independent or predictor variables were continuous, categorical, or ordinal. The third assumption was that the relationship between the predictor variables was the same across all combinations involving the outcome variable. This is known as the proportional odds, which means the odds ratios must be the same across all categories in these relationships. Finally, I assumed that two or more predictors were not highly correlated to one another, which is the assumption of no multicollinearity. Each of these assumptions was tested, and results are presented in Chapter 4.

Scope and Delimitations

I aimed to determine whether online course modality (traditional online or CBE online) predicts student success (final course grade). I also aimed to determine whether dialogue (learner–learner, learner–instructor, and learner–content interaction) predicts student success (final course grade). The population parameters included any online student over the age of 18 years who had completed a traditional online or CBE online course (successfully or unsuccessfully). The recruitment plan allowed for a diverse group of students. Participation in the study was not limited to any school or geographical region, thereby increasing the likelihood of a diverse population. A diverse population allowed for increased generalizability, thereby increasing external validity. Threats to internal validity that were relevant to this study may have resulted from lack of experimental manipulation, lack of random assignment, and lack of randomization. Random assignment was not possible because the group assignment was preestablished. Participants were either traditional online students or CBE online students. I limited participation to students over the age of 18 due to differences in academic preferences that are due to cognitive and developmental differences (see Boccia et al., 2019). Some aspects of the study that may have increased internal validity were the inherently low risk of attrition or room for experimenter bias. Participation required a one-time submission of the demographic survey and DELES, which were submitted together. There was no risk for attrition. Experimenter bias was eliminated with anonymous submission.

Limitations

A potential challenge was the possibility of a lower response rate from students who did not pass their course. Also, traditional online programs are more common than CBE programs; therefore, there was a chance that recruitment might result in a higher proportion of traditional online students. Another potential limitation was that financial aid could be a confounding variable. Students who receive federal aid, grants, and/or scholarships could be compelled to remain enrolled in a course to avoid the responsibility of paying back any money received, as opposed to dropping or withdrawing from the course. These potentially negative outcomes could influence a student's decision to complete a course. For this reason, financial aid was controlled for in the statistical analyses. In addition to financial aid, other demographic information was collected. If any of these variables appeared to be confounding variables, statistical analysis was planned to determine whether they were significant controlling variables. Chen and Hossler (2017) found that financial aid reduced dropout rates but was not a significant motivator for timely degree completion. In a more recent study, Pretlow et al. (2020) examined persistence, attainment, withdrawal, and transfer rates for first-time postsecondary students. This study incorporated a wide range of variables.

Significance of the Study

This study contributed to the literature, and may inform policy to increase online student success. The study may also be used to provide nontraditional, underrepresented higher education students with a higher likelihood of success. Through the examination of variables that can impact student success, such as dialogue and course modality,

instructors will have information that can be used to improve course format and delivery. These improvements could boost the success of online students in their academic pursuits, specifically nontraditional and underrepresented students. Additionally, in light of the COVID-19 pandemic, most higher education students are being forced to adapt to online learning (Torun, 2020). The results of the current study could contribute to the literature that informs online instruction.

CBE provides educational flexibility by offering a student-paced environment in which demonstrated competency is valued over the traditional seat-time requirement. There is empirical support for the efficacy of CBE programs (Marcus, 2017; Mayeshiba et al., 2018). For instance, Marcus (2017) reported that a higher proportion of graduates of a CBE program report that what they learned prepared them for life, as compared to those in a traditional course format. Marcus also found that a higher percentage of graduates from a CBE program reported that what they had learned applied directly to their work. Furthermore, results indicated that 99%–100% of employers of CBE graduates reported that CBE graduates met or exceeded job expectations and that they were prepared for their jobs. Results also indicated that CBE graduates had a higher success rate on teacher certification exams and professional licensing exams. Another study addressed critical thinking skills in CBE students as compared to traditional students. Results indicated that CBE students scored significantly higher on measures of critical thinking (Mayeshiba et al., 2018).

Implementation of CBE programs in higher education is influenced by external factors such as the U.S. Department of Education Title IV financial aid funding approval,

legislative policies enacted by the Education Commission of the States, and accrediting institutions (L. Anderson, 2018). External validation and approval by these agencies are required for degrees from higher education institutions to be recognized and applicable for licensing and occupational purposes. Additionally, approval by the U.S. Department of Education allows students to apply for federal financial aid. Despite the bureaucratic obstacles in the institutional implementation of CBE programs, CBE is one of the fastest growing areas in online education (Krause et al., 2015). Online education is growing at an exponential rate (Allen & Seaman, 2017; NCES, 2018). Although enrollment in online education continues to increase, attrition rates in online programs are consistently higher than in traditional face-to-face courses (Peck et al., 2018; Radovan, 2019). As colleges and universities continue to enroll students in their online programs, there is an institutional responsibility to identify strategies to reduce attrition in online programs.

One vital component of retention is the integration of dialogue embedded within course design (T. Anderson, 2003; O'Rielly & Newton, 2002; Sung & Mayer, 2012). The present study focused on a rapidly growing demand in higher education (online CBE programs) and the integration of dialogue as a potential strategy for improving student success in online programs. Results from this study contributed to the literature that informs the institutional implementation of online CBE programs. Results may help to inform the instructional design of online CBE courses.

Summary

Chapter 1 provided an overview of the history and steady growth of online education. The problem of lower student success in online programs was examined. CBE

was introduced as a form of online education that is potentially a solution for improving these negative outcomes in online programs. The various modalities of CBE were explained. Chapter 1 also provided an overview of the literature that addressed risk factors and protective factors for student success in online programs. The theoretical foundation for the study was introduced: Moore's (1997) theory of transactional distance, specifically the dialogue construct. The importance of dialogue within education was examined. Additionally, the nature of the study, definitions of terms, assumptions, scope, delimitations, and limitations were also addressed. Lastly, the significance of the study was provided: to increase student success within online higher education.

Chapter 2: Literature Review

Although enrollment in online higher education courses continues to steadily increase (NCES, 2018), colleges and universities are faced with consistently higher attrition rates in these programs (Allen & Seaman, 2017; Peck et al., 2018; Radovan, 2019). CBE is growing phenomenon within higher education (Gallagher, 2014; Nodine, 2016) and is considered by some policymakers to be a potential solution to the problem of higher attrition rates in online courses (Lacey & Murray, 2015). The literature on CBE is extensive; however, there were some gaps in the literature that the current study addressed. A goal of this study was to compare student success for traditional online courses and CBE online courses. This study also included an investigation of the role of dialogue in student success. Dialogue is composed of three constructs: learner–learner interactions, learner–instructor interactions, and learner–content interactions. Lastly, the differences in demographic profiles of CBE online students and traditional online students were reviewed.

This chapter provides a review of the literature that supported the purpose of the present study. Initially, there is an examination of the literature that broadly focused on online education in higher education. There is also exploration of the problem of lower student success in online programs, and the literature on online student demographics is examined. Then there is a thorough review of the literature on CBE including trends, student demographics, empirical support, student success, and the strengths and weaknesses of CBE programs. Following the examination of the literature on CBE, the theoretical framework is discussed, followed by Moore's model of transactional distance

and the role of dialogue. Lastly, the DELES assessment to measure student perceptions of dialogue is explored. I also examine the connection between the DELES and Moore's model of dialogue.

Literature Search Strategy

The literature review for this study was conducted using EBSCOhost and Google Scholar. Apart from seminal works, the date range was limited to 2015–2020. The key search terms that were used independently and in combination included *CBE*, *competency-based education*, *distance learning*, *distance education*, *e-learning*, *online education*, *online learning*, *higher education*, *post-secondary education*, *retention*, *attrition*, *student success*, *student outcomes*, *final course grades*, *student demographics*, *social interaction*, *transactional distance theory*, *Moore's model of interaction*, *learner-learner dialogue*, *learner-instructor dialogue*, *DELES*, *distance education learning environment survey*, *social interaction assessment*, *course modality*, *course design*, *student protective factors*, *student-student interactions*, *learner-learner interactions*, *student-instructor interactions*, *learner-instructor interactions*, *learner-content interactions*, *satisfaction*, and *student risk factors*.

Theoretical Framework

The theory of transactional distance (Moore, 1997) is one that describes a phenomenon that is unique to online education. Online education presents a geographical distance between learners and instructors, as well as a psychological distance. Moore and Kearsley (1996) defined transactional distance as "the gap of understanding and communication between teachers and learners caused by a geographic distance that must

be bridged through distinctive procedures in the instructional design and facilitation of interaction" (p. 223). The theory of transactional distance is both accepted and debated, and one that has been widely studied (Reyes, 2013). An asynchronous, text-based, online learning environment can lead to transactional distance in the form of feeling isolated and disconnected (Bostock, 2018; Byrd, 2016, Estes, 2016). Studies have found that this transactional distance can lead to lowered motivation and student engagement, which can result in attrition (Bostock, 2018; Byrd, 2016, Estes, 2016). Studies have also found that a primary reason for online dropout is a sense of isolation and a lack of interactions with others (Ali & Smith, 2015; Bowers & Kumar, 2015). Tinto (1997) argued that student engagement is the most important method for increasing online student retention.

Moore (1997) described three components of transactional distance: dialogue, structure, and autonomy. Moore explained dialogue as the positive and reciprocal interactions that occur between learners and instructors, and as two-way communication that includes all forms of interaction. There are three components of dialogue: learner–instructor, learner–learner, and learner–content interactions (Moore, 1997). Walker (2020), the developer of the DELES, described dialogue using the term "relationship." Walker posited that "while psychosocial learning environments can be influenced by the technology, they are contingent upon the instructor applying such technology for positive communication, support, and structure of interactions, both student-instructor, and student-student" (pp. 1–2). Walker defined learner–instructor interactions as instructional support that includes being approachable and giving prompt feedback. Walker described learner–learner interactions as having an opportunity to interact, collaborate, and

exchange information. In the present study, the role of dialogue (learner–instructor, learner–learner, and learner–content interactions) was examined to determine its role in student retention in traditional online and CBE online courses.

The second component of transactional distance theory is structure. Moore (1997) described structure in a dualistic manner: the rigidity or flexibility that exists within an online course. Rigidity and flexibility can be observed in various aspects of a course, such as course objectives, teaching strategies, methods of evaluation, accommodation, and responding to the needs of an individual learner (Moore, 1997). In the present study, structure was examined by comparing two course modalities: CBE online courses (which provide more flexibility) and traditional online courses (which are more rigid).

The third and final component of transactional distance theory is learner autonomy. Autonomy is determined by the roles of the learner and the instructor in the learning process, for instance, who is setting the learning goals, directing the learning experience, and determining the evaluative methods (Moore, 1997). Walker (2020) described learner autonomy as "the extent to which students have opportunities to initiate ideas and make their own learning decisions, and the locus of control is student-oriented" (p. X). In the present study, there was an assumption that perceived autonomy would be determined by course modality. In a CBE course, the learner takes an active role in designing the course format, while in a traditional online course these elements are typically established by the instructor.

