Measuring the Ability of a Readiness Course to Improve Online Student Success at a Two-Year Technical College

James Devin Henson

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MEASURING THE ABILITY OF A READINESS COURSE TO IMPROVE ONLINE
STUDENT SUCCESS AT A TWO-YEAR TECHNICAL COLLEGE

by

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For the Degree of Doctor of Education in
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DEDICATION

To my family, thank you for being so patient with me through this process. It has been many late nights and weekends but this journey is now over. I look forward to spending lots of time relaxing with all three of you. I love you all and could not have done this without your support.

Kathy, I know well the strain you have felt through this process as a wife and working mom. Please know how much I appreciate all the sacrifices you have made personally and professionally to allow me to go on this journey. You did an amazing job taking care of things at home so that I could focus on my schoolwork and research.

Anna Claire and Charlie, you two will always be my greatest accomplishment. I hope you both carry on my passion for learning and realize that learning never stops, no matter how old you are.
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ABSTRACT

Despite the continued growth of online enrollments nationwide, students consistently are not as successful in online courses as traditional face-to-face courses. The challenges are magnified in the two-year college environment, which has a disproportionately high percentage of low-income or minority students compared to four-year universities. This action research study uses a convergent parallel mixed methods design to study the effectiveness of a mandatory readiness course for online students at a two-year college in South Carolina to increase student success. Specifically, this study examined how and to what extent taking an online readiness course impacted online student success, students’ perceptions of the readiness course with respect to its effectiveness in preparing them for online learning, and faculty’s perceptions of the readiness course with respect to its effectiveness in preparing students for online learning. End-of-course student grades of 1,126 readiness course completers were compared to historical data prior to the implementation of the readiness course to determine if the readiness course had an impact on student success. A total of 220 readiness course completers and 39 online faculty responded to surveys gauging their perceived effectiveness of the readiness course. Ten students and faculty were then interviewed one-on-one to reveal their more in-depth perceptions regarding the readiness course’s effectiveness in preparing students for the online environment. A chi-square test for independence on the end-of-course grades indicated that there was a statistically significant increase in online student success comparing a term before the
implementation of the readiness course to a term after its implementation. The qualitative surveys and interviews indicated that the readiness course enhanced many skills necessary to be successful in the online environment, including familiarity with the learning management system and students’ communication skills. Overall, students and faculty both perceived the readiness course to be a useful online learning resource. The study also found that the readiness course was unable to positively impact students’ time management skills. Additionally, external factors were found that negatively impacted student success that were outside the readiness course’s ability to impact, such as work and childcare obligations or poor navigational structure of online courses.
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CHAPTER 1: INTRODUCTION

National Context

Nationwide, community college students are not as successful in online courses as they are in on-campus courses (Jaggars, Edgecombe, & Stacey, 2013; Xu & Jaggars, 2013). Taking an online course has also been shown to have a negative effect on graduation (Huntington-Klein, Cowan, & Goldhaber, 2017). Also, students have withdrawal rates that are 7% to 20% higher in online courses compared to their face-to-face counterparts, with overall withdrawal rates of 30% to 40% (Boston & Ice, 2011; Wladis, Conway, & Hachey, 2017).

Despite the lower success and completion rates, enrollment in online programs continues to surge ahead. Allen and Seaman (2010) state that “online enrollments have continued to grow at rates far in excess of the total higher education student population” (p. 2). Online learning provides valuable access to education for working adults, learners with children, individuals with disabilities that limit their ability to travel, and other life circumstances that present challenges to obtaining a traditional college education (Van Rooij & Zirkle, 2016; Yowe, 2017). While there have been notable efforts to support this new population of online learners, the urgency to ensure online student success and retention is especially high at two-year institutions (Jaggars et al., 2013; Xu & Jaggars, 2013). The American Association of Community Colleges (2012) estimates that community colleges serve nearly half of the undergraduate population in the United States. Many students who attend two-year colleges are low income or minority students
Online courses and programs provide a means of access to education for these diverse groups of students. Currently, though, online courses present educational equity issues by exacerbating pre-existing performance and achievement gaps. For example, Xu and Jaggars (2014) report that “…males, Black students, and students with lower levels of academic preparation had significantly stronger online performance gaps compared with their counterparts” (p. 651). It is important that increases in access to education through online learning be accompanied by student success, program completion, and student satisfaction. Without these components, students will not be able to meet their academic goals.

To be successful academically, online students must utilize a different skillset from their counterparts who enroll in face-to-face courses (Bozarth, Chapman, & LaMonica, 2004). According to Nash (2005), one of the main contributing factors to online student success is setting expectations for students prior to entering the online environment. Students should be equipped with time management skills, know how to navigate the learning management system, be aware of available help resources, and more prior to beginning their first online course.

Many students are not aware of these skills or expectations before enrolling in an online course. However, colleges and universities across the country have been successful in implementing readiness courses for online students (Davis, 2013; Dray, Lowenthal, Miszkiewicz, Ruiz-Primo, & Marczynski, 2011; Koehnke, 2013). An online readiness course is similar to a college orientation, but is designed to introduce students to the online learning environment, make students aware of the rigor of distance education, share requisite technology skills, and boost students’ confidence levels prior to
beginning an online course (Wozniak, Pizzica, & Mahony, 2012). If a student has not yet
taken an online course, the first course he or she takes online requires the student to learn
in a new modality of instruction, while also keeping up with the academic requirements
of the course. Student readiness courses offer students the opportunity to familiarize
themselves with the landscape of online learning before entering their first online course.
Upon completion of the readiness course, students are able to focus primarily on the
academics of their first online course.

The initiative to improve online student success is timely, as increasing regulatory
pressure is beginning to be applied to online programs nationwide. The U.S. Department
of Education has recently displayed an interest in ensuring the quality and completion
rates of online programs (Bergeron, 2016).

**Local Context**

Midlands Technical College (MTC) is a large-sized two-year technical college in
Columbia, SC, with an annual full-time equivalency (FTE) enrollment of approximately
7,700 (“Carnegie,” n.d.; “MTC Annualized,” 2017). FTE is a measurement of enrollment
that takes into account students who may not be taking a full load of courses. FTE is
computed by taking the total credit hours registered by students across the college and
dividing by the number of credit hours in a full load of courses, which is 12 credit hours
at MTC. FTE is a metric that allows two-year colleges, which have large numbers of
part-time students, to compare enrollments. The average age of full-time MTC students is
25 years old, and the average age of part-time students is 27 years old (“MTC Fact
Book” 2017).
MTC has experienced a trend with respect to online student enrollment that is consistent with the national trend. While on-ground enrollment has declined in recent years, enrollment in online courses at MTC has slightly increased each year. This means online enrollment is increasingly becoming a larger percentage of the overall college enrollment as shown in the following figure:

![Figure 1.1. Percentage of total course enrollments at Midlands Technical College.](image)

As recently as the 2018-2019 academic year, online enrollment made up 19% of all student enrollment at MTC, and 34% of students were enrolled in at least one online course. However, student success rates, defined as the rate of students receiving a C or
better in the course, in online courses have lagged substantially behind face-to-face counterparts.

MTC is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). Each college in the SACSCOC region must undergo a reaccreditation process every ten years. SACSCOC Core Requirement 7.2 states that as part of the reaccreditation process, every institution must develop an acceptable Quality Enhancement Plan (QEP) that “reflects and affirms a commitment to enhance overall institutional quality and effectiveness by focusing on an issue that the institution considers important to improving student learning outcomes and/or student success” (“QEP Guidelines” 2018, p. 1). In 2017, faculty, staff, and student stakeholders were engaged in identifying possible QEP topics. Improving online student success was a common topic submitted for consideration, and ultimately MTC chose the field of online learning as the focus of their QEP as a part of their 2020 SACSCOC reaccreditation. The title of MTC’s QEP was M.O.R.E: Maximizing Online Readiness and Excellence. As the former Director of Online Learning at MTC, the MTC Executive Council, composed of the President, Provost, and Vice Presidents, as well as other key leaders of the college, asked if I would lead the QEP initiative as the Director of the QEP. This study will explore the effectiveness of one of the key interventions implemented prior to the Spring 2020 semester as part of the QEP, namely a student readiness course, designed to improve online student success. MTC must continue to strive to prepare online students for success as they begin their educational journey. The focus of this study relates to helping students be successful in the online environment.
Statement of the Problem

Two-year college students in online courses are not as successful as students enrolled in traditional on-ground courses (Xu & Jaggars, 2013). In particular, the success rate for online students at MTC was lower than students enrolled in on-ground courses. Some online students at MTC lack the academic skills and knowledge necessary to be successful in an online course. In an attempt to address this challenge, a mandatory readiness course for online learners was implemented at MTC, but prior to this study, it was unclear whether this readiness course positively impacted online student success.

Purpose Statement

The purpose of this action research was to evaluate the effectiveness of an online readiness course in enhancing online students’ success at Midlands Technical College.

Research Questions

1. How and to what extent does taking an online readiness course impact online student success at Midlands Technical College?
2. What are students’ perceptions of the readiness course with respect to its effectiveness in preparing them for online learning?
3. What are faculty’s perceptions of the readiness course with respect to its effectiveness in preparing students for online learning?

Statement of Research Subjectivities and Positionality

I am currently the Associate Vice Provost at Midlands Technical College (MTC) in Columbia, South Carolina. Until recently, I held the position of Director of Online Teaching and Learning for over four years. Prior to that position, I was a mathematics instructor at MTC for over seven years where I taught both face-to-face and online
courses. MTC recently went through a reaccreditation process through the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). I am the Director of the Quality Enhancement Plan (QEP) portion of the reaccreditation process.

I have had the good fortune of experiencing online learning through the eyes of a student, instructor, and administrator. When done well, I believe online education provides the same or higher quality of instruction as traditional face-to-face instruction. It provides students the ability to learn anywhere and at any time. Unfortunately, I feel that in its early days, online learning grew too large and too fast at most academic institutions, and now colleges and universities are playing catch-up trying to ensure quality in the online environment. According to Lokken and Slimp (2017), “when online learning arrived, it did not require deep pockets to implement, and community college students were in particular need of this alternative to f2f [face-to-face] on-campus courses due to their life circumstances and needs” (p. 74). However, with appropriate interventions, I believe colleges and universities can drastically improve student success and completion rates. During my time as an online mathematics instructor, I saw students who were not adequately prepared to be successful in the online environment. Many had poor time management skills or technical skills, or students were over-committed in their personal lives. I believe preparing students to enter the online environment is critical to their online success.

My previous and current roles have stoked my research interests in improving student success in the online environment. The paradigm that best fits my personality, belief structure, formal training is pragmatism (Creswell, 2014). The aspect that is most appealing to me about the pragmatic paradigm is its ontology. I agree with its
presupposition that there is one reality and that each person experiences this one reality from a different perspective (Mertens, 2009). According to Levy (2007), students nationwide have lower success rates and higher withdrawal rates in online courses than traditional face-to-face courses. It is my belief that there are underlying causes, perhaps even complex ones, which lead to lower student success rates. It is my responsibility as a researcher to uncover this reality in order to develop solutions to the problem.

I see my positionality for this study as one of an insider in collaboration with other insiders. As an administrator working at MTC, I worked with various committees on developing the intervention administered through this study. Due to my position as the Associate Vice Provost, and as the Director of the QEP, I have a vested interest in ensuring the improvement of student success and retention rates of online students. As Associate Vice Provost, most academic departments fall under my supervision. As such, a power imbalance existed in this research study. To lessen the impact of this power imbalance, I made every attempt to ensure students and faculty felt comfortable working with me and understood that no statements, positions, or feedback they provided related to the research project would negatively impact students’ grades or faculty’s employment or standing.

**Definition of Terms**

This study will include the following key variables and terms:

**On-ground Course:** A course in which the instruction is delivered face-to-face on MTC campuses. These courses may have online components such as homework or assigned activities, but the instruction occurs physically on MTC campuses on specific days and times.
**Online Course:** An online course is a course in which 100% of the instruction is delivered asynchronously online. In these classes, students are provided readings, videos, activities, and assignments with due dates. Synchronous online courses, which meet on specific days and times via web conferencing software, are not considered in this study.

**Online Student:** Online students are enrolled in fully online courses. Online students must complete the readiness course prior to enrolling in their first asynchronous online course. The readiness course will be optional for online students who have already successfully completed an online course. Students who have not yet been successful in any online course, such as due to failures or withdrawals, will be required to participate in the readiness course prior to enrolling in their next asynchronous online course.

**Readiness Course:** A readiness course is a course that prepares students for the online environment. It covers various topics, including, but not limited to, student expectations for the online mode of instructional delivery, necessary technical skills, and available academic help resources. The particular readiness course implemented at MTC is titled “Virtual Backpack”.

**Student Success Rate:** Student success rate is a ratio of the number of students who receive a C or better in a course compared to the total enrollment of the course. Success rates can also be aggregated across multiple courses. Within this study, success rates are aggregated across all online sections at MTC, restricted to online first-time online students.

**Virtual Backpack Course:** The Virtual Backpack course is the primary intervention studied in this research project. It is a mandatory online readiness course
designed to prepare students for the online environment. The Virtual Backpack course must be completed prior to a student registering for their first asynchronous online class.

**Withdrawal Rate**: Withdrawal rate is a ratio of the number of students who receive a grade of W or WF for the course compared to the overall enrollment for the course. These students either withdraw from the course or are withdrawn by the instructor for non-participation.
CHAPTER 2: LITERATURE REVIEW

The purpose of this action research was to evaluate the effects of a readiness course for online students on student success at Midlands Technical College. The review of related literature focuses on the main research questions of 1) “How and to what extent does taking an online readiness course impact online student success at Midlands Technical College?” 2) “What are students’ perceptions of the readiness course with respect to its effectiveness in preparing them for online learning?” and 3) “What are faculty’s perceptions of the readiness course with respect to its effectiveness in preparing students for online learning?”