There is a causal relationship that exists between the three parts of transactional distance. According to Bostock (2020), when there is a high level of structure, there tends

to be a low level of dialogue, which requires a higher degree of student autonomy. Bostock contended that instructors must determine the most appropriate balance of structure and dialogue within a course. Huang et al. (2016) contended that heightened structure and heightened dialogue were the most impactful solutions to reducing transactional distance.

Literature Review

The literature review is broken down into five content areas: online education, student success in online programs, CBE, the role of dialogue and interaction in online courses, and an overview of the DELES.

Online Education

Online course enrollment in higher education continues to steadily rise (James et al., 2016). Approximately 30% of higher education students are currently enrolled in at least one online course (NCES, 2018). According to Allen and Seaman (2017), national enrollment in online higher education courses has increased every year for 14 consecutive years. Allen and Seaman (2016) also reported that 14% of higher education students are exclusively online. Although enrollment in face-to-face classes decreased by 3% between 2012 and 2015, online enrollment experienced an 11% increase during this time (Allen & Seaman, 2017). Allen et al. (2016) reported that enrollment in online programs continued to grow despite a decline in overall higher education enrollment. Oregon et al. (2018) argued that the biggest challenge in higher education is student retention in online programs. Dropout rates in online programs are becoming an increasing problem (Brubacher & Silinda, 2019). Boton and Gregory (2015) reported that heightened attrition

in online programs is a worldwide problem. This growth may be partially explained by the opportunities that online courses offer students who might otherwise be deterred by obstacles such as employment, geographical location, and/or family obligations. Additionally, in response to the COVID-19 pandemic, most higher education students were forced to transition to online learning (Torun, 2020). More than ever, it became imperative to identify strategies to increase the success of online students.

Student Success

Despite the growing popularity of online education, there is a concern with student attrition rates. Online programs have had higher rates of attrition when compared to face-to-face programs (Bawa, 2016; Gering et al., 2018; Qayyum et al., 2018; Yang et al., 2017). Students in blended courses and face-to-face courses have had significantly higher odds of being retained when compared to fully online students (James et al., 2016). Rubio et al. (2018) found lower levels of participation and grades in online students as compared to their face-to-face counterparts. Glazier (2016) found that there was a higher incidence of withdrawals in online programs, as well as lower grades. In contrast, Allen et al. (2016) reported that although there was higher attrition in online programs, student performance was comparable between online students and face-to-face students. Sorensen and Donovan (2017) reported that the primary reasons for dropout tend to be different for students who drop out early in the course compared to those who drop out later in the course. Sorensen and Donovan found students who drop out early typically drop out due to academic performance, while those who drop out later typically do so because of nonacademic reasons. Additionally, Wladis et al. (2016) reported that

online students were more likely to drop out as compared to face-to-face students. Wladis et al. also discovered that being foreign-born or having a child under the age of 6 predicted lower rates of successful course completion. In addition to lower retention rates, there was also evidence to support lower student performance in fully online programs (Lockman & Schirmer, 2020). Similarly, Hurlbut (2018) found that face-to-face students had higher grades as compared to online students. Lastly, Athens (2018) found that more online students (8.9%) withdrew from their online courses as compared to those who were in face-to-face courses (5.6%).

Several researcher have explored reasons for lower retention rates in online courses as compared to face-to-face courses. Many of these studies have identified variables that may explain the lower retention rates in online education, including student variables, instructional design, and institutional variables (Bloemer et al., 2018; Bradley et al., 2017; Brubacher & Silinda, 2019; Chang & Hannafin, 2015; Cipher et al., 2017; Lehan et al., 2018; Matthias et al., 2019; Peck et al., 2018; Robichaud, 2016; Simplicio, 2019; Tinto, 2006; Watson et al., 2017; Wladis et al., 2016; Wolff et al., 2014). Although Gering et al. (2018) found that there were lower retention rates in online programs, they also found that there were higher retention and persistence rates in online programs when there was high teaching presence and social support. In an extensive review of the literature, Lockman and Schirmer (2020) found higher student achievement and satisfaction when the following components were present: utilization of multiple pedagogies, feedback from the instructor and from peers, user-friendly tools, high instructional presence, promotion of socialization, and group trust. Gering et al. found

that there were higher retention and persistence rates based on perceived academic support. Robichaud (2016) found that orientation programs increased online student retention in community colleges. In summary, there is evidence of lower retention in online programs (Gering et al., 2018), but there are also certain course/program components that have been linked to greater success for online students (Lockman & Schirmer, 2020).

Extensive research has been conducted to identify student characteristics that are associated with attrition. James et al. (2016) found that there was lower retention in younger students without Pell grants. James et al. also concluded that older student age is a predictor of student success. Cochran et al. (2014) found that the highest risk for withdrawal was during the freshman year, and that there was a steady decrease in risk each year thereafter. Gering et al. (2018) found that there were higher retention and persistence rates based on GPA, class standing, degree level, and race. In another study, Firat and Bozkurt (2020) examined online student readiness as a predictor of success. They found increased readiness in female students who were over the age of 47 and spent 5 to 6 hours a day online. Lowered readiness was found in students who spent less than 2 hours a day online and who were unemployed. Bloemer et al. (2018) identified four predictor variables for student success: GPA, student type, current academic life cycle, and prior cumulative drop-fail-withdraw rate. In another study by Cipher et al. (2017), variables were identified that were correlated with a higher likelihood of graduation and more timely graduation. These variables included utilization of financial aid, younger students, and having a previous baccalaureate degree. Wolff et al. (2014) found that

student employment influenced student success. Wolff et al. found that 75% of students who worked fewer than 12 hours a week successfully completed their course and passed their final exam, compared to 40% of the student who worked more than 12 hours a week. Sorensen and Donovan (2017) reported variables that contribute to student dropout, which included lack of support and misjudgment of abilities to balance multiple priorities. Similarly, Wladis et al. (2016) found a higher risk of dropout in online students who are native-born and who have a child under the age of 6. Yang et al. (2017) identified the following personal attributes as being associated with increased retention: having career goals related to technology, time and effort invested, and student perception of the utility of learning. Lastly, Shaw et al. (2016) reported three variables that increased the likelihood of attrition in online learning: verbal learning style, physical learning style, and personal attributes such as procrastination.

Although some studies provided support for higher attrition rates in online courses, there were some discrepancies in the literature. James et al. (2016) argued that much of the variance in online versus face-to-face attrition rates can be explained by extraneous factors, namely student age and experience. James et al. reported that older, more experienced students had higher retention rates in online courses and that younger and newer students had lower retention rates in online courses. When age and experience were accounted for, James et al. found that there was not a significant difference in retention rates between online and face-to-face courses. There were gaps in the literature regarding online retention rates. Hurlbut (2018) argued that there is a lack of substantial research to compare undergraduate online programs to comparable groups. The current

study was conducted to fill this gap by comparing traditional online courses to CBE online courses.

Protective Factors

Extensive research had been conducted to identify protective factors that increase the likelihood of online student success. Lockman and Schirmer (2020) reviewed 104 empirical studies that identified effective instruction strategies. They found that some strategies were effective in both an online format and the face-to-face format. These strategies included use of multiple pedagogies and learning resources, high instructor presence, the quality of instructor–student interactions, academic support outside of the classroom, and promotion of class cohesion. Lockman and Schirmer also identified some effective instructional strategies that were unique to the online format: user-friendly technology, orientation to online instruction, synchronous class session options, and the incorporation of social media. Other studies identified student motivation as a strong protective factor (Brubacher & Silinda, 2019; Politis & Politis, 2016). Kirmizi (2015) found that motivation was the most important predictor of student satisfaction, and that self-directed learning was the most important predictor of student success. In contrast, other studies found that motivation did not predict student satisfaction or outcomes (Boton & Gregory, 2015; Eom & Ashill, 2016). Bradley et al. (2017) found that student self-efficacy and self-regulation skills could predict student success. Qayyum at al. (2018) reported that scholarship-receiving students with more financial need were twice as likely to persist in online programs. Vella et al. (2016) identified the following

protective factors: age (older), female, being a graduate student, and having a part-time academic course load.

Online Student Demographics

Although there is evidence to support the assertion that older, more experienced students tend to be more successful in online courses (James et al., 2016), there is some discrepancy in the literature about online student demographics. Wladis et al. (2016) found that online students are typically female, married, active military, financially independent, and delayed in college enrollment. Other studies found that online students tend to have more academic preparation, have higher GPAs, be White, and be more likely to use financial aid (Jaggars & Xu, 2010; Xu & Jaggars, 2011). The NCES (2018) reported that in the 2015–2016 school year, the average student in a fully online program was female, Black, 30 years of age or older, attending part-time, employed, independent with dependents, and married. Wolff et al. (2014) reported that most online student participants in their study were older, worked more hours, and were primary caregivers as compared to their face-to-face counterparts. In another study, Wladis et al. (2016) reported that online students tended to be women, Hispanic, and older; they had children, had an income of less than $20,000 per year, had parents with a high school diploma, were not born in the United States, and had a GPA between 3.5 and 4.0. Athens (2018) found some variance in outcomes based on student demographics. Hispanic and Black students tended to be more engaged but had lower grades, and younger students with disabilities tended to be less engaged but have equivalent grades. The current study filled

a gap in the literature by collecting and comparing demographic data of students from traditional online and CBE online programs.

CBE

Competency-based education (CBE) is a variant of online education, and one that has gained significant attention in recent years (Kelly & Columbus, 2016). Although CBE emerged in the 1970s (Parson et al., 2016), it recently gained momentum because of technological advancements in online education (Baker, 2016). CBE has become one of the fastest-growing areas in online education (Krause et al., 2015). The expansion of CBE programs has been of interest to federal and state policymakers, because of some of its potential advantages (Lacey & Murray, 2015). Policymakers regularly identify CBE as a promising strategy to decrease student attrition (Parson et al., 2016). The National Center for Education Statistics (2018) reports that there are currently over 600 post-secondary institutions that are implementing CBE programs. CBE is an attempt to make higher education more efficient, economical, and relevant to occupational goals (Gallagher, 2014; Nodine, 2016). CBE is designed to maximize the success of adult learners (Tolliver et al., 2018). Additionally, advocates of civil rights and women's liberation have revered CBE as a means of social empowerment (Elbow, 1979). Riesman (1979) further argued that CBE provides opportunities for traditionally excluded groups in higher education. From a more contemporary stance, Wu and Lewis (2019) argued that CBE curriculum within baccalaureate programs could provide opportunities for students to gain employment and narrow the divide between students with and without financial and nonfinancial resources.

Some of these programs serve large student populations. For instance, Western Governors University, which is fully CBE, had over 50,000 in 2014 (Nodine, 2016). In addition to the past and current growth of CBE programs, experts predict that CBE has a strong future growth trajectory (Nodine, 2016). There is also a large subcategory of CBE, competency-based medical education (CBME). According to Boyd et al. (2018), CBME has become the primary approach in medical education within the last two decades. CBE has also been utilized for professional development opportunities (Sargeant et al., 2018).

While there are various modalities of CBE, at its core, it is based on meeting competencies, as opposed to the traditional seat-time standard (Competency-Based Education Network, 2017; Gallagher, 2014; Marcus, 2017). Baker (2016) describes CBE as a focus on material learned, as opposed to time served. Gallagher (2014) conceptualizes CBE as taking a "hyper-individualization" approach. CBE programs are flexible and are founded on student mastery, as opposed to a set amount of time that students are required to learn (Mayeshiba & Brower, 2017). Hilliard et al. (2018) identify four distinguishing components of CBE that set it apart from traditional education: flexibility, customization, mastery, and transparency. CBE offers flexibility by allowing for a learner-paced educational experience. Competencies and mastery are demonstrated when the learner is ready. Curricula are designed around identified competencies (Competency-Based Education Network, 2017).

Some CBE programs are offered in a hybrid format, but the vast majority are exclusively online (Parson et al., 2016). Students are often allowed to customize their learning experience. Course plans are highly individualized (Baker, 2016). Many

programs encourage students to identify and select their resources (Baker, 2016). Often, the program will provide a master resource of various materials from which the student can select from (Baker, 2016). The master resource library may include various written materials, videos, taped lectures, and other learning formats (Baker, 2016). CBE provides a transparent curriculum that highlights connections between learning and career goals (Hilliard et al., 2018). Identified competencies are based on skills that are required in a student's targeted job (Baker, 2016).

Demonstration of competency can be achieved in various modalities. These modalities fit into one of two measures: prior learning or mastery of new content (Baker, 2016). One competency modality, based on mastery of new content, is course-based learning (Baker, 2016; Clerkin & Simon, 2014). This modality may include tests that are remotely proctored, projects, and/or essays (Baker, 2016). This modality can be very similar to traditional course formats. The difference is that CBE programs are self-paced by learners, as opposed to an instructor determining deadlines within a set semester. Another CBE modality, based on prior learning, is non-course work, competency-based exams. Some programs allow students to demonstrate competency by taking an exam (Baker, 2016). There is a fee for taking the exam and students are generally given a specified amount of time to prepare for the exam, after registration (Baker, 2016). Another CBE modality, also based on prior learning, is to allow students to transfer various credits from prior academic institutions. Typically, these credits were earned by students, without earning a degree (Baker, 2016). One last CBE modality for demonstrating competency, which is also based on prior learning, is a non-coursework,

prior learning assessment (PLA). Prior experience can be gained in various ways, most commonly military experience, professional licensure or certification, self-study, and/or training (Baker, 2016). Students may demonstrate competency under this model by submitting a portfolio petition to highlight prior learning and alignment with course competencies (Baker, 2016). Students may also take PLAs to demonstrate competency. CBE course outcomes can also vary. Some program outcomes provide students with competency-based transcripts that are generally used to secure employment (Baker, 2016). Other programs provide credit-based transcripts that are typically used to advance to another academic program (Baker, 2016).

CBE requires a phenomenological transition for academic institutions and educators. Hoogveld et al. (2005) contended that educators need to shift from being "knowledge transmitters" to the role of an educational coach. Typically, faculty are assigned cohorts in CBE, as opposed to classes (Marcus, 2017). Typical responsibilities include teaching, testing, and developing competencies, which requires coordination and communication with potential employers (Marcus, 2017). Some institutions that offer CBE increase instructional accountability by having one instructor develop the curriculum, another instructor to teach the material, and yet another instructor to test the students (Marcus, 2017). Baker (2016) argued that the role of faculty in CBE programs is often deconstructed and that students typically have more engagement with course mentors, and non-faculty staff and advisors.

CBE Demographics

CBE programs offer certificates, associate degrees, bachelor's degrees, and master's degrees (Parson et al., 2016). These programs are found in various sectors: public, private, and for-profit institutions (Parson et al., 2016). CBE student demographics are assumed to be comparable to the demographics of traditional online students. Kelly and Columbus (2016) contended that there is a gap in the literature concerning accurate information about CBE student demographics. Despite the gap in the literature, CBE courses generally accommodate non-traditional students (Kelly & Columbus, 2016). An example of this is Capella University's FlexPath program, which is geared towards working professionals who are trying to advance their careers (Baker, 2016). Baker (2016) defines non-traditional students as those who are over the age of 25, are employed, and who have family responsibilities. Kelchan (2016) found that in a sample of 140,000 CBE students, only one in 10 were under the age of 25 and that 50% of these students were enrolled part-time. Some of the literature suggests that CBE students are typically adults (68-99%), female (50-84%), and have prior experience in higher education (70%) (Parson et al., 2016). Roughly 30% of CBE students use Pell grants, which is 10% more than traditional students (Parson et al., 2016).

CBE Empirical Support

Various studies have been conducted to evaluate the effectiveness of CBE programs. Kelly and Columbus (2016) evaluated 380 articles that focused on CBE between 1996 and 2015. They found that 25% were quantitative, 60% were qualitative, and 12% were literature reviews. In these studies, the majority focused on policy and

market environment, descriptive design, and prescriptive design components, while fewer studies explored student characteristics, student outcomes, assessment, educational theory, and/or history. One study compared CBE courses to traditional online courses and found that there are specific variables that predict success; quality and relevance of resources, providing increased support, ongoing feedback, and offering students opportunities to practice what they have learned (Krause et al., 2015). Mayeshiba et al. (2018) found support for higher critical thinking skills in CBE students over traditional students. Another study by Marcus (2017), found that a higher proportion of CBE graduates reported that what was learned in their program prepared them for life and that they were able to apply what they learned to their career when compared to traditional graduates. Marcus (2017) also reported that a higher percentage of employers indicated that CBE graduates met or exceeded their job responsibilities and were fully prepared for their roles, as compared to traditional graduates. Additionally, Marcus (2017) found that a higher percentage of CBE graduates successfully passed their professional certification and licensing exams. Studies have also examined student response and satisfaction with CBE programs. Parson et al. (2016) reported that student satisfaction in CBE courses was equal to, or higher than student satisfaction in traditional courses. Other studies have looked at identifying which students are most likely to benefit from CBE programs. One such study found that CBE programs are best suited for students who have other responsibilities, and who want to advance or accelerate their career (Marcus, 2017). In review, the literature indicates that most CBE studies have been qualitative and have not focused on student demographics (Kelly & Columbus, 2016). This study fills a gap by

using a quantitative design and examining student characteristics. While there have been studies that have compared traditional and CBE outcomes, these studies have not compared retention rates and the impact of dialogue.

Studies have also identified problems with CBE programs. One study argued four main problems with CBE programs; flexible pacing can stall progress for some learners, online delivery models have weak outcomes for unprepared learners, assessment can create a high-risk environment that can create test anxiety for some students, and accurately aligning competencies to future employment possibilities (Hilliard et al., 2018). Studies have also identified inconsistencies. Parson et al. (2016) found substantial variability in CBE design, pricing, student pace requirements, and how CBE programs are situated within higher education institutions.

While many studies have been conducted to examine the efficacy of CBE programs, there are some inconsistent findings and gaps within the literature. Parson et al. (2016) contended that there is a lack of data about the quality of education provided by CBE programs. Parson et al. (2016) also argued that there is also a need for better evidence to support student outcomes and that this should be done by focusing on observable student outcomes and comparison to traditional programs, as opposed to successful passing of certification or licensing exams. Additionally, Kelly and Columbus (2016) urge for further research in two specific areas; evaluating how student demographics vary between CBE courses and traditional courses, and how measures of student success vary between CBE students and traditional students.

CBE Student Success

There are mixed and varied findings regarding student success in CBE programs. Some studies report 15 to 80% retention rates in CBE, and 2 to 10% higher retention rates in CBE programs as opposed to traditional programs (Association of American Colleges and Universities, 2016). Another study reported that first-to-second term retention rates in CBE programs range from 68 to 83% and that CBE retention rates varied from 13% below retention rates to 16% above traditional retention rates (Kelly & Columbus, 2016). The average retention rate for 2- and 4-year institutions is 74% for full-time students and 44% for part-time students (Integrated Postsecondary Education Data System, 2012). There is vast discrepancy in the statistical comparison of CBE and traditional courses, which represents a gap in the literature. A variety of variables have been identified in the literature as being relevant. Many of these variables have been incorporated into the demographic survey.

Parson et al. (2016) argued that there is a lack of clarity regarding student outcomes in CBE programs. They also argue that there is a need to understand the key components that may affect CBE student outcomes, specifically concerning program design. Parson et al. (2016) also asserted that there is a need to establish valid comparison groups. In the process of establishing valid comparison groups, there are three vital factors. The first consideration is matching student demographics in comparison groups (Kelly & Columbus, 2016; Parson et al., 2016). When comparing CBE students to traditional students, researchers should attempt to compare groups with similar demographics. A second consideration is the identification of a common outcome or

progression metric (Kelly & Columbus, 2016; Parson et al., 2016). Traditional courses have a specific start date, as well as a set completion date. This is not the case with CBE courses that are self-paced. Mayeshiba and Brower (2017) propose a six-month re-enrollment standard for measuring retention in CBE courses. A third variable that should be considered when establishing comparison groups is the variance in student intentions and educational goals (Parson et al., 2016). Parson et al. (2016) contended that there are four types of CBE students; sprinters (those who move through the content quickly), flexers (who work at their own pace), frequent flyers (those who complete a few competencies, step out for a while, and then return later) and consistent enrollers (those who make steady progress without stopping). These differences in the goals and types of CBE students may possibly account for the mixed findings in CBE retention literature.

Strengths and Weaknesses of CBE

There are potential benefits to be gained from CBE design. Kelly and Columbus (2016) assert that higher education is under pressure to become more innovative and to make changes to address current problems, including cost, stagnant completion rates, and an uncertain labor market. CBE has the potential to lower the cost of education (Kelly & Columbus, 2016; Lacey & Murray, 2015; Parson et al., 2016), to decrease the amount of time it takes to complete a program (Kelly & Columbus, 2016), to provide access for underserved and underrepresented populations (Association of American Colleges and Universities, 2016; Lacey & Murray, 2015; Parson et al., 2016), to improve the quality of higher education (Lacey & Murray, 2015; Parson et al., 2016) and to boost successful completion rates (Kelly & Columbus, 2016; Parson et al., 2016). Policymakers have

recently focused on CBE as a potential solution for boosting student retention and enabling students to complete their degrees (Parson et al., 2016). CBE programs are flexible and work around the individual needs and interests of each student (Kelly & Columbus, 2016; Parson et al., 2016). The inherent flexibility allows students to participate who may not otherwise be able to complete a degree due to conflicting obligations and responsibilities. CBE plans are individualized and highly focused. One caveat of this modality is that students need to have clear occupational goals before entering a CBE program (Baker, 2016). Another noteworthy strength of CBE programs is that the students tend to report overall satisfaction with their program (Parson et al., 2016).