In my search for relevant literature, a variety of strategies were employed to locate high-quality resources. The primary sources of relevant information were journal databases through the University of South Carolina library website. Specifically, the main databases used were ERIC and Education Source for academic journals and ProQuest Dissertations and Theses for doctoral dissertations. Once a relevant article was discovered, it was further mined for additional relevant articles using its references section. Mendeley software was used to organize, tag, and annotate collected journal articles and dissertations. Another source of research articles was a regular list of Mendeley articles that were emailed every week for approximately a year and a half. Mendeley reviews articles within an account and searches for similar articles of interest using a proprietary algorithm.
As online enrollment continues to grow nationwide, it is imperative that higher education institutions ensure their students are successful in the online mode of instruction. One way to potentially improve online student success is through the utilization of a mandatory readiness course that students must complete prior to enrolling in their first online class. A thorough review of the literature was conducted to examine what has already been studied in this area. The resulting literature review is organized into six main units, including (a) the growth of online enrollment, (b) student success in online learning, (c) student readiness for online learning, (d) strategies to prepare students for online learning, (e) impact of online readiness courses on student readiness and success, and (f) theoretical framework.

**Growth of Online Enrollment**

To motivate the significance of this research project, the reader must understand why and how online education has grown since its inception. This section will include (a) a definition of online education, (b) online enrollment patterns, and (c) the convenience and flexibility of online education.

**Definition of Online Education**

It is challenging to adequately define online courses or programs as courses in many higher education institutions today have online components, regardless of whether the course is taught in a brick and mortar classroom or a true online environment. The Online Learning Consortium, which touts itself as the leading professional organization for advancing the quality of online learning, defines online courses as having “at least 80 percent of the course content is delivered online” (Allen, Seaman, Poulin, & Straut, 2016, p. 7). Caruth and Caruth (2013) provide a straightforward definition of online courses
that states “online and internet courses are defined as courses that deliver material entirely online and students interact with instructors entirely online” (p. 142). This definition aligns with the South Carolina Technical College System (SCTCS) data dictionary, which states that an online course is a course in which “all (100 percent) of the instruction is delivered via Internet” (SCTCS Data Dictionary, n.d., p. 3). The SCTCS definition is important to this research project because the local context of this research occurs at Midlands Technical College, which is one of the 16 SCTCS institutions. Concerning fully online programs, Cejda (2010) states that there are “discrepancies in determining exactly what constitutes an online program” (p. 9). This is because there is no common metric that dictates what percentage must be online to be considered an online program.

**Online Enrollment Patterns**

Online enrollment, especially at two-year community colleges, has increased aggressively and consistently since its inception. Jaggars, Edgecombe, and Stacey (2013) report that by 2008, “97 percent of two-year colleges were offering online courses—compared with only 66 percent of all postsecondary institutions” (p. 1). According to Allen, Seaman, and Poulin (2016), online education enrollments “continue to grow at a healthy rate, showing a 7% increase overall between fall 2012 and fall 2014” (p. 13). It is interesting to note that, in many cases, online education is increasing despite declining on-ground enrollment. In fact, Allen et al. (2016) state that “many institutions are continuing to add distance education programs and grow existing ones even while campus-based enrollments are declining” (p. 13).
Convenience and Flexibility of Online Education

One reason online education has expanded at such a rapid rate is the convenience and flexibility of online courses and programs (Davis, 2006; Xu & Jaggars, 2013; Yowe, 2017). Park and Choi (2009) discuss how online courses are more convenient and flexible to align with students’ busy lives. Working adults or students who have childcare obligations may opt to take online courses as well (Bambara, Harbour, Davies, & Athey, 2009; Boston & Ice, 2011). Due to mobility issues or level of comfort being in social settings, online courses also tend to attract students with disabilities (Van Rooij & Zirkle, 2016; Yowe, 2017).

Student Success in Online Learning

As online education continues to grow steadily nationwide colleges and universities must ensure that students are being successful within this mode of instruction. To apply interventions to help students be more successful in online courses and programs, researchers must first gauge the degree to which online learners are successful currently. This section will begin by exploring the definitions of student success. The remainder of the section will be devoted to other various considerations related to online student success.

Defining Student Success

Academic achievement can be generally defined as achieving a particular result in an online assignment, exam, subject, or degree, and is typically expressed in terms of a numerical grade or grade point average (Hao, 2016; Richardson, Abraham, & Bond, 2012; Wei & Chou, 2020). Some studies define student success in terms of a combination of scores on activities within the course, such as exam scores, discussion posts, and
scores on class assignments (Wei & Chou, 2020). Akpom (2013) states that a student is successful in a particular course when the “final grade in the course is an A, B, or C” (p. 8). This study will define student success as Akpom describes, whereby a student is deemed successful in a course if they earn a C or better as their final grade in that particular course. For this study, student success will be aggregated across all enrollments for a particular mode of instruction, such as across all online or on-ground courses.

**Considerations Related to Online Student Success**

As demonstrated by the purpose statement and research questions in this study, online student success was one of the primary constructs within this research project. In this section we will discuss various considerations related to online student success, including (a) success rates in online courses, (b) withdrawal rates in online courses, (c) retention rates in online programs, and (d) equity gaps in online courses and programs.

**Success rates in online courses.** Despite the rapid growth of online enrollment nationwide, students in online courses are not as successful as students in traditional on-campus courses (Carr, 2000; Figlio, Rush, & Yin, 2010; Jaggars et al., 2013; Tyler-Smith, 2006). This is particularly true for students at two-year institutions. Jaggars and Xu (2013) report that percentages of students earning grades of failing, withdrawn, or withdrawn failing are higher for two-year online students compared to four-year online students. According to McInerney and Roberts (2004), students who are new to online learning often feel lost and socially isolated. Many students who take online courses often do not have the technical skills required to be successful (Atack & Rankin, 2002; Ratliff, 2009).
Due to open-door enrollment policies, community colleges also often have a higher concentration of underprepared students and higher numbers of part-time students compared to four-year institutions, all of which contribute to lower student success rates (Fike & Fike, 2008).

**Withdrawal rates in online courses.** Students tend to withdraw from online courses at a higher rate than their face-to-face counterparts (Ali & Leeds, 2009; Aragon & Johnson, 2008; Lee & Choi, 2011). According to Lee and Choi (2011), there are a variety of internal and external factors that contribute to these high withdrawal rates, including important studenting skills such as time management or technology competence, psychological attributes such as motivation, self-efficacy, or satisfaction. Many online learners withdraw from courses due to a lack of engagement and a feeling of isolation (McInerney & Roberts, 2004; Willging & Johnson, 2009; Yuan & Kim, 2014). Park and Choi (2009) mention additional factors that impact persistence in online courses, including personal issues such as health, scheduling conflicts, financial problems, and family issues. Some of these life factors prove difficult for researchers to apply interventions towards, since these factors lie outside the control of the institutions.

**Retention rates in online programs.** In addition to high withdrawal rates in online courses, colleges also struggle to retain online students year after year within a given program. Pascarella and Terenzini (2005) define retention as “progressive re-enrollment, whether continuous from one term to the next, or temporarily interrupted and then resumed, until completion with a degree” (p. 374). According to Provasnik and Plany (2008), two-year colleges have lower persistence and retention rates than four-year institutions due to the nature of their underprepared student populations. According to a
study by Huntington-Klein et al. (2017), the students who “took online courses saw worse learning outcomes and were less likely to persist in the field or to graduation than if they had selected the face-to-face version of the same course” (p. 265).

**Equity gaps in online courses and programs.** Online courses also present an educational equity issue by exacerbating pre-existing performance and achievement gaps (Jaggars et al., 2013; Xu & Jaggars, 2014). According to Xu and Jaggars (2014), “specifically, males, Black students, and students with lower levels of academic preparation had significantly stronger online performance gaps compared with their counterparts” (p. 651). A study by Conway, Wladis, and Hachey (2015) indicates that minorities are likely to have lower success rates and higher withdrawal rates in online courses than White students. This equity gap is strongly felt at two-year colleges in particular because they serve a high percentage of minority and low-income students. In fact, the majority of students enrolled in online classes and programs across the nation were enrolled in community colleges (Lewis & Parsad, 2008; Radford, 2011). While equity gaps are a concern that should be studied, this particular research study focused on the online student population as a whole and did not address performance based on race, gender, or other demographic.

**Student Readiness for Online Learning**

One strategy to improve student success is to ensure learners are ready to enter the online environment prior to enrollment. Institutions may choose to make these readiness strategies optional or mandatory. These readiness interventions may be focused on simply making the student aware if they are ready or not for online learning, or deliver instruction to equip them with the skills necessary to be ready. In this section we will (a)
define student readiness and (b) explore student and faculty perceptions about online student readiness.

Defining and Measuring Student Readiness

Liu and Roberts-Kaye (2015) define online student readiness as “cognitive awareness and maturity that a student develops for successful learning in a Web-based environment. It manifests in the attributes of recognizing the self-directed nature, formulating learning strategies, obtaining technology competencies, adjusting to digital etiquettes, and being open for help-seeking” (p. 242). Researchers have found that students’ online learning readiness has an impact on their level of academic success (Mosa, Mahrin, & Ibrrahim, 2016; Yilmaz, 2017).

One of the earliest mechanisms to study online student readiness was a survey developed by Mattice and Dixon (Mattice & Dixon, 1999). Their survey measured students’ readiness for online learning, comfort level with technology, and interest in online programs. In particular, their student readiness measurement instrument included students' self-direction, orientation to time, preferences for feedback, and students' previous experience with distance education.

Another early instrument used to study online student readiness was developed by McVay (2000), which was called the McVay Readiness for Online Learning questionnaire. The 13-item questionnaire asked students about personal characteristics necessary to be a successful online student, such as their ability to communicate electronically, time management skills, intrinsic motivation, and ability to work independently.
While McVay did not formally provide a definition for student readiness, components of the questionnaire reveal McVay’s indicators of student readiness. These indicators include proficiency with e-learning technologies, motivation and self-efficacy, self-discipline, and appropriate time management skills (McVay, 2000). Smith, Murphy, and Mahoney (2003) later studied the validity of the McVay Readiness for Online Learning Questionnaire and the results showed the instrument to have promising reliability characteristics.

A more recent instrument used to measure online student readiness is the Student Online Learning Readiness Instrument (SOLR), developed by Yu and Richardson (2015). The SOLR instrument consists of 20 self-reported items in such categories as social competencies with the instructor, social competencies with classmates, communication competencies, and technical competencies. Using confirmatory factor analysis, Yu (2018) has determined that “the SOLR instrument can be used to measure the students’ level of readiness for online learning before they take an online course” (p. 284). Liu (2019) later furthered the research of the SOLR instrument and concluded in another study that completing an online orientation has an impact on online student success.

One interesting study by Kerr, Rynearson, and Kerr (2006) conducted an extensive search of educational institutions of any kind, including community colleges, technical schools, four-year colleges and universities, public and private institutions, and high schools, that offered online courses as well as a self-assessment to determine readiness for online learning. The researchers aggregated the individual survey items from 50 randomly selected self-assessments from various institutions and deduplicated the 428 total individual survey items into 68 unique items. These items were then coded
based on similarities which resulted in six common issues, including computer skills, time management, motivation, academic skills such as reading and writing, the need for online delivery, and learning skills.

**Perceptions about Readiness**

When discussing students' level of readiness for online learning, it is helpful to consider students’ and faculty’s perceptions of how ready students are to begin online learning. This section will explore (a) students’ perceptions of their readiness and (b) faculty’s perception of student readiness for the students they teach.

**Student perceptions of student readiness for online courses.** When attempting to impact student readiness, it is helpful to have an understanding of how ready students feel about their own level of readiness to begin an online course or program. Fetzner (2013) interviewed unsuccessful online students, asking “What advice would you give to students who are considering registering for an online course” (p. 16). This question indirectly exposes a student’s self-efficacy to online learning because to provide another student with advice on what is critical to online success, the student has to think about what characteristics would make him or her ready to be successful in the online environment. Fetzner (2013) notes that the majority of comments referenced “soft skills” (p. 17). The top four pieces of advice are all related to soft skills, such as staying up with the course activities, using good time management skills, using good organizational skills, and setting aside specific times during each week for your online class.

In another study, Davis (2006) researched the perceptions about online readiness of students, faculty, and administrators in three Oklahoma community colleges. In her study, she polled students in two areas to determine what they felt was most critical to be
prepared for the online environment. The first area was in technical skills critical for the online environment. Students responded that Internet navigation skills were the most important skills to have before starting an online program, followed by basic computer skills and word processing skills (p. 111). The second area asked about student traits that were critical for online student success. Self-discipline ranked as the most important student trait identified by students, followed by time management and self-motivation (p. 113). In terms of whether students possess these skills and traits necessary for success, 65% of students reported that they felt some students were not adequately prepared for the online environment (Davis, 2006, p. 164).

**Faculty perceptions of student readiness for online courses.** The perceptions of faculty who interact with and teach students every day can also provide valuable information regarding factors that prohibit students from being successful in the online environment. A widely distributed survey conducted in 2016 by the Instructional Technology Council to their 78 member institutions revealed that the number one perceived challenge to online student success is student readiness, followed by online faculty development, and then online course design (Lokken & Slimp, 2017, p. 16; Lokken, n.d.).

Interestingly, one area where faculty tend to expect incoming students to be well-equipped for online learning is with their technical skills (Kelly, 2013; Ratliff, 2009; White, 2018). According to Ratliff (2009), the perception of faculty is that current students have grown up with technology their whole lives and therefore must be well equipped to handle the technical components of online learning. However, this assumption has been proven to be incorrect (Ratliff, 2009).
In a study by Davis (2006), she polled faculty in two areas to determine what they felt was most critical for students to be prepared for the online environment. The first area was in technical skills critical for the online environment. Faculty responded that basic computer skills were the most important skills for students to have before starting an online program, followed by Internet navigation skills and the ability to use e-mail (p. 105). The second area asked about student traits that were critical for online student success. Students’ self-discipline ranked as the most important student trait identified by faculty, followed by self-motivation and time management (p. 108). In terms of whether students already possess these skills and traits necessary for success, 92% of faculty reported that they felt some students were not adequately prepared for the online environment (Davis, 2006, p. 164).

**Strategies to Increase Online Student Success**

Lagging success rates for online learners compared to traditional on-ground courses have led many researchers to explore strategies to increase online student success. In this section, I will discuss many of these strategies. First, I will begin by looking at the factors discussed in the available literature that impact online student success and differentiate between actionable factors versus not actionable. We will then look at specific actionable strategies that have been attempted by colleges and universities to improve online student success, including online readiness surveys, online readiness courses, online faculty development, improved course design, and enhanced student services.
Factors Impacting Online Student Success

Much research has been conducted regarding students' lack of persistence and success in online courses and programs (Gaytan, 2015; James, Swan, & Daston, 2016; Shea & Bidjerano, 2014; Willging & Johnson, 2009; Wladis, Wladis, & Hachey, 2014). While researchers use slightly different terminology, many consistently examine similar factors that affect online student attrition and lack of success, including “time commitment, lack of feeling of community, the lack of student preparedness for college-level work” (Travers, 2016, p. 52), and “information communications technology engagement, motivation, self-efficacy, and learner characteristics” (Doe, Castillo, & Musyoka, 2017; Travers, 2016, p. 52). Willging and Johnson (2009) summarize these factors into five areas, which include

- personal reasons, such as financial difficulties or family problems;
- job-related reasons, such as a student’s job responsibilities changing mid-program;
- academic reasons, such as poor course design, lack of engagement by the instructor or classmates, challenging curriculum, poor time management skills, too many low-level assignments, or overall lack of readiness to take an online course; and
- technology-related reasons, such as lack of technical skills or technology that overwhelmed the content.

In a study conducted by Song et al. (2004), the researchers asked online learners what they felt were factors that impacted online student success. Common responses included the design of the online course, students’ comfort level with online technologies, and
time management skills (p. 65). In a similar study by Davis (2006), she asked students, faculty, and administrators about their perceptions related to factors that impact online student success, and found the following:

All three groups agreed that self-discipline/self-motivation, time management skills, and basic technology skills were the most important characteristics, traits, and skills that students should possess to be ready for the online environment and that a deficiency in any of these areas was perceived as being a reason for students not being successful in the online environment (p. 166).

Another challenge that new online learners experience is that they must familiarize themselves with the learning management system at the same time they are attempting to learn the course content (Anderton, 2006). When students are not familiar with the learning management system, a portion of their cognitive load is expended figuring out how to submit assignments and navigate through course content. Lack of understanding of the learning environment also impacts the student’s ability to collaborate with others and use course tools such as discussion boards (Cho & Jonassen, 2009).

A final factor that impacts online student success relates to their awareness of what online courses are like before enrolling in an online course. Unfortunately, a common misconception of online learners is that students believe that online courses are less challenging than traditional courses and that working at one’s own pace means that there are no due dates or deadlines (Stanford-Bowers, 2008). For example, Nash (2005) interviewed students who dropped out or failed online courses and found that many of these students believe that an online course would be easier than a face-to-face course, which is a common theme of many studies on online learner success (Robichaud, 2016).
Another study was conducted by Atack and Rankin (2002) in which the researchers explored the experiences of registered nurses who took an online course from either their workplace or from their home. This study revealed that “erroneous perceptions of course workload and inadequate preparation for web learning were largely responsible for the majority of withdrawals” in addition to some who were lacking prerequisite computer skills (p. 457).

For some of the factors mentioned in these studies, interventions or strategies cannot easily be applied to impact student success, such as financial difficulty, family problems, or changes in a student’s job situation that lead to discontinuing an online program. For other factors, applying an intervention is fairly straightforward and has been attempted by many institutions. These interventions include setting proper expectations for online learning, addressing poor online course design, enhancing students’ technical skills, and increasing students’ time management skills.

**Online Readiness Surveys**

One strategy that colleges and universities often use to impact online student success is the utilization of an online readiness survey (Searle & Waugh, 2013; Watkins, Leigh, & Triner, 2008; Wladis, Conway, & Hachey, 2016). The purpose of a readiness survey is to provide the student with a self-assessment that indicates the likelihood they will be successful in the online environment before enrolling in an online class. If the survey indicates the student has a low likelihood of success, the student may choose to enroll in traditional on-ground courses instead of online courses. Table 2.1 presents several online readiness surveys currently used by colleges and universities nationwide.
Table 2.1. *Samples of Online Readiness Survey Instruments*

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Instruments</th>
</tr>
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<tbody>
<tr>
<td>Penn State University</td>
<td><a href="http://tutorials.istudy.psu.edu/learningonline/index.html">http://tutorials.istudy.psu.edu/learningonline/index.html</a></td>
</tr>
<tr>
<td>Stanislaus State University</td>
<td><a href="http://www.csustan.edu/academics/online-programs/online-readiness-self-assessment">http://www.csustan.edu/academics/online-programs/online-readiness-self-assessment</a></td>
</tr>
<tr>
<td>University of Arkansas</td>
<td><a href="https://online.uark.edu/students/readiness-quiz.php">https://online.uark.edu/students/readiness-quiz.php</a></td>
</tr>
<tr>
<td>NC Central University</td>
<td><a href="https://nccuonline.nccu.edu/student-resources/am-i-ready-to-take-online-courses/">https://nccuonline.nccu.edu/student-resources/am-i-ready-to-take-online-courses/</a></td>
</tr>
<tr>
<td>Witchita State University</td>
<td><a href="https://www.wichita.edu/services/mrc/elearning/online_orientation/online_self_assessment.php">https://www.wichita.edu/services/mrc/elearning/online_orientation/online_self_assessment.php</a></td>
</tr>
<tr>
<td>NC Community College System</td>
<td><a href="http://vlc.nccommunitycolleges.edu/faculty/online-readiness-checklist/">http://vlc.nccommunitycolleges.edu/faculty/online-readiness-checklist/</a></td>
</tr>
</tbody>
</table>

An analysis of the readiness instruments from Table 2.1 will reveal many common themes or topics. Readiness surveys typically begin by asking if the student has access to a computer and high-speed internet access, which is an obvious precursor to being able to take an online class. The surveys then typically turn to the learner’s motivation, time management skills, and ability to be self-directed. The surveys then begin to vary slightly, but often ask about students’ ability to communicate online, willingness to seek help, or comfortableness with educational technologies.

It is important to note that readiness surveys typically focus on providing feedback to the student regarding whether or not they are prepared to enter an online course or program. Many of the surveys found in Table 2.1 are true self-assessments, where personal information about the survey respondent is not captured by the institution. These surveys are not typically intended to adequately equip or teach students how to be
prepared for the online environment. The decision whether to subsequently enroll in an online course or program is left up to the student based on the results of the self-assessment.

**Online Readiness Courses**

One of the more promising strategies to improve online student success is the implementation of a course designed to prepare the learner for the online environment. These so-called readiness courses may be optional or mandatory depending on the institution. A common concern regarding making readiness courses optional is that the students who need it the most may be unlikely to utilize the resource (Jones, 2013). However, Wladis et al. (2014) argue that caution should be exercised with respect to what interventions institutions mandate for their students. Without appropriate validation, institutions may inadvertently limit “access for a huge number of students” (Wladis et al., 2014, p. 11). In this section, we will define the concept of a readiness course and then discuss some common curricular components of readiness courses.

Many colleges limit access to online readiness courses to students enrolled at their institution (Cho, 2012). However, an online search reveals many examples of online readiness courses at various institutions, many of which are mandatory prior to registering for online courses. Table 2.2 lists examples of such courses.
Table 2.2. *Samples of Online Readiness Courses*

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Link to Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oakland Community College</td>
<td><a href="https://www.oaklandcc.edu/virtualcampus/student/olreadinesscourse.aspx">https://www.oaklandcc.edu/virtualcampus/student/olreadinesscourse.aspx</a></td>
</tr>
<tr>
<td>Wake Technical Community College</td>
<td><a href="https://www.waketech.edu/online-learning/elearning-intro">https://www.waketech.edu/online-learning/elearning-intro</a></td>
</tr>
<tr>
<td>Portland Community College</td>
<td><a href="https://www.pcc.edu/online/students/osg/">https://www.pcc.edu/online/students/osg/</a></td>
</tr>
<tr>
<td>Alvin Community College</td>
<td><a href="http://www.alvincollege.edu/distance-education/onlinereadinesscourse.html">http://www.alvincollege.edu/distance-education/onlinereadinesscourse.html</a></td>
</tr>
<tr>
<td>Pasco-Hernado State College</td>
<td><a href="https://tinyurl.com/ygkyknmf">https://tinyurl.com/ygkyknmf</a></td>
</tr>
<tr>
<td>Washington State Community College</td>
<td><a href="https://www.wscc.edu/academics/online-learning/online-readiness-course/">https://www.wscc.edu/academics/online-learning/online-readiness-course/</a></td>
</tr>
</tbody>
</table>

A unique difference between readiness courses and readiness surveys is that readiness courses typically have assessments for each module that must be passed to successfully complete the course. These assessments serve to affirm that students have met the objectives of the course.

**Defining online readiness courses.** Berge (2001) defines an online readiness course as a “mini-course that would help ensure that learners acquire appropriate study and learning skills and understand their rights and responsibilities in a distance learning course” (pp. 20-21). Many online readiness courses include readiness surveys since one objective of readiness courses is to help learners realize if online classes are right for them. However, note that the primary objective of a readiness course is fundamentally different from that of a readiness survey. A readiness course seeks to enact a change on the learner to actively make them more ready for an online course, not simply reveal if they are already prepared or not.
Online readiness course curriculum. Many institutions have developed readiness courses in recent years as a strategy to increase online student success. As a result, it would be helpful to discuss some of the common curricular components of these courses. Unfortunately, the process of developing an online readiness course is rarely shared among institutions (Cho, 2012). However, some common curricular components can be derived by examining the finished courses at various institutions. Rovai (2003) suggests that students benefit from participating “in an orientation program prior to their first course that includes mastery of the online tools used in the e-learning system” (p. 11). Results from a study by Glazer and Murphy (2015) indicate that students participating in “an orientation to the university and the learning platform prior to beginning courses has increased students’ probability of success and has provided them with many of the skills necessary to persist” (p. 142). Taylor et al. (2015) suggests that if the course has a clear navigational structure, it is easier for students to complete the course since they do not have to expend mental energy thinking about how to get around in the course. All of these studies suggest that part of the curriculum should be devoted to the tools and technology used in the online course.

Another common item addressed in readiness courses relates to studenting and time management skills (Kift, 2015; Robichaud, 2016; Van Rooij & Zirkle, 2016). In a study by Rooij and Zirkle (2016) at George Mason University, the researchers found that “issues related to time management, focus and initiative seemed to be the greatest online student challenges” (p. 3).

VanOra (2012) suggests including academic components about how to read a syllabus and utilize faculty feedback, including understanding a rubric. Meyer et al.
(2009) advocate for including communication tools that promote self-direction, including how to use assignment feedback or interacting with classmates on a discussion board.

**Online Faculty Development**

As online enrollments continue to grow, it is critical that institutions train instructors so that they teach online courses “with the same integrity and effectiveness as traditional face-to-face courses” (Banas & Velez-Solic, 2014, p. 3). However, serious challenges exist for faculty that are unique to the online environment. Thor and Moreau (2016) explain that online faculty must be the “author, producer, and distributor of distance education content” during an online class (p. 75). Lokken and Slimp (2017) note that in the early years of online education “community colleges had little to no resources required to research this new learning environment,” and as a result, many faculty were left ill-equipped to teach online (p. 74). Many other researchers believe there is a general lack of understanding among faculty regarding what skills are necessary to teach online effectively (Allen & Seaman, 2009; Banas & Velez-Solic, 2014; Palloff & Pratt, 2003).

However, many institutions are working to improve online instruction. In a national survey of online faculty development provided by 39 higher education institutions, Meyer and Murrell (2014) found that many faculty development models focus on general best practices for teaching, as well as instructional design models. Meyer and Murrell (2014) also argue that while the basics of online course design are certainly needed, it is also important to train online faculty on how to develop a community of online learners.

One such framework that focuses on developing online community is Moore’s model of “transactional distance”. Moore posited in the 1980s that lessening this distance
is key to online student success (Reyes, 2013). Jaggars and Xu (2016) investigated the three key elements of Moore’s model: course structure, dialogue (particularly instructor-student interaction), and student autonomy (how much say and choice the learner has in the course) (p. 271). According to Moore, these three elements exist in dynamic tension with each other; Jaggars and Xu (2016) note for example that “a course with greater transactional distance—a low degree of dialogue—will be more challenging for less autonomous learners” (p. 271). The investigation found that “among the four design features examined, only the quality of interpersonal interaction [dialogue] within a course relates positively and significantly to [online] student grades” (p. 271).

Another prominent model, called the Community of Inquiry framework, identifies “presence” as a key factor. The Community of Inquiry framework explains that cognitive, teaching, and social presence are essential for learning (Cho & Tobias, 2016; Garrison, Anderson, & Archer, 2010). Jaggars and Xu’s (2016) study put these two frameworks together and found that “interpersonal interaction may help reduce transactional distance and strengthen students' psychological connection to the course by enhancing ‘social presence’—the degree to which a person is perceived as a ‘real person’ in mediated communication” (p. 273).