While there are several potential benefits and strengths of CBE programs, there are also some weaknesses and limitations with CBE. Goldman et al. (2018) argued that CBE takes a "reductionist approach to understanding complex human behavior" (p. 407). Similarly, Touchie and ten Cate (2016) identified three issues, an inability to conceptually model and measure physician-patient relationships, lack of valid assessment instruments, and the de-valuing of educators. Parson et al. (2016) argued that due to the self-paced nature of CBE, these programs will not necessarily save students money. Student efficiency is student-driven and can potentially take longer than traditional programs. Lacey and Murray (2015) pointed out the obstacles created by state and federal regulations. States regulate the number of credit hours required to obtain a degree, and in some states, these requirements are not conducive to CBE (Lacey & Murray, 2015). The same is true of many state-controlled professional licenses and certifications, which are

commonly contingent upon traditional credit hours (Lacey & Murray, 2015). Traditional credit hours can also influence public funding formulas (Lacey & Murray, 2015). On a larger scale, federal financial aid was directly tied to credit hours until 2005 (Lacey & Murray, 2015; Porter, 2016). Legislative policy changes discontinued federal financial aid reliance on traditional credit hours after 2005. According to Porter (2016), federal financial aid is still geared more towards traditional online programs that are based on credit hours. Some large CBE institutions, such as Western Governors University, have created equivalencies between competencies and credit hours (Porter, 2016).

Another limitation is the inconsistency in assessment, program review, and accreditation (Lacey & Murray, 2015). Lacey and Murray (2015) contended that postsecondary regulators need to develop a system of adequate oversight that also allows programs to evolve and be successful. One last limitation with CBE is the lack of social interaction. Gallagher (2014) argued that learning is highly social and warns that an emphasis on academic individualization comes at the expense of peer interaction, which is vital to learning.

Role of Dialogue and Interaction in Online Courses

Dialogue is a vital component of online education (Moore, 1997). Dialogue, part of Moore's theory of transactional distance, refers to the interactions that occur between the student and the instructor, other students, and the course content. Altinay (2017) agreed that social interactions play a significant role in the facilitation of online learning, as well as in the construction of knowledge. Further, Altinay (2017) argued that interactive learning is a critical component of the online learning process. Fostering

effective communication and social interactions in online courses can be more difficult than traditional face-to-face courses. Brooks and Young (2016) reported that students in traditional courses have significantly more out-of-class communication with their instructors and peers compared to online students. Despite the inherent obstacles, fostering a strong sense of community in online learning environments is detrimental to the learning experience (Epp et al., 2017). Lockman and Schirmer (2020) conducted a review of 104 empirical studies published between 2013 and 2019 that aimed to identify effective instructional strategies in both online and face-to-face courses. High instructional presence and quality student-instructor interactions were identified as effective strategies in both online and face-to-face courses (Lockman & Schirmer, 2020). Eom and Ashill (2016) found that learner-instructor and learner-learner interactions were determinants of student satisfaction and student outcomes. Similarly, Collins et al. (2019) found that improved student engagement led to lower online attrition. Improved student engagement included an increased sense of connectedness and a decreased sense of isolation (Collins et al., 2019). Boton and Gregory (2015) further argued that pedagogy that fosters engagement can impact online attrition. Athens (2018) found a strong positive relationship between student perceptions of engagement and student outcomes (grades).

Specific to online instruction, synchronous session opportunities (Lockman & Schirmer, 2020) and the incorporation of social media to permit networking and socialization were also identified as effective online teaching strategies (Lockman & Schirmer, 2020; Quong et al., 2018). Social media platforms that have been identified as being successful in facilitating social interaction include Facebook, Twitter, Ning,

YouTube, and blogs (Lockman & Schirmer, 2020; Sanderson, 2019; Quong et al., 2018). These strategies support Moore's assertion that dialogue is a vital component of online education (1997).

Bettinger et al. (2016) focused their research on learner-learner interactions. They found that when low engaging online students are exposed to more interactive and engaging peers, there were positive outcomes. These positive outcomes included improved grades, higher persistence rates, and a higher likelihood of passing the course. Lowenthal (2016) reported that the learner-instructor relationship is secondary to the importance of social interactions between learners. Additionally, Bettinger et al. (2016) contended that peers have a positive impact on individual productivity both in education and in the workforce. They also identified some trends in online student interactions. Female students and older students are more likely to interact with peers (Bettinger et al., 2016). Additionally, students are more likely to engage in interactions with peers of the same gender and geographic region (Bettinger et al., 2016). Other studies have concluded that learner-learner interactions need to be intentional and a deliberate part of instructional design. One such study suggested that online courses support and foster interactions between learners in a manner that is engaging and interactive (Joksimović et al., 2015). The quality and impact of learner-learner interactions can be influenced by secondary variables. Kuo and Belland (2016) found that learner-learner interactions are influenced by course-related variables, such as course length, course type, and the number of discussion forums. A high number of discussion forums within an online course is correlated with lower learner-learner interactions (Kuo & Belland, 2016).

Additionally, there is higher learner-learner interaction in advanced-level courses as compared to basic-level courses (Kuo & Belland, 2016). Lastly, accelerated courses tend to elicit higher learner-learner interactions (Kuo & Belland, 2016).

The second type of necessary social interaction in online learning are learner-instructor interactions (Moore, 1989). While there is clear evidence to support the value of learner-learner interactions, some research suggests that learner-instructor interactions take precedence. A study by Epp et al. (2017) found that students in instructor-facilitated courses reported a stronger sense of community as compared to students in peer-facilitated courses. Phirangee et al. (2016) concluded that instructor social presence is more important than learner-learner interactions when it comes to overall student success. Collins et al. (2019) reported that instructional social presence may be the most important factor in reducing online attrition. Glazier (2016) argued that it is difficult to establish learner-instructor rapport in online programs, and that this can lead to lowered student success. The researcher also pointed out that when there is low learner-instructor rapport student are less likely to remember content and to prioritize the course. Glazier (2016) further reported lowered attrition and higher grades in online courses rapport-building courses. The elements of rapport-building courses included humanizing the instructor, providing detailed and student-specific feedback, making personal contact with students, and using humor (Glazier, 2016).

Research has also been conducted to explore variables that may influence learner-instructor interactions. Kuo and Belland (2016) found that learner-instructor interactions are influenced by gender, age and hours spent online. Female students and students who

spend more time logged into class tend to have more interaction with their instructors (Kuo & Belland, 2016). In another study, Sadykova and Meskill (2019) tackled the issue of interculturality in online education. They contended that instructors must serve as a "cultural intermediary" between students. Additionally, Sadykoya and Meskill (2019) posited that learning is a social process and that online instruction should be designed in a way that learning can occur through interaction, with the instructor serving as a mediator. Other studies have proposed alternate methods of deliberate and intentional interactions. Hicks et al. (2019) suggested the development of a communication plan to serve as a blueprint for effective communication between instructors and students. They presented a prescription for interactions to be facilitated by the instructor. Some of these interactions included reaching out to inactive students, weekly podcasts, reminders, individual feedback, expression of appreciation, and praise for exemplary performance (Hicks, Gray, & Bond, 2019). Finally, Bowers and Kumar (2015) found that social interaction between learners and the instructor increased student engagement and lowered student attrition.

Distance Education Learning Environment Survey

The DELES was developed by Walker in 2003. It is a self-report questionnaire that focuses specifically on online learning environments. It is available in eight languages: Arabic, Malaysian, Mandarin, Persian, Portuguese, Spanish, Turkish and English. The DELES will be used to access dialogue (learner-instructor, learner-learner, and learner-content interactions). It was developed by Scott Walker with the intention "to understand learning environments, make program adjustments, and optimize the student

learning experience (Walker, 2020, preface). More specifically, the DELES was developed to examine psychosocial components in online learning environments (Walker, 2020). In the DELES manual, Moore explains that "while learning environments can be influenced by the technology of the time, they are contingent upon the instructor applying such technology for positive communication, support, and structure of interactions, both student-instructor and student-student" (Walker, 2020, p. 1-2).

There are three versions of the DELES: actual, preferred, and instructor. The DELES actual version measures student perceptions of their current learning environment. The DELES preferred gathers information about what students would prefer in a course. Lastly, the DELES instructor version gathers information from an instructor about their perceptions in each course. This study employed the DELES actual version. The first subscale of the DELES (questions 1-8) elicits student feedback about perceived instructor support and will be used to measure learner-instructor interactions (Walker, 2020). The second subscale (questions 9-14) elicits student perceptions about student interaction and collaboration and will be used to measure learner-learner interactions (Walker, 2020). The third and fourth subscales (questions 15-26) elicit student perceptions about s learner-content interactions. The fifth and sixth subscales (questions 27-34) obtains student perceptions of student autonomy, and the extent to which they can make their own learning decisions (Walker, 2020). Lastly, the seventh subscale (questions 35-42) are questions related to student satisfaction. All items on the DELES are categorically scored: Never (1), Seldom (2), Sometimes (3), Often (4), and

Always (5). The DELES is then scored by calculating the mean score per section (Walker, 2020). Scores from different scales cannot be combined, which is advantageous, so that student interaction scores (questions 1-8) and the student-instructor interaction scores (questions 9-14) can be used as separate predictors in the logistic regression analyses.

Summary

Online education has steadily grown over the last couple of decades and further growth is projected (National Center for Education Statistics, 2018). While online programs are growing in popularity and demand, they are also faced with higher attrition rates when compared to traditional, face-to-face programs (Allen & Seaman, 2017; Peck et al., 2018; Radovan, 2019). Presently, CBE is the fastest growing sector of online education (Krause et al., 2015). Some policymakers believe that CBE has the potential to lower attrition rates in higher education (Lacey & Murray, 2015; Parson et al., 2016). While there is literature that has examined various aspects of CBE, there are significant gaps within the literature. There are some discrepancies within the literature about the demographic makeup of online students. Studies have not been conducted to examine the differences and similarities between traditional online students and CBE online students (Kelly & Columbus, 2016). Data from this study may help in filling that gap. Studies have been conducted to examine the efficacy of CBE programs. Kelly and Columbus (2016) found that there have been significantly fewer quantitative studies on CBE. This study took a quantitative approach to examine CBE. Additionally, there was a gap in the literature to examine CBE student outcomes (Association of American Colleges and

Universities, 2016). This research study examined CBE student outcomes compared to traditional online outcomes. The study also examined the role of dialogue using Moore's theory of transactional distance and dialogue as the theoretical foundation (1997). The literature supports that dialogue plays a vital role in online learning (Altinay, 2017; Bettinger et al., 2016). Information from this study may be used to fill a gap in the literature by applying Moore's theory to assess the role of dialogue in student success in both traditional online and CBE online programs. In Chapter 3 the methodology for this study is described.

Chapter 3: Research Method

The goal of this study was to identify whether online course modality (traditional online or CBE online) predicted student success. I also evaluated whether dialogue (learner–learner, learner–instructor, and learner–content interaction) predicted student success. Dialogue was measured using the DELES (Walker, 2003). It provided numerical subscores for learner–learner, learner–instructor, and learner–content interactions.

Course modality (traditional online, CBE online) and dialogue (learner–learner, learner–instructor, and learner–content interactions) served as the independent or predictor variables. Student success was the dependent or outcome variable, which was measured using the student's final course grade (on a 4-point scale) using the final course grade of the last course completed. A statistical regression analyses was conducted to determine whether the outcome (student success) was associated with any of the predictors (i.e., three kinds of dialogues) that could explain the outcome. A procedural change in the type of regression was made.

This study also addressed the kinds of individuals who are involved in the two online course types by comparing demographic profiles of traditional online students and CBE online students that was not addressed in the literature. Embedded in the demographic survey portion was course modality (CBE/traditional) and student retention information. Descriptive statistics were used to profile the kinds of students involved in these two course types. This chapter covers the research design and rationale, data collection procedures, instruments used, data analysis, participant information, threats to validity, and ethical considerations.