Similarly, Kauffman’s (2015) review of research found that “courses that facilitated increased performance and satisfaction were interactive and allowed for collaboration” (p. 8). Baranik, Wright, and Reburn (2017) affirm that learner-to-learner interaction is important as well as faculty-student. They recommend using online discussion board forums, chat forums, social media pages, and having students exchange contact information, noting that “these suggestions are bolstered by the recent finding
that students participating in classroom activities that promoted social interaction exhibited more student-student dialogue and instructor-student dialogue, which lead to more self-efficacy” (p. 69). Cho and Tobias (2016) also found that social presence was most influenced by online discussion boards (p. 124).

Research makes clear that both the design and implementation of an online course are important to student success. We can no longer assume that online teaching is a matter of faculty “transplant[ing] their understandings, strategies, and skills from face-to-face to online teaching environments” (Ehmann & Hewett, 2005).

There will always be an experiential component to faculty development because teaching is an open system of knowledge, necessarily shifting with changes in student populations and in the technology itself. It is critical to expose online faculty to these best practices in teaching. Some researchers have recommended that new online faculty participate in a faculty development or orientation program, similar to the readiness course provided to online students (Searle & Waugh, 2013). They argue that “this component is equally important to online success” (Searle & Waugh, 2013, p. 600). Since all online faculty are adults, Banas and Velez-Solic also suggest that Adult Learning Theory be used when creating these online faculty development programs (Banas & Velez-Solic, 2014).

**Well-Designed Online Courses**

Designing high-quality online courses is one common strategy to increase online student success. There are several best practices to consider when designing online courses and the field of instructional design is well established. In this section, three
design features are discussed: (a) easy to follow navigation, (b) reducing feelings of isolation, and (c) reducing extraneous cognitive load.

**Easy to follow navigation.** Jaggars, Edgecombe, and Stacey (2013) state that having an online course design process with appropriate standards to ensure that the necessary tools, design, engagement activities, and interactions are part of the online course and curriculum is essential for student success. Several studies cite Quality Matter® (QM®) training in course design as an important step in providing support for consistent online course design (Barczyk, Hixon, Buckenmeyer, & Ralston-Berg, 2017; Martin, Polly, Jokiaho, May, & Carolina, 2017). Specifically, QM® standards break down key elements of instructional quality into eight “General Standards” (Hollowell, Brooks, & Anderson, 2017; Martin et al., 2017). The eight QM® standards are as follows:

- Course Overview and Introduction
- Learning Objectives (Competencies)
- Assessment and Measurement
- Instructional Materials
- Course Activities and Learner Interaction
- Course Technology
- Learner and Instructor Support
- Accessibility and Usability (Hollowell et al., 2017, p. 210)

One of the limitations of the standards is that QM® states that meeting their standards on Accessibility does not imply that federal accessibility regulations are met (“Quality Matters Standards,” n.d.). This means an institution may design a course that
meets QM® standards for quality, yet students in that course may not be able to access course information and therefore would be unlikely to be successful.

Students also tend to agree that course design is an important factor related to online student success. In a study by Song et al. (2004), researchers asked students what is the most important factor related to student success in the online environment. Students responded that the design of the online course was the number one factor associated with online student success (p. 65).

Accessible course design for students with and without disabilities is also course design strategy that can promote online student success (Van Rooij & Zirkle, 2016). In fact, “The inclusive nature of universal design and accessibility can enhance the online experience of all learners, not just those with disabilities” (Van Rooij & Zirkle, 2016, p. 3).

**Reducing feelings of isolation.** Another of the well-known factors that contribute to a lack of success in online courses is a feeling of isolation (McInerney & Roberts, 2004; Paquette, 2016; Willging & Johnson, 2009; Yuan & Kim, 2014). McInerney and Roberts (2004) state that this “sense of isolation can however be minimized if forethought is given to the development of the online milieu by the educators involved” (p. 131). Examples of course design strategies that can mitigate a sense of isolation include rich discussion prompts, synchronous web interactions, group work amongst classmates, or a welcome discussion forum.

**Reducing extraneous cognitive load.** An important design consideration when developing online classes is cognitive load (Kirschner, 2002; Lange & Costley, 2017; Moreno & Mayer, 2003; Sweller, 2004; Van Merriënboer & Ayres, 2005). Within
Cognitive Load Theory (CLT), there are three types of cognitive load: intrinsic cognitive load, extraneous cognitive load, and germane cognitive load (Paas, Renkl, & Sweller, 2004). Intrinsic cognitive load relates to the complexity of the materials the student is attempting to learn to the expertise of the learner. For example, Calculus would carry a high intrinsic cognitive load for a student with mediocre math skills. However, this same curriculum would carry a low intrinsic cognitive load for a mathematics instructor. Extraneous cognitive load is associated with factors tied to the learning process that do not specifically relate to the materials to be learned by the student. Merriënboer and Ayres (2005) state that one example of extraneous cognitive load is “searching for information that is needed to complete a learning task in instructional materials” (p. 7). Using Merriënboer and Ayres’ example, in the case of online courses this extraneous cognitive load might come from unclear course structure, a confusing discussion prompt, or hard-to-understand assignment instructions. Cognitive load is summative, which means that each of the three types of cognitive load contributes to the overall cognitive load. Therefore, if the load presented by intrinsic and extraneous load are both high, the memory resources available may be exceeded (Paas et al., 2004). This may result in decreased student learning and subsequently lower student success. Likewise, if the extraneous cognitive load remains manageable, students will be free to focus on the academic curriculum of their courses instead of trying to learn how to navigate the learning management system. This may lead to increased confidence, and lower anxieties about attempting online courses for the first time.

It is safe to assume that most college students are not already experts in the courses they are taking. Naturally, if they were already experts, they would be teaching
the courses instead of taking them as students. As such, it is also a safe assumption that the intrinsic load for every college course will be fairly high, as most of the course content will be new to students. This means that it is critical for faculty and course designers to keep the design and structure of online courses as clear and easy to follow as possible so that the extraneous cognitive load for students can remain low. They also need to be mindful of the clarity in their assignment instructions to ensure students can easily understand what is being asked of them. These considerations will give students the best chance to be successful in the course.

**Enhanced Student Services**

As Baxter (2012) states, “Much research carried out within the higher education sector, based within both distance learning and campus-based institutions, indicates that student retention and progression is based upon a complex mix of institutional, personal, and biographical factors” (p. 110). Specifically, researchers note that lower online course completion rates are influenced by the kinds of issues and environmental factors faced by nontraditional community college students. They arrive at similar recommendations for integrated online student support in which institutional attention to the entirety of the online student’s journey (pre-course, in-course, and post-course) and social connection/presence and metacognitive development are common themes (Baxter, 2012; Depaolo, Huang, & Simmons, 2016; Lee & Choi, 2011; Travers, 2016).

In their comprehensive literature review, Bailey and Brown (2016) find that the same emphasis on connection found in online pedagogy should also be a guiding principle in the design of online student support services. Collaboration across the institution should address “administrative, academic, and personal services” (Bailey &
Brown, 2016, p. 451), including “engaging prospective learners throughout enrollment, allowing advance access to the online classroom, providing access to course resources, offering counseling or mentoring for online learning, addressing technical issues right away, providing clear and flexible office hours,” and identifying underperforming students (p. 458). Such services need to bring a “holistic approach to the learner, aimed at encouraging the person to be an active participant in their education and become self-directed” (p. 454).

Institutional flexibility and adaptation to online students’ needs is another key, and newer online technologies make it possible to provide increased academic and social support (Shea & Bidjerano, 2014). This support might include technical help desk services and early warning systems that alert both instructors and advisors when students have not logged in to the LMS or course, or miss assignment due dates (Jaggars et al., 2013; Murphy & Stewart, 2017; Nichols, 2010; Travers, 2016; Xu & Jaggars, 2014).

In addition to technical support, advisors/mentors, librarians, and counseling and disability services, Bailey and Brown (2016) remind readers that “students also need support in learning how to study and do their best; this may include tutoring, writing services, information literacy training, and learning communities” (p. 454). They conclude that “online tutoring and writing assistance should be considered to provide academic support to students regardless of course format, whether the academic support service is based in-house, provided through a third-party service, or a combination thereof” (p. 454). Their conclusions about the importance of online tutoring align with Rheinheimer, Grace-Odeleye, Francois, and Kusorgbor’s (2010) findings that at-risk students who receive tutoring are more likely to graduate than those who do not (p. 28).
These findings align with earlier research conducted by Cheung and Kan (2002), who found that attendance at tutorial sessions significantly increased students’ persistence rates in online courses.

Overall, researchers argue that institutions should not wait for students to decide to access student support services (Brown, Hughes, Keppell, Hard, & Smith, 2015, p. 12), since students in most need of services are less likely to seek help when they need it (Rheinheimer et al., 2010). However, institutions must also avoid taking a patchwork approach (Brown et al., 2015, p. 1). Engaging students in institutional support services must be intentional and carefully orchestrated.

**Impact of Online Readiness Courses on Student Readiness and Success**

The primary focus of this research project centers on implementing an online readiness course and determining its impact on student success. As such, special attention is devoted to the impact of readiness courses on online student success in this review of the literature. Many education leaders have proposed implementing an online readiness course to mitigate the challenges inherent in online education (Ali & Leeds, 2009; Bozarth et al., 2004; Jones, 2013; Lee & Choi, 2011; Marshall, 2017; Nash, 2005; Palloff & Pratt, 2003; Scagnoli, 2001; Wojciechowski & Palmer, 2005).

However, there are mixed results with respect to the review of the literature on student readiness and its impact on online student success. In a study conducted by Aragon and Johnson (2008), 305 participants completed a readiness assessment called the Bartlett-Kotrlik Inventory of Self-Learning (BISL) before enrolling in online courses. The results of this study showed that there was no significant difference in the students’ BISL scores and their subsequent level of success in their online courses. In a similar
study by Akpom (2013), 30 of 31 students received the highest readiness score on the McVay Online Learning Readiness Assessment, but study results indicated that there was no correlation between students’ scores on the readiness assessment and success in their first online course (p. 76). Another large study by White (2018) found no correlation between students’ grades or likelihood of completion and participation in an orientation or readiness course. However, in White’s study, participation in the online readiness course was optional. Students who opted to take the optional course were largely successful in their subsequent online courses. As such, White noted that “students who voluntarily participated in [the readiness course] might not need to participate at all” (White, 2018, p. 64).

Other studies, however, indicate that online readiness does impact online student success. For example, Dowd (2012) conducted a Delphi study with 18 administrators and 292 instructors from Wisconsin Technical Colleges to gauge their perceptions of the impact of online student readiness on online success. He found that success in online courses depends on students’ readiness for online learning and that “students should be required to take an online readiness course prior to signing up for an online course” (Dowd, 2012, p. 70). In fact, in the two years since the inception of an online readiness program at his institution, Western Technical College has seen a 6% increase in online course completion rates (Dowd, 2012, p. 64).

A study by Milligan and Buckenmeyer (2008) found that orientation sessions positively correlated with increased student readiness, and the authors concluded the study with a recommendation “offer a one-time face-to-face orientation session to help
students become familiar with the course and increase their comfort level with delivery mode and with the other members of the class” (p. 457).

Jones (2013) found that implementing a mandatory online student orientation at a rural community college positively increased retention. Results of Jones’ study indicated that “retention in online courses improved after the implementation of the mandatory online orientation (71.8% retention rate pre-orientation compared to 79.5% retention rate post-orientation) and continues to remain between 80-84% three years later” (p. 44).

A study at a rural community college in western Michigan by Wojciechowski and Palmer (2005) found that the second greatest factor related to student success, behind grade point average, was that of having attended an optional orientation session before beginning class. For this study, a readiness course is synonymous with an orientation course. The results were so strong in this study that the authors recommend “individuals at this community college (and perhaps elsewhere) to consider making such attendance mandatory” (p. 17).

Marshall (2017) conducted a study of 433 first-time online students at a two-year community college. She examined if there was a statistically significant difference in retention, academic success, and persistence between first-time online students who participated in an online orientation course and those who did not participate. She found that there was a statistically significant difference in all three categories for orientation completers versus non-completers.

Liu (2019) conducted a multi-year study in which he administered a 20-item student readiness survey as a pre- and post-test to over 400 students who took an online student readiness course. The results of his study indicated that there was a statistically
significant improvement in online student readiness when comparing the pre- and post-test responses.

Koehnke (2013) conducted a study in which a treatment group of students participated in an online orientation and a control group of students did not. After the study, the treatment group who completed the online orientation had an increase of 4.9% in the number of students earning a C or better for the course. This was determined to be a statistically significant improvement in success rate compared to the control group. Additional studies also support the positive relationship between student readiness and students’ online academic achievement, such as studies by Bernard et al. (2004), Dray et al. (2011), and Kerr et al. (2006).

**Theoretical Framework**

The theoretical framework of this study was rooted in cognitivism (Piaget & Duckworth, 1970; Shuell, 1986; Yilmaz, 2011). As stated earlier, the primary focus of this study is the impact of a readiness course on online student success. This means that I am interested in discovering if students were able to acquire the necessary knowledge and information from the readiness course that would enable them to be successful in their online courses. This objective situates nicely within a cognitive framework, as cognitivism is focused on “how knowledge is acquired, processed, stored, retrieved, and activated by the learner during the different phases of the learning process” (Yilmaz, 2011, p. 205). Elements commonly associated with cognitivism appear frequently in this study, including cognitive load, self-regulated learning, and modeling (Yilmaz, 2011). As noted by Tyler-Smith (2006), first-time online learners often experience cognitive overload which contributes to high drop-out rates. Milligan and Buckenmyer (2008)
found that students with greater self-regulating behavior “do better than those who lack [this] characteristic” (p. 453). Lastly, modeling the structure and design of online courses at an institution will “help students become familiar with the course and increase their comfort level with delivery mode” (Milligan & Buckenmeyer, 2008, p. 457).

Chapter Summary

The review of the literature makes it clear that online education has been growing since its inception and continues to grow year after year. Its flexibility and convenience are attractive to learners, especially nontraditional adult learners who have family and work obligations. Higher education institutions, many of which are desperate for enrollment, have turned to online courses and programs as a way to bolster their enrollment. Many colleges and universities have been successful with this strategy, as online enrollments nationwide continue to trend upward, while on-ground enrollments trend downward.

Unfortunately, one of the major concerns regarding online education since it began is the ability for students to be successful in this mode of instruction. Many studies since the early 2000s have consistently revealed that students enrolled in online courses and programs tend to have lower success and retention rates than students enrolled in traditional on-campus courses. The disparity of success and retention rates between on-ground and online courses and programs is magnified for minority students. This equity gap impacts community colleges greatly, as a large percentage of community college students are minority or low-income students. Online courses also tend to attract students with disabilities, who bring their own academic challenges to these courses.
With a clear demand for online courses and programs that shows no signs of slowing down, colleges are understandably and rightfully seeking ways to improve online student success. The strategies that institutions are undertaking are varied. Some interventions are pre-course enrollment, such as readiness surveys or courses. Some interventions are delivered during a course, such as improved course design, enhanced student engagement, or increased student support, such as advising or tutoring. Multiple studies have been conducted regarding each of these types of interventions in various contexts. Some colleges have adopted online course quality standards such as Quality Matters® to improve the design of their online courses and ease of navigation. Others have implemented extensive faculty development opportunities for online faculty, who are often uncomfortable or new to teaching online. These faculty development opportunities typically teach faculty about online pedagogy, course design, assessments, alignment of learning objectives to curriculum, and how to give appropriate feedback on assignments. Lastly, many colleges have enhanced the various academic support services for their online learners, including academic advising and tutoring. Some ambitious colleges and universities have attempted combinations of these interventions in various forms.

There also appear to be many student factors for which no interventions can easily be applied. Since many online learners are working adults, some students experience family or job situations that necessitate them withdrawing from an online course or program. These situations are not something that institutions can predict or apply an intervention towards.
One strategy from the literature that appears particularly promising concerning its ability to increase online student success is the development of a readiness course, designed to equip and prepare learners to take online courses. These readiness courses frequently include similar content, including an introduction to the learning management system, time management skills, location of student support services, and how to effectively communicate online. While previous results from the literature are mixed, these readiness courses have often proved to be successful in increasing student success and retention.

The focus of this research project centers on the ability of a readiness course to impact online student success at a particular two-year technical college in Columbia, SC. In the following section, the research methodology for this study will be conducted.
CHAPTER 3: METHOD

In my local context at MTC, students enrolled in online courses are not as successful as students enrolled in traditional face-to-face courses. The purpose of this action research was to evaluate the effectiveness of a readiness course to enhance online students’ success at Midlands Technical College. In this study, I aimed to answer three questions: 1) “How and to what extent does taking an online readiness course impact online student success at Midlands Technical College?” 2) “What are students’ perceptions of the readiness course with respect to its effectiveness in preparing them for online learning?” and 3) “What are faculty’s perceptions of the readiness course with respect to its effectiveness in preparing students for online learning?”

The following sections will detail the methods that were used to answer those research questions throughout my study.

Research Design

An action research study was conducted to answer my research questions. For my local context, action research was the most appropriate approach since action research is a deliberate, solution-oriented investigation that is group or personally owned and conducted (Kemmis & McTaggart, 1982). As the Associate Vice Provost, I am personally interested in finding solutions that enable students to be more successful in the online environment at my institution.

Another unique characteristic of action research that was beneficial to this study is the fact that action research is cyclical. In terms of research methodology, “a self-
reflective spiral of cycles of planning, acting, observing and reflecting is central to the action research approach” (Carr & Kemmis, 1986, p. 162). Traditional research typically seeks to discover the root cause of some underlying issue but is not as focused on following through to a solution to the problem. In action research, potential solutions are attempted, results are analyzed, and the problem is refined again in order to get closer to a solution to the problem. This form of research begins with someone, such as an instructor or administrator, with a vested interest in improving teaching or learning (Mills, 2011). It then focuses on applying treatments to the unique population within the researcher’s local context (Parsons & Brown, 2002).

Due to the nature of this problem, a mixed methods approach was the most appropriate for this study. Researching student success involves a mix of hard, factual data, as well as understanding peoples’ experiences. A strictly quantitative study would have missed some of the more subtle underlying factors related to student success. Student success is often measured by end-of-course grades, but those grades are often influenced by non-academic factors like time management skills, life factors, and technology skills (Baxter, 2012; Depaolo et al., 2016; Lee & Choi, 2011; Travers, 2016). A mixed methods approach allowed me to select from a variety of quantitative and qualitative techniques as necessary to uncover the complex issues affecting a wide variety of online learners. Specifically, I chose to use a convergent parallel mixed methods approach. Creswell (2014) explains that within a convergent parallel mixed method design, “a researcher collects both quantitative data, analyzes them separately, and then compares the results to see if the findings confirm or disconfirm each other” (p. 219). A convergent parallel design also worked best due to the timing of the data collection for
this study, since data collection was done within one semester. A sequential mixed methods approach, where the quantitative results inform the qualitative phase, or vice versa, would have been challenging due to the time constraints of this study. Conducting the quantitative and qualitative data collection and analysis simultaneously was more efficient from a timing perspective.

Once the quantitative and qualitative data were collected and analyzed separately, triangulation was used to determine any similarities or differences in the findings. According to Creswell and Clark (2017), triangulation is used “when a researcher wants to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data” (p. 62). Quantitative data in this study included end-of-course grades and Likert scale questions from the student and faculty surveys. Qualitative data included an open-ended survey question and one-on-one interviews with both students and faculty. The triangulation approach used in the analysis phase compared the results of each data collection method and looked for areas where results supported each other. Study results were planned to shape future iterations of the student readiness course.

**Setting and Participants**

This study was conducted at Midlands Technical College (MTC), a large-sized two-year technical college in Columbia, SC. MTC has experienced a trend consistent with the national trend with respect to online student enrollment. While face-to-face enrollment has sharply declined in recent years, enrollment in online courses at MTC has grown steadily. As of 2018, online enrollment made up 19% of all enrollment, and 34% of students were enrolled in at least one online course. This study reviewed online student
success data from two particular terms, Spring 2019 and Spring 2020. The Spring 2019
term was before the implementation of this study’s intervention designed to improve
online student success, and Spring 2020 occurred immediately after the implementation
of the intervention. The number of online courses and sections from Spring 2019 and 2020 is shown in the following table:

Table 3.1. *Online Course Data from Spring 2019 and Spring 2020*

<table>
<thead>
<tr>
<th>Semester</th>
<th>Online Courses</th>
<th>Online Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2019</td>
<td>70</td>
<td>236</td>
</tr>
<tr>
<td>Spring 2020</td>
<td>72</td>
<td>250</td>
</tr>
</tbody>
</table>

Note in Table 3.1, the number of online courses indicates the number of unique
online courses offered at MTC. Each online course may have multiples sections of that
course. Therefore, the number of total online sections offered was much higher than the
number of online courses. While MTC has many different online courses, it currently has
only four fully online programs. Therefore, the majority of students at MTC who take
online courses take a mixture of both face-to-face and online courses.

Student success rates, defined as the rate of students receiving a C or better, in
asynchronous online courses at MTC have lagged substantially behind courses offered
on-ground in recent years. As noted in Figure 3.1, the student success rate of online
courses at MTC has been 9% to 13% lower in recent years for students who take online
courses compared to students taking courses face-to-face on MTC campuses.
The percentages shown in Figure 3.1 were computed by dividing the number of successful students taught using a particular mode of instruction by the total number of students taught using that particular mode of instruction.

The average age of full-time MTC students is 25 years old, and the average age of part-time students is 27 years old (“MTC Fact Book” 2017). With the average age of an MTC student being considerably older than high school graduates, many MTC students would be classified as adult learners. Adult learners typically have very busy lives, which is often accompanied by time management issues, as well as technical deficiencies (Wuebker, 2013). These characteristics present considerable challenges when taking online courses.

The number of total and first-time asynchronous online students during Spring 2019 and 2020 is provided in Table 3.2.
Table 3.2. Online Enrollment Data from Spring 2019 and Spring 2020

<table>
<thead>
<tr>
<th>Semester</th>
<th>Total Online Students</th>
<th>First-Time Online Students</th>
<th>% First-Time Online Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2019</td>
<td>2,927</td>
<td>1,263</td>
<td>43%</td>
</tr>
<tr>
<td>Spring 2020</td>
<td>3,071</td>
<td>1,126</td>
<td>37%</td>
</tr>
</tbody>
</table>

Current online students who have successfully completed at least one online class were exempt from this research intervention. If a student had previously attempted an online course but withdrew or did not pass, they were required to complete the online readiness course if they were not successful in any other online courses. If a student had taken an online course at another college or in high school, but not yet at MTC, they were required to complete the readiness course. Transient students, who attended another institution full-time but came to MTC for just one or two courses, were exempted from this study.

**Innovation**

For this study, every new online student was required to complete the student readiness course, called the Virtual Backpack, prior to registering for his or her first asynchronous online course. Therefore, first-time asynchronous online students received the research intervention, even if they were also enrolled in an on-campus, hybrid, or synchronous online course. According to Nash (2005), one of the main contributing factors to student success is setting expectations for students before entering the online environment. Students should be equipped with time management skills, know how to navigate the learning management system, be aware of available help resources, and more before beginning their first online course (Dray et al., 2011; Kerr et al., 2006). As a result, beginning in Fall 2019 I implemented a student readiness course for students who
desire to take online courses at MTC. Studies by researchers such as Davis (2013) have shown the positive effects of implementing a student readiness course for online students on student success and satisfaction. Rovai (2003) suggests that students benefit from participating “in an orientation program prior to their first course that includes mastery of the online tools used in the e-learning system” (p. 11). The title of the course was “Virtual Backpack: Starting Your Online Journey” and was designed with a traveling and hiking theme. Students must complete the readiness course prior to enrolling in their first asynchronous online course starting in the Spring 2020 semester or later. Figure 3.2 provides a screenshot of the readiness course.

![Virtual Backpack readiness course](image)

Figure 3.2. Screenshot of the Virtual Backpack readiness course.
The readiness course was administered via the D2L Brightspace, the college’s learning management system. It was self-paced and was intended to take approximately three to five hours to complete. All MTC students were loaded into the Virtual Backpack course in Fall 2019, regardless if they had taken online courses in the past or not. However, the Virtual Backpack course was only required for students enrolling in their first asynchronous online course. New students were added to the Virtual Backpack course on an on-going basis each day automatically as they were admitted to the college. The Virtual Backpack course was not required for students only taking courses on-ground.

Upon completing each of the following four modules, students were assessed with a brief quiz:

- Module 1: Survival Skills
- Module 2: Communication
- Module 3: Exploring Your Online Course
- Module 4: Assessments and Feedback

These modules covered topics such as an introduction to online learning, how online learning differs from face-to-face instruction, a tour of the college’s learning management system - D2L Brightspace, time management skills, and how to access college academic resources, such as the library or online tutoring. Once a student successfully completed all modules within the course with an 85% or higher on each respective quiz, the registration block was removed immediately, and the student was able to enroll in an asynchronous online course. During the Virtual Backpack course, students watched videos, read materials, and completed activities.
A demonstration of the Virtual Backpack course is available with the following information:

- Link: https://elearn.midlandstech.edu/d2l/local
- Username: BackpackDemo
- Password: BackpackDemo
- Find the Virtual Backpack in the “My Courses” area of the homepage

At the time I was developing the Virtual Backpack course, I was also just beginning to launch synchronous online courses, which MTC calls “virtual courses.” Synchronous online courses are courses that meet set days and times via web conferencing software. I decided to require the Virtual Backpack course only for asynchronous online courses since, at that time, the number of synchronous online sections was negligible; only around five sections per semester. My reasoning for exempting synchronous online students from the Virtual Backpack course was that these students still had the opportunity to engage with their instructor in real-time, even if by video. Therefore, the urgency to prepare learners ahead of time was not quite as urgent for synchronous online courses.

**Data Collection Methods**

The following section details the various sources of data used in the study. This study used a variety of quantitative and qualitative forms of data to assist in answering the research questions. The quantitative end-of-course grade data determined if the student readiness course adequately prepared students to be successful in the online environment. This data assisted in answering Research Question 1. The student and faculty surveys and interviews assisted in answering Research Questions 2 and 3, which
measured student and faculty perceptions of the readiness course. The student and faculty surveys were administered concurrently, and the student and faculty interviews were conducted concurrently. Table 3.3 shows the alignment between the research questions and the various data sources.

Table 3.3. Research Questions and Data Sources Alignment

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: How and to what extent does taking an online readiness course impact online student success at Midlands Technical College?</td>
<td>● End-of-course grades</td>
</tr>
<tr>
<td>RQ2: What are students’ perceptions of the readiness course with respect to its effectiveness in preparing them for online learning?</td>
<td>● Student Survey ● Student Interviews</td>
</tr>
<tr>
<td>RQ3: What are faculty’s perceptions of the readiness course with respect to its effectiveness in preparing students for online learning?</td>
<td>● Faculty Survey ● Faculty Interviews</td>
</tr>
</tbody>
</table>

**End-of-Course Grades**

End-of-course grade data was used to determine student success rates. If a student received a C or better for his or her end-of-course grade, the student was deemed to be successful. End-of-course grade data is the core measure of whether a student has met the requirements of a course. Aggregating end-of-course grades across a population of students provides a picture of how the population is doing academically. In this study, online end-of-course grades were aggregated from the Spring 2020 semester from all students who completed the readiness course the previous Fall 2019 semester. For these students, Spring 2020 was the first semester they enrolled in an online course.