Research Design and Rationale

This study was unique regarding the combination of variables being explored. I examined lower retention rates in online programs, the discrepancies in the literature regarding online student demographics, variables that contribute to online student success, online versus CBE programs, and the role of dialogue using Moore's theory of transactional distance. Because there were no comparative studies, this study addressed gaps in the literature. The gaps addressed included gathering accurate CBE demographic information (Kelly & Columbus, 2016), meeting the need for a quantitative study to examine CBE (Kelly & Columbus, 2016; Parson et al., 2016), and an analysis of the role of dialogue in retention.

Multiple linear hierarchical regression was initially chosen because it was considered best suited for this study. In a multiple linear regression model, the predictive relationship between predictor/independent variables and the outcome/dependent variable can be assessed. The aim of this study was to determine whether several predictor variables including course modality (traditional online, CBE online) and types of dialogue (learner–learner, learner–instructor, and learner–content interactions) predict student success (successful course completion). However, a change in the outcome variable for student success from a continuous one to an ordinal one resulted in a change to ordinal logistic regression. This form of regression resembles multiple linear regression but does account for the categorical outcome variable. Additionally, I collected demographic data: information about the current/most recent course, current academic performance, gender, race, ethnicity, age, military experience, financial aid,

previous college experience/performance, relationships, employment/professional experience, and basis for choosing program (CBE versus traditional).

Financial aid was one demographic variable that was of concern because it might correlate with other predictor variables. This concern was due to the high likelihood of participants using financial aid (NCES, 2018). If this had occurred, it would have been treated as a controlling variable in the statistical analysis. However, a high percentage who used financial aid did not occur.

The first independent or predictor variable in the present study was course modality, a binary variable. Two course modalities were examined: traditional online and CBE online. Information about course modality was obtained in the demographic survey. Participants self-identified as either a CBT online or traditional online student. The second independent or predictor variable was dialogue. There are three components to Moore's construct of dialogue: learner–learner, learner–instructor, and learner–content interactions. Dialogue was measured using the DELES. The DELES provides three separate numerical subscores for each type of dialogue, making this variable a scale variable. The dependent or outcome variable was student success, which was measured using the final course grade. Retention was a continuous variable.

This study was a nonexperimental quantitative research design. In place of random selection, convenience sampling was used. Participants were not assigned to either a traditional online course or a CBE online course. Instead, students who were already enrolled in one of these programs or who had completed a traditional online course or a CBE online course (successfully or unsuccessfully) within the last 6 months

were asked to participate. There was no active manipulation in this study; instead, there was an analysis of preexisting conditions. Participants reported their last course that was completed within the last 6 months. This design allowed for data to be collected in a timely manner as opposed to waiting for students to complete a course in which they were currently enrolled.

The design for this study was based on current literature and the identification of gaps within the literature. A nonexperimental quantitative design was chosen because there was a need for quantitative studies to address CBE effectiveness because most studies had been qualitative (see Kelly & Columbus, 2016). I compared CBE students to traditional online students because there was a gap in the literature in terms of the utilization of valid comparison groups (see Kelly & Columbus, 2016; Parson et al., 2016). One goal of the study was to examine student success rates in CBE programs as compared to traditional online programs, which filled a gap within the literature (see Croxton, 2014; Gallagher, 2014; Kelly & Columbus, 2016; Lacey & Murray, 2015; Parson et al., 2016). Research had not been conducted to examine the difference in student success between traditional online courses and CBE courses. Kelly and Columbus (2016) argued that there is a need for further research to examine possible factors that would account for the variance.

Some research suggested that variance in student success between online courses and face-to-face courses can be explained by confounding variables such as student age, employment, being a caregiver (Wolff et al, 2016), using financial aid (Britt et al., 2017; Perkins et al., 2021), academic experience (James et al., 2016), gender, ethnicity, and

income (Wladis et al., 2016). Another goal of the present study was to explore the relationship between student success and dialogue embedded into course design. Studies have found that embedding dialogue into course design is a critical component of student success and satisfaction (T. Anderson, 2003; O'Rielly & Newton, 2002; Sung & Mayer, 2012). According to Moore (1997), there are three critical forms of interactions that need to occur in online learning environments: learner–learner, learner–instructor, and learner–content interactions. The literature supported the relationship between Moore's construct of dialogue and student success. Some studies indicated that learner–instructor interactions are the primary predictor of satisfaction and persistence in traditional online programs (Croxton, 2014; Sebastianelli et al., 2015; Wengrowicz et al., 2018). Kuo and Belland (2016) had similar findings and reported that both learner–instructor and learner–content interactions had a significant impact on student satisfaction. These studies addressed traditional online courses; however, there was a gap in the literature regarding CBE online courses. Other researchers concluded that there are higher learner–learner interactions in advanced-level courses as compared to entry-level courses (Kuo & Belland, 2016). Similarly, Kurucay and Inan (2017) concluded that learner–learner interactions have a significant effect on online student success. It was unknown whether the same is true for online CBE students. Bickle and Rucker (2017) reported that learner–learner interactions predicted students' perception of course quality but did not impact their overall course satisfaction.

There were some emerging trends in the literature regarding student demographics. There were also some inconsistencies and gaps in the literature (Kelly &

Columbus, 2016). Much of the research focused on the demographics of traditional online students. These studies indicated that traditional students are most often female (Parson et al., 2016; Wladis et al., 2016), are older (James et al., 2016; Parson et al., 2016), have more academic experience (Jaggars & Xu, 2010; James et al., 2016; Parson et al., 2016; Xu & Jaggars, 2011), have higher GPAs (Jaggars & Xu, 2010; Xu & Jaggars, 2011), use financial aid more than face-to-face students (Jaggars & Xu, 2010; Parson et al.,2016; Xu & Jaggars, 2011), are married, are active military, and are financially independent (Wladis et al., 2016). I included these demographics to compare the demographic profiles of traditional online students and CBE online students.

Methodology

Population

The accessible population for this study included individuals over the age of 18 who were currently enrolled in or who in the last 6 months had been enrolled in either a traditional online course or a CBE online course. I aimed to recruit a minimum of 100 participants.

Sampling and Sampling Procedures

The sampling strategy used for this study was purposeful and included a total population sampling approach. Participation in this study was not limited to any number of colleges or universities or geographical region. Any traditional online or CBE online student could participate. A G* power analysis based on a multiple linear regression statistical design indicated the sample size needed was 100 participants to reach a

statistical power of .80 with a small effect size (odds ratio < 1.5 or Cohen's *d* of < .2 equivalent) and a statistical significance probability of less than .05.

Procedures for Recruitment, Participation, and Data Collection

Participants were recruited using the SurveyMonkey targeted response system. First, participants were required to read the consent form and choose an option of consent or not consenting to participate. The consent indicated that by proceeding to the survey the participant was consenting to participate in the study. No personal identifying information was collected from participants at any time. Completion of the two surveys was estimated to take no longer than 15 minutes. Upon completion of the demographic survey (see Appendix B) and DELES, a de-briefing message appeared (see Appendix A). The de-briefing message explained the purpose of the study and provided my and Walden University contact information.

Instrumentation and Operationalization of Constructs

The DELES developed by Walker (2003) was chosen for this study because of its alignment with Moore's (1997) theory of dialogue. The DELES is used to gather student perceptions of interactions within their current or identified course. There are 34 questions and six scales: instructor support (learner–instructor interaction), learner interaction and collaboration (learner–learner interaction), personal relevance (learner–content interaction), authentic learning (learner–content interaction), active learning (learner–content interaction), and student autonomy (learner–content interaction). The following is an example of one of the questions: "In this class, I work with others." Respondents are asked to select one response: *never*, *seldom*, *sometimes*, *often*, or *always*.

All of the questions on this assessment follow the same format. Walker provided written permission to use the DELES for purposes of the current study. Reliability and validity were established for the DELES (Walker, 2003; Walker & Fraser, 2005). Walker and Fraser (2005) tested the DELES on 680 online students and reported alpha reliability coefficients that ranged from 0.75 to 0.94. The DELES is currently available in eight different languages. From its inception until 2018, it has been used in 24 different studies.

Study Variables

There were four predictor variables in this study: course modality (traditional online, CBE online), and various types of dialogue (learner–learner, learner–instructor, and learner–content interactions). The outcome variable was student success (final course grade). Two course modalities were examined for purposes of this study: traditional online format and CBE online format. Participants reported in the demographic survey as being a traditional online student or a CBE online student. Type of dialogue (learner–learner, learner–instructor, and learner–content interactions) was another set of independent or predictor variables. Dialogue was assessed using the DELES, which yielded separate numerical scores for each type of dialogue. Student success was the dependent or outcome variable. Student success was defined using the student's final course grade on a 4-point grading scale. Data about course completion were collected using the demographic survey.

Data Analysis Plan

Data from the DELES and the demographic survey were entered into the Statistical Software for the Social Sciences (IBM® SPSS®, v28) for statistical analysis.

Data were cleaned and screened using SPSS before statistical analyses. Additionally, data were examined to determine if the assumptions for the proposed statistical analyses were met. A multiple linear regression model, specifically hierarchical multiple linear regression to control for confounding variables was scheduled to be used to analyze the data. However, the outcome variable of a participant typing into the survey their actual grade for the course they took was switched instead to grade point average categories to further remove any specific personal identifying information, and to avoid having them fill in a response when the remainder of the survey were multiple choice responses. Because of this change, the outcome variable was no longer a continuous variable and now was a categorical one with five categories: (a) GPA 4.0+; (b) GPA 3.0-3.99; (c) GPA 2.0-2.99; (d) GPA 1.0-1.99; and (e) GPA 1.0 <). These categories required the use of ordinal logistic regression. Descriptive statistics were collected, and simple descriptive analysis was identified for the data collected in the demographic survey. Demographic data collected included the following: information about the current/most recent course, current academic performance, gender, race, ethnicity, age, military experience, financial aid, previous college experience/ performance, relationships, employment/ professional experience, and basis for choosing program (CBE versus traditional).

Research Questions and Hypotheses

The key research question in this study concerned whether online course modality type (traditional online versus CBE online) and dialogue (learner-learner, learner-instructor, and learner-content interaction) would predict student success.

H_0: Online course modality and dialogue do not predict student success.

H_1: Online course modality and dialogue do predict student success.

More specifically, the RQs were the following:

RQ1: Is online course modality (traditional online or CBE online) a significant predictor of student success?

H_{01}: Course modality (traditional online or CBE online) is not a significant predictor of student success.

H_{a1}: Course modality (traditional online or CBE online) is a significant predictor of student success.

RQ2: Is dialogue (learner-learner interaction) a significant predictor of student success?

H_{02}: Dialogue (learner-learner interaction) is not a significant predictor of student success.

H_{a2}: Dialogue (learner-learner interaction) is a significant predictor of student success.

RQ3: Is dialogue (learner-instructor interaction) a significant predictor of student success?

H_{03}: Dialogue (learner-instructor interaction) is not a significant predictor of student success.

H_{a3}: Dialogue (learner-instructor interaction) is a significant predictor of student success.

RQ4: Is dialogue (learner-content interaction) a significant predictor of student success?

H_{04}: Dialogue (learner-content interaction) is not a significant predictor of student success.

H_4: Dialogue (learner-content interaction) is a significant predictor of student success.

Threats of Validity

There are some potential threats to internal validity with the proposed study design. One possible confounding variable is the inherent difference in course content and instructional strategies employed. It was, however, expected that online courses and instructors would vary. The study aimed to determine if online course modality and dialogue were predictors of student success. Threats to construct validity were minimized due to the reliability and validity testing that was conducted on the DELES. Lastly, based on the number of participants who volunteered to participate in the study, there was a potential for low statistical power, and therefore threats to statistical conclusion validity.

Ethical Procedures

This study collected information about student perceptions. No actual interventions occurred. One potential ethical concern was how to handle data from student participants who did not fully complete the DELES and demographic survey. Data were obtained from participants after completion of an online course. Participants were asked to complete the DELES and the demographic survey either after their course, or when they dropped the course. It was anticipated that there might be a higher response rate from those who successfully completed the course they evaluated. Data were stored on a password-protected computer. The researcher of the study, chair, and committee

members were the only persons who had access to the data. After the study, data will be stored on a password-protected external drive and destroyed after 7 years.

Summary

This study aimed to examine the relationship between course modality, dialogue, student demographics, and student success. The study included participants from various colleges and universities. Participants were recruited using SurveyMonkey®. There were two inclusionary criteria for participation in the study. Participants had to be 18 years of age or older and they must have taken a traditional online course or a CBE online course within the last 6 months. Participants were asked to complete a demographic survey and the DELES (Walker, 2003). Data are analyzed and discussed in Chapter 4.

Chapter 4: Results

The purpose of this nonexperimental quantitative study was to determine whether course modality (traditional online and CBE online) and dialogue (learner–learner, learner–instructor, and learner–content) predict student success (final course grade). Data were collected using a demographic survey and the DELES (Walker, 2003). Chapter 4 includes information about the data collection, changes to the initial plan for statistical analysis, research questions and hypotheses, study results, statistical assumptions, and a summary of the findings.

Data Collection

Data were collected using SurveyMonkey and the targeted response system. The age range was set at 18 to 99 years old, all genders, all regions of the United States, and those with some postsecondary education experience. The target number of responses was 100. The survey was prematurely closed on June 14, 2022, after 77 responses had been obtained. In the first launch, the abandon rate was 48%, and the disqualified rate was 0%. The survey was relaunched on June 14, 2022. After a total of 127 responses had been obtained (collectively), the survey was closed. In the second launch, there was a 51% abandon rate and a 0% disqualified rate.

The survey began with the participant's consent form. Next was the demographic survey and then the DELES. Lastly, there was a debriefing form. Data were exported from Survey Monkey into an SPSS file. The files were password protected and stored on a password-protected personal computer. A G* power analysis indicated 100 participants were needed to reach a statistical power of .80 with a small effect size (odds ratio < 1.5 or

Cohen's *d* of < .2 equivalent) and a statistical significance probability of less than .05. A total of 127 responses were collected and analyzed.

The original plan for statistical analysis, hierarchical multiple linear regression, was changed to ordinal logistic regression. The original plan for data collection was to collect numerical values for the dependent/outcome variable, thereby making the variable a continuous variable. When the survey was constructed, the decision was made to collect ordinal categorial data. Participants were asked about the final course grade for the course they were reporting on. The outcome options were as follows: (a) 4.0 or better (A), (b) 3.0 to 3.99 (B), (c) 2.0 to 2.99 (C), (d) 1.0 to 1.99 (D), and (f) less than 1.0 (F). This change required a change in the type of regression statistical analysis.

The baseline descriptive data are found in Tables 1 through 3. Table 1 provides academic performance and other academic information. Of the total population (*N* = 127), 65.4% were traditional participants (*n* = 83), and 34.6% were CBE participants (*n* = 44).

Table 1

Academic Performance and Information

Baseline characteristic	Total population		Traditional		CBE	
	N/n	%	*n*	%	*n*	%
Course modality	127		83	65.4%	44	34.6%
Requirement						
Required	72	56.7%	52	62.7%	20	45.5%
Elective	55	43.3%	31	37.3%	24	54.5%
Course outcome						
Dropped	4	3.1%	4	4.8%	0	0%
Withdrew	17	13.4%	11	13.3%	6	13.6%
Completed/not passed	13	10.2%	11	13.3%	2	4.5%
Completed/passed	93	73.2%	57	68.7%	36	81.8%

Baseline Characteristics	Total Population		Traditional		CBE	
	N/n	%	*n*	%	*n*	%
Final grade	47	37%	28	33.7%	19	43.2%
4.0 or better (A)	60	47.2%	42	50.6%	18	40.9%
3.0-3.99 (B)	15	11.8%	9	10.8%	6	13.6%
2.0-2.99 (C)	2	1.6%	1	1.2%	1	2.3%
1.0-1.99 (D)	3	2.4%	3	3.6%	0	0%
Less than 1.0 (F)						
If not passed						
Try course again	22	17.3%	14	16.9%	8	18.2%
Change program	13	10.2%	10	12%	3	6.8%
Dropped program	4	3.1%	3	3.6%	1	2.3%
No longer in school	10	7.9%	9	10.8%	1	2.3%
N/A completed class	68	61.4%	47	56.6%	31	70.5%
Financial aid						
Yes	35	27.6%	27	32.5%	8	18.2%
No	92	72.4%	56	67.5%	36	81.8%
Enrollment						
Full-time	41	32.3%	33	39.8%	8	18.2%
Part-time	48	37.8%	30	36.1%	18	40.9%
Not enrolled	38	38%	20	24.1%	18	10.9%
Degree pursuing						
Associate's	12	9.4%	9	10.8%	3	6.8%
Bachelor's	5	39.4%	40	48.2%	10	22.7%
Master's	15	11.8%	11	13.3%	4	9.1%
Doctorate	7	5.5%	3	3.6%	4	9.1%
Certification	22	17.3%	6	7.2%	16	36.4%
None	19	15.0%	13	15.7%	3	6.8%
Other	2	1.6%	1	1.2%	2	4.5%
Online experience						
Some online courses	57	44.9%	38	45.8%	19	43.2%
Many online courses	50	39.4%	33	39.8%	17	38.6%
Most education online	7	5.5%	6	7.2%	1	2.3%
Never taken online	13	10.2%	6	7.2%	7	15.9%

In the academic performance and information table (see Table 1), the data showed a disproportionate percentage of traditional online student respondents (64.5%) as compared to CBE online student respondents (34.6%). Also, there were differences in what these two online groups chose to evaluate for this study regarding their course requirements. The traditional online students evaluated primarily a required online course

type (68.7%) while CBE online students evaluated primarily an elective online course type (54.5%). For both the traditional (68.7%) and CBE respondents (81.8%), most had passed the class they evaluated for this study. Moreover, there were differences between these two online groups in their final course grade. Of the traditional students, 50.6% received a final grade of 3.0 to 3.99 (i.e., the group that evaluated required courses) while 43.2% of CBE students received a final grade of a 4.0 or better (i.e., the group that evaluated mostly elective courses). A few students had not passed the course they used in their evaluation for this study, and of those individuals, less than 20% (traditional, 16.9%; CBE, 18.2%) planned to take the course again. Most students (traditional, 67.5%; CBE, 81.8%) were not receiving financial aid as was initially anticipated. Roughly 40% of the traditional students (39.8%) were enrolled full-time, and about 20% of the CBE students (18.2%) were enrolled part-time. Roughly 25% of the traditional (24.1%) and 41% of the CBE (40.9%) students were not currently enrolled at the time of this study. Most of the traditional respondents were seeking a bachelor's degree (48.2%), while most CBE respondents were seeking a certificate (36.4%). Finally, both traditional and CBE respondents had previously taken some online courses (45.8% and 43.2%, respectively) prior to participating in this study. In summary, there were notable differences between the groups. Traditional online students accounted for a larger proportion of the total population; most were enrolled in required courses and were predominantly seeking bachelor's degrees. CBE online students accounted for a small proportion of the total population, and most were enrolled in elective classes and were predominantly seeking

certificates. Another finding was that a small proportion (27.6%) of the total population used federal financial aid. Table 2 provides demographic information.

Table 2

Sociodemographic Characteristics of Participants

Baseline Characteristics	Population		Traditional		CBE	
	N/n	%	*n*	%	*n*	%
Sex	127		83	65.4%	44	34.6%
Female	67	45.7%	46	55.4%	21	47.7%
Male	58	52.8%	35	42.2%	23	52.3%
Nonbinary	1	0.8%	1	1.2%	0	0%
Chose not to respond	1	0.8%	1	1.2%	0	0%
Race	127		83	65.4	44	34.6%
American Indian or Alaskan Native	1	0.8%	1	1.2%	0	0%
Asian or Asian American	1	0.8%	13	15.7%	6	13.6%
White	81	63.8%	51	61.4%	30	68.2%
Black or African American	12	9.4%	9	10.8%	3	6.8%
Hispanic or Latino	9	7.1%	6	7.2%	3	6.8%
Native Hawaiian or Pacific Islander	1	0.8%	0	0%	1	2.3%
Another race	4	3.1%	3	3.6%	1	2.3%
Age	127		83	65.4%	44	34.6%
18–22	16	12.6%	13	15.7%	3	6.8%
23–30	36	28.3%	27	32.5%	9	20.5%
31–40	24	18.9%	18	21.7%	6	13.6%
41–50	23	18.1%	10	12%	13	29.5%
50+	28	22%	15	18.1%	13	29.5%
Military experience	127		83	65.4%	44	34.6%
None	111	87.4%	73	88%	38	86.4%
Previous	11	8.7%	4	4.8%	1	2.3%
Current	5	3.9%	6	7.2%	5	11.4%
Relationship Status	127		83	65.4%	44	34.6%
Single	48	37.8%	35	42.2%	13	29.5%
Married	63	49.6%	39	47%	24	54.5%
Living with partner	9	7.1%	6	7.2%	3	6.8%
Separated	1	0.8%	0	0%	1	2.3%
Divorced	3	2.4%	1	1.2%	2	4.5%
Widowed	3	2.4%	2	2.4%	1	2.3%

Baseline Characteristics	Population		Traditional			CBE
	N/n	%	*n*		*N/n*	%
Employment	127		83	65.4%	44	34.6%
Full-Time	67	52.8%	37	44.6%	30	68.2%
Part-Time	40	31.5%	33	39.8%	7	15.9%
Unemployed	20	15.%	13	15.7%	7	15.9%

There were more traditional female respondents (55.4%), but there were more male CBE respondents (52.3%). Participants in both online modalities were predominantly White in ethnicity (traditional 61.4% and CBE 68.2%). There were some differences in age between the two groups. Traditional respondents were predominantly 23 to 30 years of age (32.5%) while CBE respondents were 41 to 50 years of age (29.5%) or over 50 years of age (29.5%). Most respondents had no military experience (traditional 88% and CBE 86.4%). There was a difference in relationship status between both modalities. Traditional respondents were predominantly single (42.2%) while CBE respondents were predominantly married (54.5%). Both modalities were predominantly employed full-time (traditional 44.6% and CBE 68.2%). In summary, there were some demographic similarities between modalities, but also some noteworthy differences. Both groups were predominantly White, had no military experience, and were employed full-time. However, the traditional online respondents were mostly women, 23 to 30 years of age, and single. The CBE online respondents were mostly male, over the age of 41, and married. Table 3 provides information about course satisfaction and quality assessment.