It is important to clarify that the data is a compilation of all grades obtained by first-time online students in their online classes. This means, for example, that one
student who took multiple online courses will have a data point for each online course they took. A student may even be successful in one online course, but not successful in another online course, and both grades will be considered for this study. And to clarify, no grades were considered for any on-ground, hybrid, or synchronous online courses, regardless if a student took an asynchronous online course along with an on-ground, hybrid, or synchronous online course.

It is also important to note that end-of-course data is not the same as a student’s grade point average (GPA), as GPA accounts for all courses, taught in all modes of instruction, across multiple semesters. This study only examined asynchronous online course grades in specific semesters. If aggregated end-of-course grades increased with statistical significance after implementing the student readiness course, then the readiness course will have been shown to better prepare students to be successful in the online environment, compared to not having a readiness course. All end-of-course grade data was pulled from the college’s Student Information System, Ellucian Colleague. The researcher had access to the Colleague database, which contains student grade data from both current and previous years.

Aggregated end-of-course grade data for first-time online students in Spring 2019, which is before the implementation of the readiness course, was compared to data from first-time online students who completed the readiness course and enrolled in a Spring 2020 online course. Since online education has recently surged nationwide due to the COVID-19 pandemic, it is expected that Virtual Backpack course participation will be much higher in future semesters. However, as an important note regarding study participants and data collection, the only online grades that were considered for this
research study were from courses that were initially coded as an asynchronous online course from the beginning of the Spring 2020 semester. Courses that began with face-to-face delivery and flipped to online delivery during the middle of the Spring 2020 semester due to COVID-19 were not considered in this study. The end-of-course grade data assisted in answering Research Question 1.

**Student Surveys**

Surveys help collect data about the experiences of people in various situations (Gall, Borg, & Gall, 1996). A survey created by the researcher was offered to all Virtual Backpack course completers during their first online course in Spring 2020 (see Appendix A). A total of 1,126 students both completed the Virtual Backpack course in Fall 2019 as well as subsequently enrolled in their first online course in Spring 2020. I extracted this list of students from the MTC Enterprise Reporting System, Ellucian Colleague, the day after Spring 2020 grades were due to be submitted by faculty. At the time I pulled this list, only 996 of the 1,126 students appeared on the list, and a total of 130 students’ grades were added to Colleague at a later date. It is unclear why these grades were not loaded into Colleague on time, and I became aware of the additional 130 students well after the student surveys were administered. As a result, the student survey (Appendix A) was sent to 996 of the total 1,126 first-time online students. Out of the 996 students who were sent the survey, 231 students responded. Of the 231 students who responded to the survey, 228 consented to use their responses for this study for a response rate of 23%. Eight of the 228 students did not complete all of the survey questions. I removed these incomplete students’ responses from the data analysis, leaving 220 student surveys that were analyzed.
The survey began by collecting demographic data such as age, academic major, GPA range, computer proficiency, and more. The survey questions gauged students’ perceptions of the degree to which the readiness course better prepared them to be successful in the online environment, both in an overall sense, as well as in specific categories such as time management skills and their ability to communicate effectively online. The types of questions in this survey included Likert scale, multiple choice, and Yes/No questions. The demographic section in particular had many multiple-choice questions. The range for most Likert scale questions ranged from Not Helpful to Extremely Helpful with respect to the extent the Virtual Backpack course enhanced their level of readiness for online courses.

A small incentive, specifically a raffle for a $50 Amazon gift card, was offered for their participation. Survey questions were aligned to Research Question 2. If a student was enrolled in multiple online courses during Spring 2020, they only received the survey once. Students were contacted via email, as well as via a targeted news item in D2L Brightspace only displayed to first-time online students who completed the Virtual Backpack course. The introduction section of the survey contained one initial question that requested the student’s consent to use their survey responses for this study. Any survey responses that did not contain the student’s consent were not used for this study.

**Student Interviews**

After the student survey, ten students consented to participate in a one-on-one interview. The interview was designed to last approximately 30 minutes (see Appendix B). The structure for the interviews was semi-structured to allow the researcher to ask additional probing questions as needed to analyze the issue in-depth and understand the
underlying reasons behind participants’ answers. The student interview participants were identified by contacting the 231 survey participants and asking if they would like to participate in a follow-up one-on-one interview about their experience taking the Virtual Backpack course. The first ten respondents were sent a form (Appendix C) that requested their consent to use their interview responses for this study. Each interview participant successfully completed the Virtual Backpack course and was a first-time online student in Spring 2020. All interview participants signed the interview consent form, so all of their responses were able to be used for analysis. Demographic data for the 10 student interview participants is provided later in the qualitative data analysis section in Chapter 4. A small incentive, specifically a $10 Starbucks gift card, was offered to participants who consented to the one-on-one interview.

The interview provided students the ability to share more in-depth feedback regarding the readiness course. Interview questions were mostly aligned to Research Question 2. For example, two of the interview questions asked “Do you feel the Virtual Backpack better prepared you to take your first online course? If so, how?” and “What were some of the features of that course that you perceived to be helpful in preparing you to learn in the online environment, and why?” There were a few interview questions that went beyond the scope of Research Question 2 to get a more holistic picture of factors that impact online student success. For example, students were asked questions such as, “What are the skills you think you need to complete an online course successfully?” Note that a student could answer that question without having ever taken the Virtual Backpack course, and their response cannot be related to their perceptions of the Virtual Backpack course.
The interview also revealed challenges students had while taking the readiness course. For example, students were asked “Was the length of the readiness course appropriate to cover the topics presented?” and “Did you experience any difficulty finding or completing the readiness course online? If so, please explain.” Each interview was conducted via Zoom and recorded using Zoom’s cloud-based video recording feature. Each video was then uploaded to Rev.com, which provided human-generated transcripts of the sessions. The resulting transcripts were then coded to look for patterns, categories, and themes, as is further discussed in the qualitative analysis section. Various tools were used during the qualitative analysis phase, including Delve, which is an online coding software, physically arranging and sorting codes on slips of paper, and the pivot table functionality within Microsoft Excel.

**Faculty Surveys**

Another survey was developed by the researcher and was offered to faculty who taught students who recently completed the Virtual Backpack course (see Appendix D). These faculty members were instructors who taught gateway courses with many first-time online students. Participants were restricted to online faculty who taught in both Spring 2019 and Spring 2020 to ensure they could give informed thoughts as to the impact of the online readiness course. A total of 95 MTC faculty members taught online courses in both Spring 2019 and Spring 2020. There were additional faculty who taught online courses in one semester or the other, but not both. Of the 95 faculty who were eligible to complete the survey, 44 faculty responded to the survey for a response rate of 46%.
The faculty survey began by collecting demographic data such as age, academic department, years teaching online, full-time or adjunct status, and more. The survey questions gauged faculty’s perceptions of the degree to which the readiness course better prepared their students to be successful in the online environment, both in an overall sense, as well as in specific categories such as time management skills or their ability to communicate effectively online. The types of questions in this survey included Likert scale questions, Yes/No, and one open-ended question. The demographic section in particular had many multiple-choice questions. The range for most Likert scale questions ranged from Strongly Disagree to Strongly Agree. A small incentive, specifically a raffle for a $50 Amazon gift card, was offered for their participation.

Survey questions were aligned with Research Question 3. For example, using a Likert scale, the survey asked faculty their perception of the degree to which the readiness course better prepared their students to be successful in the online environment. The survey also focused on certain topics within the readiness course, so that individual modules may be reviewed and improved as needed in the future.

The introduction section of the survey contained one question that requested the faculty member’s consent to use their responses to the survey for this study. All faculty members consented to allowing their survey responses to be used for this study.

**Faculty Interviews**

After the faculty survey, ten faculty consented to participate in a 30-minute follow-up one-on-one interview. The structure for the interviews was semi-structured to allow the researcher to ask additional probing questions as needed to analyze the issue in-depth and understand the underlying reasons behind participants’ answers. The faculty
interview participants were identified by contacting the 44 faculty survey completers and asking if they would like to participate in a follow-up one-on-one interview about their experience teaching students who recently completed the Virtual Backpack course. The first ten respondents were sent a form (Appendix E) that requested their consent to use their interview responses for this study. Each interview participant taught online courses in both Spring 2019 as well as Spring 2020, so they could give a more informed opinion as to the effects of the Virtual Backpack course. All interview participants signed the interview consent form, so all of their responses were able to be used for analysis. Demographic data for the 10 interview participants is provided later in the qualitative data analysis section in Chapter 4. A small incentive, specifically a $10 Starbucks gift card, was offered to interview participants.

Faculty were asked to provide more in-depth feedback regarding the extent to which the readiness course prepared their students to succeed in the online environment, which aligned with Research Question 3 (see Appendix F). For example, one interview question asked how the number of questions from students about issues not related to their course subject matter, such as where to log into D2L Brightspace or how to submit an assignment, changed since the inception of the readiness course. A decrease in the number of these types of questions may indicate the readiness course is better preparing students for the online environment. Another interview question asked about students’ overall proactiveness in beginning and completing assignments after the inception of the readiness course. Each interview was conducted via Zoom and recorded using Zoom’s cloud-based video recording feature. Each video was then uploaded to Rev.com, which provided human-generated transcripts of the sessions. The resulting transcripts were then
coded to look for patterns, categories, and themes, as is further discussed in the qualitative analysis section. Various tools were used during the qualitative analysis phase, including *Delve*, which is an online coding software, physically arranging and sorting codes on slips of paper, and the pivot table functionality within Microsoft Excel.

**Data Analysis**

To answer the research questions associated with this study, a variety of data sources were used. Subsequent data analysis took place to interpret the data for each data source. Table 3.4 describes the alignment between the research questions, data sources, and analysis methods.

**Table 3.4. Research Questions, Data Sources, and Analysis Methods Alignment**

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Sources</th>
<th>Analysis Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: How and to what extent does taking an online readiness course impact online student success at Midlands Technical College?</td>
<td>• End-of-course grades</td>
<td>Descriptive statistics; Chi-square analysis</td>
</tr>
<tr>
<td>RQ2: What are students’ perceptions of the readiness course with respect to its effectiveness in preparing them for online learning?</td>
<td>• Student Survey • Student Interviews</td>
<td>Descriptive statistics; Inductive analysis</td>
</tr>
<tr>
<td>RQ3: What are faculty’s perceptions of the readiness course with respect to its effectiveness in preparing students for online learning?</td>
<td>• Faculty Survey • Faculty Interviews</td>
<td>Descriptive statistics; Inductive analysis</td>
</tr>
</tbody>
</table>

**Quantitative Data Analysis**

The quantitative data includes students’ end-of-course grades during two semesters, Spring 2019 and Spring 2020, as well as responses to Likert scale questions.
from student and faculty surveys. The grades for this study were restricted to grades from asynchronous online courses by first-time online students. The analysis for the quantitative data consisted of descriptive statistics, including calculating the mean and standard deviation of the aggregated end-of-course grades for completers of the readiness course. To measure the impact of the intervention on student success rates, end-of-course grades of first-time online students from Spring 2020 were compared to end-of-course grades of first-time online students from Spring 2019. The students in Spring 2020 completed the Virtual Backpack course, and the Spring 2019 students did not complete the Virtual Backpack course, as it had not yet been implemented. I analyzed the data to see if there was a statistically significant increase in the end-of-course grades among the students who successfully completed the Virtual Backpack course.

A chi-square test for independence was applied to see if the change in scores was statistically significant. This test began by constructing a 2x2 table with data displaying information about two specific populations. The first population was first-time online students from Spring 2019, and the second population was first-time online students from Spring 2020. The online student readiness course at MTC was not in effect in Spring 2019 but was in effect for Spring 2020. The rows indicate the number of successful versus unsuccessful students for each of these two populations for each respective semester. Students were deemed successful if they received a grade of C or better for the course, and students were deemed unsuccessful if they received any other grade; C- or lower. Table 3.5 demonstrates the table that was used for the chi-square test for independence.
Table 3.5. Illustration of Chi-Square Test for Independence

<table>
<thead>
<tr>
<th>Successful / Unsuccessful</th>
<th>Spring 2019</th>
<th>Spring 2020</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td># of successful online enrollments in Spring 2019</td>
<td># of successful online enrollments in Spring 2020</td>
<td>Total # of successful online enrollments in Spring 2019 &amp; 2020</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td># of unsuccessful online enrollments in Spring 2019</td>
<td># of unsuccessful online enrollments in Spring 2020</td>
<td>Total # of unsuccessful enrollments in Spring 2019 &amp; 2020</td>
</tr>
<tr>
<td>Total</td>
<td>Total number of online enrollments in Spring 2019</td>
<td>Total number of online enrollments in Spring 2020</td>
<td>Total number of online enrollments in Spring 2019 &amp; Spring 2020</td>
</tr>
</tbody>
</table>

Note that in Table 3.5, the term “enrollments” is used instead of “students” since one student may be enrolled in more than one online course. Each grade from every online course taken by a first-time online student is considered in this study. This data reflects all grades obtained across all first-time online enrollments. This means, for example, that one first-time online student taking multiple online courses will have a data point for each online course they took. A student may even be successful in one online course, but not successful in another online course. The data in Table 3.5 was then used in the chi-square formula in (1) to calculate the chi-square value (McHugh, 2013).

\[ \chi^2_c = \sum \frac{(O_i - E_i)^2}{E_i} \] (1)

In the chi-square formula, \( O_i \) and \( E_i \) represent the various observed and expected values, and \( c \) represents the degrees of freedom, which is one less than the number of rows, times one less than the number of columns. Since there are two rows and two columns in this data set, the degrees of freedom is one. The data from Table 3.5 yields four observed data points: \( O_1, O_2, O_3, \) and \( O_4 \), as demonstrated in Figure 3.3.
Figure 3.3. Visual interpretation of chi-square observed values.

The expected values for each category assume the data points are independent of one another. Therefore, to calculate the $i^{th}$ expected value ($E_i$), add the row total ($R_k$) and column total ($C_k$) of the $i^{th}$ data point and divide by the overall total, as demonstrated in Figure 3.4.

Figure 3.4. Visual interpretation of chi-square expected values.

Once the chi-square value is calculated, a chi-square table or calculator can determine the associated $p$-value. If the $p$-value is less than a predetermined significance level, (i.e. the common educational research studies value of $\alpha = .05$ [Mertler, 2017]), then the null hypothesis would be rejected, indicating there is a statistical difference in the success rates of the two populations. Since the Spring 2020 population had the
advantage of the online student readiness course and the Spring 2019 population did not, this would also suggest that the online readiness course had a significant impact on online student success.

Another quantitative data source for this study was various questions presented on surveys administered to students and faculty. The quantitative questions are all Likert scale questions which utilized a 5-point rating scale with the following options: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree. The response results were analyzed using descriptive statistics.

**Qualitative Data Analysis**

The qualitative components of the data consisted of open-ended student and faculty survey responses and from one-on-one interviews with both students and faculty. The student survey was offered to all first-time online students from the Spring 2020 semester who completed the readiness course during the Fall 2019 semester. The faculty survey was offered to all faculty who taught online courses in Spring 2019 as well as Spring 2020. These faculty members taught gateway courses with many first-time online students. Free response components of the survey were analyzed using inductive analysis (Creswell, 2014; Mertler, 2017). Johnson (2008) describes the process of inductive analysis as organizing a large set of qualitative data into a framework that helps the researcher present key findings. Specifically, a thematic analysis approach was used to analyze the qualitative data (Braun & Clarke, 2006). Inductive thematic analysis is a multi-stage process of “coding the data without trying to fit it into a pre-existing coding frame” (Braun & Clarke, 2006, p. 12). The inductive thematic analysis process described by Braun and Clarke (2006) includes six phases: familiarizing yourself with data,
generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing a report. However, this process has flexibility and can be adapted to fit the research questions and the data (Patton, 1990).

I adapted the process described by Braun and Clarke to fit my research study. After familiarizing myself with the data, the overarching structure for the remaining qualitative data analysis phases in this study is demonstrated in Figure 3.5 (Saldaña, 2016).

![Figure 3.5. Qualitative data analysis design for this study.](image)

The qualitative data analysis began by using two rounds of *Initial Coding* as the first cycle coding strategy (Saldaña, 2016). A peer debriefing with my dissertation chair was conducted between the first and second round of *Initial Coding* to reflect on and critique my process of data analysis (Mertler, 2017). From these initial codes, similarly coded data were organized into categories and themes using *Pattern Coding* as the
second cycle coding strategy (Saldaña, 2016). A peer debriefing with my dissertation chair was also conducted between the categorizing and thematizing rounds of data analysis. Each of these cycles and the resulting findings will be discussed in detail in the Qualitative Findings & Interpretations section in Chapter 4.

Two tools in particular were instrumental in helping me conduct the qualitative analysis of the student and faculty one-on-one interviews. Once transcribed, I loaded the interview transcripts into Delve, an online coding software. Within Delve, I was easily able to assign codes to portions of text using a sentence-by-sentence unit of analysis. In subsequent rounds of coding, I imported the Delve data into Microsoft Excel to take advantage of its pivot table tool. I also used Microsoft Excel when coding the student and faculty survey responses. Examples of this analysis will be provided in the Qualitative Findings & Interpretations section in Chapter 4.

Once themes were identified from the thematic analysis process, I represented my findings through a narrative text explaining my findings. These quantitative and qualitative results were informally compared using triangulation to see if similar results were obtained (Mertler, 2017, p. 107). Similar results among both sets of data provide greater credibility for both sets of findings.

**Procedures and Timeline**

The timeline for the procedures for this research was as follows: Phase 1: Participant Identification, Phase 2: Data Collection, and Phase 3: Data Analysis. Each phase is described in detail below.
Table 3.6. *Detailed Timeline for Procedures*

<table>
<thead>
<tr>
<th>Phase</th>
<th>Expectation</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Participant Identification</td>
<td>1. Identify student and faculty participants</td>
<td>3 weeks – March 2020</td>
</tr>
<tr>
<td></td>
<td>2. Contact student and faculty participants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Allow students and faculty to review consent forms</td>
<td></td>
</tr>
<tr>
<td>Phase 2: Data Collection</td>
<td>1. Administer student and faculty surveys</td>
<td>3 weeks – April/May 2020</td>
</tr>
<tr>
<td></td>
<td>2. Conduct student and faculty interviews</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. End-of-course student grades</td>
<td></td>
</tr>
<tr>
<td>Phase 3: Data Analysis</td>
<td>1. Descriptive stats on student and faculty surveys</td>
<td>5 weeks – June/July 2020</td>
</tr>
<tr>
<td></td>
<td>2. Transcribe and code student/faculty interviews</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Chi-square test for student end-of-course grades</td>
<td></td>
</tr>
</tbody>
</table>

**Phase 1: Participant Identification**

Participant identification for this research study began in the Spring 2020 semester. Students at MTC who desired to enroll in an asynchronous online course in Spring 2020 or later must have successfully completed the Virtual Backpack readiness course prior to being able to register for the class. Note that registration for Spring 2020 courses occurred during Fall 2019, which meant students already completed the readiness course prior to Spring 2020. Study participants were all first-time online students who completed the readiness course in Fall 2019 and subsequently enrolled in at least one online course in Spring 2020.

After obtaining IRB approval from both USC and MTC (Appendix G and H), I reached out to online students who completed the readiness course and invited them to participate in an online student survey during the Spring 2020 semester. A total of approximately 2,000 students completed the readiness course in Fall 2019. Of these 2,000 students, 1,126 students had never successfully completed an online course before and subsequently registered for their first online course in Spring 2020. This is the population
of students who was sent the online student survey. All survey completers were then
invited to further participate in a one-on-one interview. The first ten respondents were
identified as the ten student interview participants. Each interview participant was a first-
time online student in Spring 2020 and had successfully completed the Virtual Backpack
readiness course.

All MTC faculty who taught online courses in Spring 2020 who also taught online
courses in Spring 2019 were invited to complete the faculty survey. Faculty who taught
during both semesters were best equipped to speak to the impact of the readiness course
by comparing semesters before and after the intervention was introduced. A total of 95
faculty were invited to participate in the study. All survey completers were invited to
participate in a one-on-one interview. The first ten respondents were identified as the ten
faculty interview participants. Each interview participant was an online instructor who
taught online courses in both Spring 2019 and Spring 2020. The Virtual Backpack course
was not yet implemented in Spring 2019 but was implemented prior to Spring 2020.
These criteria ensured that each interview participant could speak to the impact of the
Virtual Backpack course on online student success.

Phase 2: Data Collection

The research study has multiple types of data. Two sources of data are surveys
from both students and faculty. Survey participants identified in Phase 1 were sent either
a student or faculty survey administered through Google Forms. The invitation to
participate was sent to student and faculty email addresses retrieved from the college’s
SIS system, Ellucian Colleague. The student and faculty surveys were administered
concurrently in the latter half of the Spring 2020 semester.
Two other sources of data were interview results from both students and faculty. In total, ten student interviews and ten faculty interviews were conducted. While the original plan was to conduct all interviews face-to-face in my office at MTC, all interviews with both students and faculty were conducted during the Spring 2020 semester via the Zoom web conferencing platform due to the COVID-19 pandemic.

A final source of data was online students’ end-of-course grades from Spring 2020 to determine if the readiness course had a positive impact on online student success. The researcher collected all online end-of-course grades from students identified in Phase 1.

**Phase 3: Data Analysis**

After administering the student and faculty surveys, I completed descriptive statistics on all Likert type questions. For all responses to open-ended questions in the surveys, I conducted an inductive analysis looking for common themes. After completing the student and faculty interviews, I transcribed and coded each recording and conducted an inductive analysis looking for common themes. Lastly, I also conducted a chi-square test for independence on students’ end-of-course grades to gauge if there was a statistically significant change in students’ grades in Spring 2020 compared to Spring 2019 historical data.

**Rigor and Trustworthiness**

For this study, I used a variety of quantitative and qualitative data collection methods, including end-of-course grades, student surveys and interviews, and faculty surveys and interviews. Different techniques were used to ensure the rigor and trustworthiness of the data collection methods.
**Triangulation**

In this study, I used triangulation to examine the evidence collected from all the data sources mentioned in Table 3.4 (Creswell, 2014, p. 201). For example, a question on the faculty survey was a Likert scale question that asks if their students have the necessary time management skills to be successful in the online environment. Then, in the one-on-one faculty interviews, many faculty discussed their students’ time management skills. The benefit of triangulation is that, together, the convergence of results with these data collection methods provides greater validity than any one method individually (Mertler, 2017, p. 141).

While there are multiple types of triangulation, this particular study utilized methodological triangulation. Drouin, Stewart, and Van Gorder (2015) state that methodological triangulation is a type of study design in which multiple sources of data are integrated, such as interviews, questionnaires, student grades, or behavioral observations. This design “has proven useful for producing a comprehensive evaluation of the effectiveness of… an intervention” (Drouin, Stewart, & Van Gorder, 2015, p. 405). Therefore, this approach should assist in determining the effectiveness of the readiness course with respect to improving online student success.

**Member Checking**

For the faculty and student interviews, I used member checking to determine the accuracy of the conclusions drawn as a result of the interviews (Shenton, 2004). To conduct member checking, I followed up with all twenty student and faculty interview participants after the findings were complete to determine if I accurately summarized their results. The benefit of member checking was that it ensured I did not misinterpret
any interview participant’s comments or injected any biases I may have had into my interpretation of their responses. Seven faculty participants and two students responded to the request and each respondent indicated that the display table accurately reflected their remarks and thoughts. For example, during member checking Rosa (faculty) noted, “These results accurately reflect my thoughts.” Harry (student) replied, saying, “I am replying back to your email to let you know that these results accurately reflect my thoughts about Virtual Backpack.”

Rich, Thick Descriptions

For all data collection methods, I used rich, thick descriptions to increase the validity of the study by providing ample details of the research setting and incorporating quotes from interview participants in the final results. According to Creswell (2014), rich, thick descriptions “transport readers to the setting and give the discussion an element of shared experiences” (p. 251).

Peer Debriefing

Another component that ensured rigor and trustworthiness in my data collection methods were multiple rounds of peer debriefing that occurred with my dissertation chair. Mertler (2017) describes the process of peer debriefing as using colleagues who can “help you reflect on the research by reviewing and critiquing your processes of data collection, analysis, and interpretation” (p. 143). The details of peer debriefing conducted within this study will be provided in Chapter 4.

Plan for Sharing and Communicating Findings

The findings of this study will be shared with a variety of MTC stakeholders, including students, faculty, staff, and administrators. The results of the study will be
shared with students through a presentation to the Student Advisory Board. A presentation to all study participants will be unrealistic as the number of students taking the Virtual Backpack course will number in the thousands. Other key groups at the college that will receive a presentation of the results include Faculty Council, Staff Council, Academic Affairs Council, Student Development Services Council, and Executive Council. The student readiness course is also an integral part of MTC’s Quality Enhancement Plan (QEP) for its SACSCOC reaccreditation. One of the key SACSCOC requirements of the QEP is that it includes broad-based support from the college community. Communication throughout the QEP process, including sharing the findings, is crucial to generate broad-based support. Results from this study will also be reported through the QEP five-year interim report in 2025.

Since the study utilized mixed method research techniques, a variety of methods were used to protect student identity and privacy. For the quantitative components of the study, grade data was aggregated and reported with no identifying ties back to individual students. For the qualitative survey and interview results, responses were made confidential to protect student and faculty privacy. Participant pseudonyms were used when reporting study findings. In addition, interview participants all completed consent forms before the interview process (see Appendices G and H).
CHAPTER 4: ANALYSIS AND FINDINGS

The findings of this research study informed administrators at MTC if the Virtual Backpack online readiness course had a positive impact on preparing first time online students for the online learning environment. The results of the study will also assist administrators in making future improvements to the Virtual Backpack readiness course, as well as serve as a model for other institutions interested in improving online student success. This chapter presents findings from both quantitative data (i.e. end-of-course grade data and student/faculty surveys) and qualitative data (student/faculty surveys and student/faculty interviews).

Data collection was guided by three research questions:

1. How and to what extent does taking an online readiness course impact online student success at Midlands Technical College?

2. What are students’ perceptions of the readiness course with respect to its effectiveness in preparing them for online learning?

3. What are faculty’s perceptions of the readiness course with respect to its effectiveness in preparing students for online learning?

The first section of this chapter begins by presenting quantitative findings and results obtained by end-of-course grade data from students and quantitative data obtained from student and faculty surveys. The second section of this chapter presents the qualitative findings obtained from student and faculty open-ended survey responses and interviews of both students and faculty.
Quantitative Findings

End-of-course grade data, as well as student and faculty surveys, were conducted in this research study. These quantitative data were collected and analyzed in an attempt to answer the three research questions posed in this study. In this section, we will (a) analyze the end-of-course grades which will help determine if there was a statistically significant increase in student grades after the implementation of the Virtual Backpack online readiness course, and then (b) analyze the quantitative components of both a student and faculty survey, consisting of Likert scale questions.