Table 3

Course Satisfaction and Quality Assessment

Baseline Characteristics	Total Population		Traditional		CBE	
	N/n	%	*n*	%	*n*	%
Student Satisfaction	127		83		44	
Course Satisfaction						
Highly dissatisfied	1	0.8%	1	1.2%	0	0%
Dissatisfied	8	6.3%	6	7.2%	2	4.5%
Neutral	39	30.7%	26	31.3%	13	29.5%
Satisfied	50	39.4%	31	37.3%	19	43.2%
Highly Dissatisfied	29	22.8%	19	22.9%	10	22.7%
Course Quality						
Highly dissatisfied	1	0.8%	0	0%	1	2.3%
Dissatisfied	11	8.7%	10	12%	1	2.3%
Neutral	31	24.4%	19	22.9%	12	27.3%
Satisfied	53	41.7%	34	41%	19	43.2%
Highly Dissatisfied	31	24.4%	20	24.1%	11	25%

Table 3 provides responses to two of the questions on the survey, which inquired about student satisfaction with the course and student perception of the quality of the course. In both course type modalities, most respondents (nearly 70%) were satisfied or highly satisfied with the course they were evaluating for course quality.

Study Results

This study was designed to determine whether course modality (traditional online and CBE online) and dialogue (learner–learner, learner–instructor, and learner–content) predicted student success (final course grade). The independent predictor variables were the course modalities and the different forms of dialogue. The dependent or outcome variable (categories of final course grade) was an ordinal variable; therefore, ordinal logistic regression was used to analyze the data.

Research Questions

The purpose of this nonexperimental quantitative study was to determine whether course modality (traditional online and CBE online) and dialogue (learner–learner, learner–instructor, and learner–content) predict student success (final course grade). The primary research question in this study addressed whether online course modality type (traditional online versus CBE online) and dialogue (learner–learner, learner–instructor, and learner–content interaction) predict student success.

H_0: Online course modality and dialogue do not predict student success.

H_1: Online course modality and dialogue predict student success.

There were four research subquestions in the study. The results of each research question are provided in the following sections.

Hypothesis 1

The purpose of the first research question was to determine whether online course modality (traditional online or CBE online) was a significant predictor of student success?

H_{01}: Course modality (traditional online or CBE online) is not a significant predictor of student success.

H_{a1}: Course modality (traditional online or CBE online) is a significant predictor of student success.

Parameter estimates indicated that online course modality was not a significant predictor of student success (Wald $x^2(1) = 5.15$, $p = .473$, 95% CI [-.985, .457]).

Hypothesis 2

The purpose of the second research question was to determine whether dialogue, specifically learner–learner interaction, was a significant predictor of student success.

H_{02}: Dialogue (learner–learner interaction) is not a significant predictor of student success.

H_{a2}: Dialogue (learner–learner interaction) is a significant predictor of student success.

Parameter estimates indicated that online course modality was marginal in not being a significant predictor of student success (Wald $x^2(1) = 3.747$, $p = .053$, 95% CI [-.005, .810]). Had the predictor been significant for every one unit of increase in the learner–learner subscore, there was a predicted increase of .402 in the log odds of being in a lower grade category.

Hypothesis 3

The third research question addressed whether dialogue, specifically learner–instructor interaction, was a significant predictor of student success.

H_{03}: Dialogue (learner–instructor interaction) is not a significant predictor of student success.

H_{a3}: Dialogue (learner–instructor interaction) is a significant predictor of student success.

Parameter estimates indicated that learner–instructor dialogue was a significant predictor of student success (Wald x2(1) = 5.816, $p = .017$, 95% CI [-1.477, -.153]). For every one

unit of increase in the learner–instructor subscore, there was a predicted decrease of .815 in the log odds of being in a higher grade category.

Hypothesis 4

The fourth research question aimed to determine if dialogue, specifically learner-content interaction, was a significant predictor of student success. Is dialogue (learner-content interaction) a significant predictor of student success?

H_{04}: Dialogue (learner-content interaction) is not a significant predictor of student success.

H_4: Dialogue (learner-content interaction) is a significant predictor of student success.

Parameter estimates indicated that online course modality was not a significant predictor of student success ($p = .678$). Had the predictor been significant, for every one unit of increase in the learner-content sub-score, there was a predicted increase of .167 in the log odds of being in a lower-grade category.

Table 4 represents the parameter estimates as in hypotheses 1-4. The threshold is broken down into four categories of final grades: (1) 4.0 or better, (2) 3.0-3.99, (3) 2.0-2.99 and (4) 1.0-1.99. The fifth category (F, 1.0 or less) was automatically dropped in SPSS because there were only three participants that reported in this category. Next there was course type (traditional online, CBE online) and the three types of dialogue: learner-instructor, learner-learner, and learner-content DELES sub-scores.

Table 4

Parameter Estimates

Parameter	ß	95% Wald Confidence Interval		Hypothesis Test			95% Wald Confidence Interval for Exp(ß)		
		Error	Upper	Lower	Wald Chi-Square	*df*	Sig.	Exp(ß)	Lower	Upper
Threshold										
4.+	-2.209	1.5361	-5.129	.802	2.067	1	.151	.110	.005	2.231
3.0-3.99	.309	1.5307	-2.691	3.310	.041	1	.840	1.363	.068	27.373
2.0-2.99	1.957	1.5795	-1.139	5.052	1.535	1	.215	7.076	.320	156.500
1.0-1.99	2.511	1.6152	-.654	5.677	2.417	1	.120	12.321	.520	292.090
Course Type	-.264	.3678	-.985	.457	.515	1	.473	.768	.373	1.57
L-Instructor[a]	-.815	.3425	-1.486	-.144	5.662	1	.017	.443	.226	.866
L-Learner[a]	.402	.2081	-.006	.810	3.736	1	.053	1.495	.994	2.248
L-Content	.167	.4013	-.620	.953	.173	1	.678	1.181	.538	2.594

Note: Dependent Variable: If you completed the course, what was your final grade in this course?
Model (Threshold): In which program are you currently enrolled or have been enrolled in the last 6 months?
Learner Instructor DELES subscore, Learner-Leaner DELES subscore, Learner-Content DELES subscore
a. Fixed at the displayed value

Assumptions Testing

Assumption 1: One Ordinal Outcome Variable

The dependent/ outcome variable was ordinal. The final grade was categorized into five ordered categories: 4.0 or better (A), 3.0 to 3.99 B), 2.0 to 2.99 (C), 1.0 to 1.99 (D), and less than a 1.0 (F). The original intent with the outcome variable was initially to collect each participant's specific GPA. The decision, however was made to instead categorize the final grade, which necessitated a change in statistical analysis from hierarchical multiple regression to ordinal logistic regression.

Assumption 2: One or More Predictor Variables That Are Continuous, Ordinal, or Categorical

The study included four predictor variables: course modality and three forms of dialogue (learner-learner, learner-instructor, and learner-content). Course modality was a binary categorical variable. Respondents identified as either traditional online (1) students or CBE online (2) students. There were three parts to dialogue: learner-instructor, learner-learner, and learner-content. These were measured using the DELES, which provided a sub-score for each; therefore, they were continuous variables.

Assumption 3: Proportional Odds

The assumption of proportional odds is paramount to ordinal logistic regression (Laerd Statistics, 2018). For each variable in the model, the slope estimate between two responses are assumed to be the same. This assumption was measured using a test of parallel lines. Ordinal logistic regression assumes that the relationship between the independent variables is the same across all combinations involving the dependent variable. The outcome was non-significant, therefore the assumption of proportional odds was met, $x^2(2) = 2.570$, $p = .998$.

Assumption 4: No Multicollinearity

The last assumption for ordinal logistic regression is having no multicollinearity, or significant correlation between two or more of the independent variables. Four statistical determinants of multicollinearity were analyzed. The tolerance threshold is 0.10. None of the predictor variables had a tolerance score at or below 0.10. The variance inflation factor (VIF) threshold for multicollinearity is 10 or higher. None of the predictor

variables had a VIF score of 10 or higher. The threshold for the condition index is 30 or higher. None of the predictor variables had a score of 30 or above. Lastly, the variance proportion scores were analyzed. The threshold is having two or more scores in one row that are above 0.50. None of the predictor variables had two or more scores in one row that were at or above 0.50. All four statistical outcomes provided evidence that there was no multicollinearity between predictor variables, therefore this assumption was met.

Goodness of Fit

Various tests were conducted to determine goodness of fit. Results of the Pearson Chi-Square test ($p = .725$) and the test of deviance ($p = 1.000$) both concluded that the model was a good fit to the data. The omnibus test also provided evidence of the model being a significant improvement in fit over the null ($p < .001$). Both results were good outcomes as it determined normal distribution in the data.

Summary of Assumptions

Despite the change from hierarchical multiple regression to ordinal logistic regression, all four assumptions were met. The goodness of fit tests were also met. The results reported in this section reflected the impact of the predictors to the outcome variable.

Summary

The study data yielded useful demographic data about the similarities and differences between traditional online students and CBE online students. The total population of study participants was predominantly traditional online students. The majority of traditional respondents who were taking a required course were women

between the ages of 23 and 30 and were single. Most CBE online student respondents who were taking an elective course were mostly men over the age of 41 and were married. Both groups were predominantly White, not using federal financial aid, had no military experience, and were employed full-time. Both modalities had the most responses that respondents were satisfied with their course and were satisfied with the overall quality of the course.

There were four research questions, and an ordinal logistic regression was used to analyze the data. All assumptions were met for this type of statistical analysis. The purpose of Research Question 1 was to determine if course modality (traditional or CBE) predicts student success (final course grade). The data indicated that modality was not a significant predictor of student success. The purpose of Research Questions 2 through 4 was to determine if dialogue (learner-learner, learner-instructor, and learner-content) predicts student success. Learner-learner and learner-content interactions were not significant predictors of student success. Learner-instructor interactions were determined to be a significant predictor of student success. For every one unit of increase on the learner-instructor interaction sub-score, there is a predicted increase of .815 in the log odds of being in a higher-grade category. In Chapter 5, there is further exploration of results, including interpretations, implications for positive social change, limitations of the study, recommendations, and implications.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this study was to determine whether course modality (traditional online, CBE online) and dialogue (learner–instructor, learner–learner, learner–content interactions) predict student success (final course grade). The DELES was used to measure dialogue. Participants self-reported course modality and final course grade in a survey on SurveyMonkey (see Appendix B). Participant recruitment through SurveyMonkey required individuals to be over the age of 18 and having completed or attempted an online course (traditional or CBE) within the last 6 months. Data were analyzed using ordinal logistic regression. Findings are discussed in this chapter.

Interpretation of the Findings

An ordinal logistic regression analysis was used to answer the four research questions. The first research question addressed whether course modality was a significant predictor of student success. Statistical analysis indicated that course modality was not a significant predictor of student success; therefore, traditional online students and CBE online students had equal likelihood for success. The second research question addressed whether learner–learner interactions were a significant predictor of student success. Although results were marginal, results indicated that learner–learner interactions were not a significant predictor of student success. The third research question addressed whether learner–instructor interactions were a significant predictor of student success. Results indicated that learner–instructor interactions were a significant predictor of student success. When there was an increase in learner–instructor interactions, there was a higher likelihood of a higher final course grade. The fourth

research question addressed whether learner–content interactions were a significant predictor of student success. Results indicated that learner–content interactions were not a significant predictor of student success. Results indicated that not all forms of dialogue in Moore's (1997) theory of transactional distance have equal influence on the likelihood of student success for online students.

Findings in Relationship to the Theoretical Framework

Moore's (1997) theory of transactional distance served as the theoretical framework for this study. Transactional distance can be described as the geographical gap between learners and instructors and the interpersonal implications for student success. One component of transactional distance is dialogue, which comprises three parts: (a) learner–learner interactions, (b) learner–instructor interactions, and (c) learner–content interactions. Various studies had been conducted to examine these three forms of dialogue. Some researchers observed positive outcomes associated with learner–learner interactions (Bettinger et al., 2016; Gering et al., 2018; Lowenthal, 2016) while others had prioritized learner–instructor interactions (Collins et al., 2019; Gering et al., 2018; Lockman & Shirmer, 2020; Phirangee et al., 2016). Results of the current study complemented the literature; that is, higher student perceptions of learner–instructor positive interactions predicted an increased likelihood of a higher course grade. The instructor's meaningful feedback, availability, and engagement were strong predictors of student success because course modality (traditional or CBE) was not a significant predictor. Learner–learner social interactions, although not statistically significant, showed a marginal degree of importance in predicting student success. Student

collaboration, interaction, and engagement had a marginal impact on student success. Learner–content interactions were not found to be a significant predictor of student success. Instructional presence and positive and supportive learner–instructor interactions were the most important predictors of student success. The format of the online course and the content being covered were far less important in terms of course grade as compared to the quality of the interactions between learners and their instructors and other learners. These findings provide an important contribution to higher education and course development.

Findings in Relationship to the Literature

Findings from this study may help fill a gap in the literature by providing quantitative and comparative outcomes for online students (see Croxton, 2014; Gallagher, 2014; Kelly & Columbus, 2016; Lacey & Murray, 2015; Parson et al., 2016). The literature indicated vast variation in CBE outcomes (Association of American Colleges and Universities, 2016; Integrated Postsecondary Educational Data System, 2012; Kelly & Columbus, 2016; Parson et al., 2016). Parson et al. (2016) argued the need for research to understand how different components may affect CBE outcomes. I examined the role of dialogue (learner–leaner, learner–instructor, and learner–content interactions). Parson et al. also argued the need for a valid comparison group. I compared traditional online students to CBE online students. Results from the present study indicated that 69% of traditional online students passed their course compared to 82% of CBE online students. Additionally, 31% of traditional online students had dropped, withdrew, or completed the course but did not receive a passing grade, compared to 18% of CBE students. These

results demonstrate a higher percentage of student success in CBE participants; however, despite the percentage differences in success between the two course types, statistical analysis of the predictors indicated that course modality was not a statistically significant predictor of student success (final course grade). Perhaps a deeper examination of each course modality in a future study would provide an explanation of the success differences within each.

Limitations of the Study

This study included participants from two online course modalities: traditional and CBE. This did not allow for student performance comparison to in-person students. Data from the in-person group may have yielded meaningful information. Also, I did not collect information about whether the course was synchronous or asynchronous. Various studies indicated that this course design component can have a significant impact on student outcomes (Bostock, 2018; Byrd, 2016; Estes, 2016). Bostock (2018) argued that when there is more structure and rigidity in course design, there tends to be less dialogue. Another limitation of the current study was the disproportionate number of participants who successfully passed the course (73%). It is conceivable that a more equal distribution of participants who had successfully completed the course and those who were not successful could have yielded different results. One final possible limitation was allowing for students who were taking a required course, as well as those taking an elective course. This could have impacted the predictors that were significant to the outcome in the results. In a repeated study, researchers could restrict participation to one or the other to create a more homogenous group.

Recommendations

In future research, it may be beneficial to make changes to the parameters for data collection. It may be useful to compare traditional online and CBE online to in-person outcomes. This comparison may provide a more comprehensive comparison and analysis of student outcomes. There were some academic and demographic variables that were supported in the literature that may be beneficial to add. One variable is whether the course being reported is synchronous or asynchronous (Bostock, 2018; Byrd, 2016; Estes, 2016). Other relevant variables supported in the literature included children/dependents. Wladis et al. (2016) found that online students with children under the age of 6 were more likely to drop out of their program. This finding, combined with other studies that have found that the average fully online student has children (NCES, 2018), would make the inclusion of having children a relevant addition to demographic data collected.

In efforts of obtaining a more balanced sample, it may also be beneficial to identify a recruitment method that is equally as likely to secure participants who had failed as compared to those who had been successful. In the current study, 73% of the participants had completed and passed the course that they were evaluating for purposes of this study. The results indicated that among the students who had passed the course they were reporting on, learner–instructor dialogue was the strongest predictor of success. In a more homogenous population with a more equal number of successful (passing) and unsuccessful (failing) students, it is possible that data analysis may yield different results.

Implications

In response to the COVID-19 pandemic, higher education was abruptly altered. Although some of the alterations were temporary, others had lasting implications. At the start of the pandemic, all in-person teaching was abruptly halted. Instructors who had never taught online were forced into online education. Learners who had never taken an online course were forced to become online students. Arguably, there was a gross lack of training and preparation. I collected data in 2022, 2 years after the start of the pandemic. Respondents were asked about their previous online experience. In the total sample, nearly half (45%) had taken some online courses (other response options were many, most, and none). Whether prompted by the COVID-19 pandemic or personal choice, online enrollment continues to increase at a steady rate (NCES, 2018). Despite enrollment increases in online education, there continues to be a disproportionately lower success rate in online education as compared to in-person courses (Peck et al., 2018; Radovan, 2019). Higher education institutions and educators have a responsibility to identify reasons for the disparity and to make necessary adjustments. The current study contributed to the literature by identifying success variables (learner–instructor dialogue) which may influence positive social change.

Conclusion

The purpose of this study was to determine whether course type (traditional online and CBE online) and dialogue (learner–instructor, learner–learner, and learner–content) predict student success. Success was measured by receiving a passing course grade. I also sought to fill a gap in the literature by comparing demographics between traditional

online students and CBE online students. Results of this study indicated that course modality was not a significant predictor of student success. However, the results indicated that learner–instructor dialogue was a significant predictor of student success and potentially is the most important factor in any course type whether online or in person, which should be further explored. Although not significant, learner–learner interactions were found to have a marginal impact on student success. Course design and course content were not predictive of student success. The quality of interactions between learners and instructors was a significant predictor of a student receiving a passing grade and successfully completing a course. The quality of interactions between learners and other learners had a marginal (near significance) impact on the likelihood of student success. The results also showed some demographic differences between traditional online students and CBE online students. Most traditional online respondents were women between the ages of 23 and 30 who were single. Most CBE respondents were men over the age of 41 who were married. Such differences may need further exploration in future studies. There were also some similarities between the groups. In both online groups, most students were White, were employed full-time, did not have any military experience, and were not using federal financial aid**.** The results of this study may be used to inform program and course development to increase the likelihood of student success for online students.

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Appendix A: Debriefing Response

Course Modality and Dialogue as Predictors of Postsecondary Student Success in Online

Greetings,

Thank you for participating in this study. The purpose of this study was to explore the influence of online course type (traditional or competency-based education) and dialogue (learner-learner, learner-instructor, learner-content interactions) on student retention. There was no deception in this study. All participants completed the DELES and the demographic survey. The responses will be compared between traditional online students and CBE students. Demographic information will also be compared between traditional online students and CBE online students. Formal results have not yet been analyzed.

Once completed, my dissertation will also be archived and accessible through Walden University. I have listed my contact information below, as well as Walden University contacts. Thank you again for your support and contribution.

Sincerely,
Danielle Lawson

Appendix B: Demographic Survey

In which program are you currently enrolled or have been enrolled in the last 6 months? (check one)

_____ Traditional online courses
_____ CBE online courses

Identify whether the last online course that you were enrolled in was a required course or an elective course. If you took more than one course at the same time, you must select and identify ONE.

Was the course a required course? yes or no
Was the course an elective? yes or no

Which is true of this course?
____ I was dropped from the course
____ I withdrew from the course
____ I completed the course but did not receive a passing grade
____ I completed the course with a passing grade

If you completed the course, what was your final grade in this course? (check one)
____4.0
____3.5-3.99
____3.0-3.49
____ 2.51-2.9
____less than 2.5

If you did not successfully complete your course, select an option for your future plans.
____I will try to take the course again
____I have/ may change my program
____I will/ have dropped out from my program
____I am no longer in school

Which most accurately represents your enrollment?
____ It was my intention to be in an online program
____ I was forced into online learning because of COVID-19 school in-classroom restrictions

What is your gender? (check one)
_____ Male
_____ Female
_____ Non-binary
_____ Choose not to respond

What is your race?
_____ American Indian or Alaska Native
_____ Asian
_____ White
_____ Black or African American
_____ Hispanic or Latino
_____ Native Hawaiian or Pacific Islander
_____ Choose not to respond

Age
What age group are you?
_____ 18-22
_____23-30
_____31-40
_____41-50
_____50+

Military experience
_____ None
_____ Previous
_____ Currently serving

Financial Support

Are you receiving government financial aid? Yes or No

College experience and performance

Are you currently enrolled full-time (12 or more hours)? yes or no
Are you currently enrolled part time (1-11 hours) __yes or no_____

What is your current GPA? (select one)
_____ 3.75-4.0
_____ 3.5-3.75
_____ 3.0-3.5
_____ 2.5-3.0
_____ 2.0-2.5
_____ under 2.0
_____ I am not sure

What degree are you currently pursuing? (check one)
_____ Associates

_____ Bachelors
_____ Masters
_____ Doctorate
_____ Specific certification
_____ None
_____ Other

Which is true of your college experience?
_____ I have taken some online courses
_____ I have taken many online courses
_____ Most of my college education has been online courses
_____ I have never taken an online course

Relationships

Which best describes your current status? (check one)
_____ Single/ not married
_____ Married
_____ Living with a partner
_____ Separated
_____ Divorced
_____ Widowed

Employment

Are you working while going to school? yes or no
Working full time? yes or no
Working part time? yes or no

Student Satisfaction & Course Quality

On a scale of 1-5 how satisfied were you with the course you are reporting in this survey?

____1= highly dissatisfied
____2= dissatisfied
____3= neutral
____4= satisfied
____5= highly satisfied

10= highly satisfied

On a scale of 1-5 how would you rate the quality of your course you are reporting in this survey?

____1= highly dissatisfied
____2= dissatisfied
____3= neutral
____4= satisfied
____5= highly satisfied