End-of-Course Grades

Research Question 1 states “How and to what extent does taking an online readiness course impact online student success at Midlands Technical College?” End-of-course grade data is the core measure of whether a student has met the requirements of a course. Therefore, end-of-course grade data is used to determine student success rates. Students receiving a C or better for their end-of-course grade are deemed as successful. Aggregating end-of-course grades across a population of students provides a picture of how the population is doing academically.

The Virtual Backpack readiness course was launched in Fall 2019. Students were required to complete the Virtual Backpack course in Fall 2019 prior to registering for their first online course. Students who had previously completed an online course successfully were exempt from taking the Virtual Backpack course, as well as transient students who attended another college or university and only enrolled at MTC to take a specific course or two. Only first-time online students who completed the Virtual
Backpack course were considered for this study. Grades from any student who were exempted from the Virtual Backpack course were excluded from the data sets.

Since Fall 2019 was the first semester that the Virtual Backpack course was administered, Spring 2020 was the first semester that Virtual Backpack completers enrolled in online courses. To determine if the Virtual Backpack course had an impact on student success, Spring 2020 grades needed to be compared to end-of-course grades from a semester before the implementation of the Virtual Backpack course. While Fall 2019 is the immediately preceding semester to Spring 2020, the Fall semester is not an ideal semester to compare to Spring. In the two-year college setting, Fall and Spring semesters have different populations. Naturally, most students begin the academic year during the Fall semester. Some students who are unsuccessful during the Fall semester do not persist to the Spring semester, which means student success rates naturally tend to be higher in the Spring. The Summer semester typically attracts academically strong transient students home for the summer, as well as highly motivated continuing MTC students. As a result, success rates during the summer semester tend to be substantially higher than both Fall and Spring semesters. To demonstrate these differences in success rates by term, Table 4.1 displays the success rates of Fall, Spring, and Summer terms at MTC across all modes of instruction for the past three years.
Table 4.1. Success Rates at Midlands Technical College by Term

<table>
<thead>
<tr>
<th>Term</th>
<th>Overall Success Rate</th>
<th>Online Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2017 (n=28,890)</td>
<td>70.0%</td>
<td>58.4%</td>
</tr>
<tr>
<td>Spring 2018 (n=28,160)</td>
<td>70.9%</td>
<td>59.9%</td>
</tr>
<tr>
<td>Spring 2019 (n=26,133)</td>
<td>71.9%</td>
<td>63.0%</td>
</tr>
<tr>
<td>Summer 2017 (n=9,899)</td>
<td>75.3%</td>
<td>67.3%</td>
</tr>
<tr>
<td>Summer 2018 (n=10,103)</td>
<td>73.4%</td>
<td>63.3%</td>
</tr>
<tr>
<td>Summer 2019 (n=8,924)</td>
<td>73.9%</td>
<td>65%</td>
</tr>
<tr>
<td>Fall 2017 (n=31,689)</td>
<td>69.4%</td>
<td>56.7%</td>
</tr>
<tr>
<td>Fall 2018 (n=30,368)</td>
<td>68.9%</td>
<td>58.2%</td>
</tr>
<tr>
<td>Fall 2019 (n=28,925)</td>
<td>68.9%</td>
<td>61.7%</td>
</tr>
</tbody>
</table>

Note that across all grades from all modes of instruction, the Fall success rates range from 68.9% to 69.4%, the Spring success rates range from 70.0% to 71.9%, and the Summer success rates range from 73.4% to 75.3%. Also, note the sizable difference in sample size between Fall, Spring, and Summer semesters. Due to the natural variations in population and student success between the various terms, I elected to compare the target Spring 2020 semester to the previous Spring 2019 semester for the most accurate determination if the Virtual Backpack course had an impact on student success.

First-time online students in Spring 2019 took a total of 1,861 classes, and first-time online students in Spring 2020 who also completed the Virtual Backpack readiness course took a total of 1,717 classes by 1,126 unique students. Table 4.2 displays the grade distribution for the two target semesters.
Table 4.2. First-Time Online Student End-of-Course Grade Distribution

<table>
<thead>
<tr>
<th>Grades</th>
<th>Spring 2019</th>
<th>Spring 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>465</td>
<td>448</td>
</tr>
<tr>
<td>B</td>
<td>377</td>
<td>390</td>
</tr>
<tr>
<td>C</td>
<td>235</td>
<td>219</td>
</tr>
<tr>
<td>D</td>
<td>90</td>
<td>63</td>
</tr>
<tr>
<td>F</td>
<td>148</td>
<td>102</td>
</tr>
<tr>
<td>W (withdrawals)</td>
<td>546</td>
<td>495</td>
</tr>
<tr>
<td>Total</td>
<td>1,861</td>
<td>1,717</td>
</tr>
</tbody>
</table>

Students earning a C or better were deemed to be successful, and all other students were deemed unsuccessful. By aggregating the scores of C or better, the data presented in Table 4.2 indicates the success rate for Spring 2019 was 57.9% and the success rate for Spring 2020 was 61.6%, for an increase in student success rate of 3.7%. Table 4.3 consolidates the grade data into successful and unsuccessful first-time online students.

Table 4.3. First-Time Online Student Success Data

<table>
<thead>
<tr>
<th>Successful/Unsuccessful</th>
<th>Spring 2019</th>
<th>Spring 2020</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>1,077 (57.9%)</td>
<td>1,057 (61.6%)</td>
<td>2,134</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>784 (42.1%)</td>
<td>660 (38.4%)</td>
<td>1,444</td>
</tr>
<tr>
<td>Total</td>
<td>1,861 (100%)</td>
<td>1,717 (100%)</td>
<td>3,578</td>
</tr>
</tbody>
</table>

A chi-square test for independence was conducted to determine if there is a statistically significant difference in the success rates between Spring 2019, which was before the implementation of the Virtual Backpack course, and Spring 2020, which was after the implementation of the Virtual Backpack course. The null hypothesis for a chi-
square test for independence is that the two populations are independent and there is no association between them. If the null hypothesis is rejected, then there is a statistically significant difference in the two populations.

Using the data from Table 4.3, as well as equation (1), I calculated a chi-square value of $\chi^2 = 5.05$ with 1 degree of freedom, which correlates to a $p$-value of .025. For this study, I selected a $p$-value tolerance level of .05. Since $p \leq .05$, we reject the null hypothesis and find that the change in online student success from Spring 2019 to Spring 2020 is statistically significant. This finding suggests that the Virtual Backpack readiness course had a statistically significant impact on first-time online student success at MTC.

**Student Surveys**

In addition to examining end-of-course grades, I surveyed Spring 2020 first-time online students to get their perceptions of the Virtual Backpack readiness course. The 1,717 online enrollments from Spring 2020 noted in Table 4.3 were taken by a total of 1,126 unique students. I extracted this list of students from the MTC Enterprise Reporting System, Ellucian Colleague, the day after Spring 2020 grades were due to be submitted by faculty. At the time I pulled this list, only 996 of the 1,126 students appeared on the list, and a total of 130 students’ grades were added to Colleague at a later date. It is unclear why these grades were not loaded into Colleague on time, and I became aware of the additional 130 students well after the student surveys were administered. As a result, the student survey (Appendix A) was sent to 996 of the total 1,126 first-time online students. Out of the 996 students who were sent the survey, 231 students responded. Of the 231 students who responded to the survey, 228 consented to use their responses for this study for a response rate of 23%. Eight of the 228 students did not complete all of the
survey questions. I removed these incomplete students’ responses from the data analysis, leaving 220 student surveys that were analyzed.

To determine the internal consistency of the Likert scale questions within the student survey, I computed a Cronbach’s alpha coefficient using Microsoft Excel (Tavakol & Dennick, 2011). To compute the Cronbach’s alpha coefficient, I exported the responses of the appropriate Likert scale questions from Google Forms to Microsoft Excel. Then, I applied equation (2) to determine the Cronbach alpha coefficient.

\[
\alpha = \frac{K}{K - 1} \left( 1 - \frac{\sum_{i=1}^{K} \sigma_{Y_i}^2}{\sigma_X^2} \right)
\]  

(2)

After applying (2) to the data set, I computed a Cronbach’s alpha of 0.95, which indicates the student survey instrument has strong internal reliability (Tavakol & Dennick, 2011, p. 54). Student survey responses for the five-point Likert scale questions aligned with either Strongly Disagree, Disagree, Neutral, Agree, or Strongly Agree. The lowest rated response, namely Strongly Disagree, aligned with a numerical value of one. The highest rated response, namely Strongly Agree, aligned with a numerical value of five. The number of responses for each Likert scale range were tallied across all survey participants. Table 4.4 displays these results from the student survey Likert scale questions.
Table 4.4. Student Survey Responses

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please indicate what extent you feel the Virtual Backpack helped prepare you for online classes. *If you did not complete the Virtual Backpack, please move on to the next section.</td>
<td>11</td>
<td>15</td>
<td>47</td>
<td>64</td>
<td>83</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack helped your understanding of how to utilize tools in D2L?</td>
<td>9</td>
<td>13</td>
<td>37</td>
<td>61</td>
<td>100</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack helped your time management skills?</td>
<td>29</td>
<td>26</td>
<td>66</td>
<td>43</td>
<td>56</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack helped your ability to communicate effectively online?</td>
<td>18</td>
<td>17</td>
<td>49</td>
<td>58</td>
<td>78</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your knowledge of how online courses are structured at MTC?</td>
<td>13</td>
<td>13</td>
<td>29</td>
<td>61</td>
<td>104</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your knowledge of how to use instructor feedback for improvement?</td>
<td>18</td>
<td>20</td>
<td>38</td>
<td>61</td>
<td>83</td>
</tr>
</tbody>
</table>

I then applied descriptive statistics to the student survey results, as noted in the following table:
Table 4.5. *Student Survey Descriptive Statistics*

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please indicate what extent you feel the Virtual Backpack helped prepare you for online classes. *If you did not complete the Virtual Backpack, please move on to the next section.</td>
<td>3.88</td>
<td>1.14</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack helped your understanding of how to utilize tools in D2L?</td>
<td>4.05</td>
<td>1.11</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack helped your time management skills?</td>
<td>3.32</td>
<td>1.32</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack helped your ability to communicate effectively online?</td>
<td>3.73</td>
<td>1.25</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your knowledge of how online courses are structured at MTC?</td>
<td>4.05</td>
<td>1.17</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your knowledge of how to use instructor feedback for improvement?</td>
<td>3.78</td>
<td>1.27</td>
</tr>
</tbody>
</table>

Table 4.5 averages all Likert scale participant responses ranging from (1) *strongly disagree* to (5) *strongly agree*. The responses with the highest mean were a tie between “To what extent do you feel the Virtual Backpack helped your understanding of how to utilize tools in D2L?” and “To what extent do you feel the Virtual Backpack enhanced your knowledge of how online courses are structured at MTC?” Both had a mean of 4.05, which correlates to slightly above Agree on the Likert scale for these questions.

The response with the lowest mean by a wide margin was “To what extent do you feel the Virtual Backpack helped your time management skills?” This question had a mean of 3.32, which was almost half a unit of measure less than the next lowest response.
Faculty Surveys

Faculty who teach online courses at MTC were also surveyed (Appendix D) to determine if their perceptions of student readiness have changed since the implementation of the Virtual Backpack readiness course. Specifically, the survey section titled “Impact of the Virtual Backpack Course” contains Likert scale questions related to the faculty’s perception that the Virtual Backpack course impacted their students’ ability to be successful in online classes ranging from (1) strongly disagree to (5) strongly agree. A total of 95 MTC faculty members taught online courses in both Spring 2019 and Spring 2020. There were additional faculty who taught online courses in one semester or another, but not both. For this study, I wanted to engage faculty who taught online both before and after the implementation of the readiness course. These targeted faculty would have been able to have an informed opinion as to the impact of the Virtual Backpack online readiness course.

Of the 95 online faculty members invited to participate, 44 faculty responded to the survey, for a response rate of 46%. Of the 44 faculty that responded, 39 completed all of the survey questions. The five faculty who did not complete all of the survey questions indicated that they were not familiar with the curriculum of the Virtual Backpack online readiness course, and therefore could not make an informed opinion as to whether the course had an impact on student behavior in their classes. I discarded the five incomplete survey responses prior to the data analysis.

To determine the internal consistency of the Likert scale questions within the faculty survey, I computed a Cronbach’s alpha coefficient using Microsoft Excel. To compute the Cronbach’s alpha coefficient, I exported the responses to the appropriate
Likert scale questions from Google Forms to Microsoft Excel. I then applied equation (2) to determine the Cronbach’s alpha coefficient.

After applying (2) to the data set, a Cronbach’s alpha of 0.91 was computed for the faculty survey, which indicates the survey instrument has strong internal reliability.

Table 4.6 displays the results of the faculty survey Likert scale questions.

Table 4.6. Faculty Survey Responses

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please read the following statement carefully and indicate to what extent you agree or disagree with the statement -- &quot;I believe student readiness (technical skills, time management, realistic expectations, etc.) is a major contributing factor for students being successful in the online environment.&quot;</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>Rate your level of agreement with the statement that “my online students were better prepared for online learning this semester in Spring 2020 (having taken the Virtual Backpack) compared to Spring 2019 (prior to the Virtual Backpack).”</td>
<td>1</td>
<td>0</td>
<td>13</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students' ability to communicate effectively online? *If you are not familiar with the curriculum within the Virtual Backpack, proceed to the next section.</td>
<td>0</td>
<td>2</td>
<td>14</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Survey Question</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neutral</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>---------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students' understanding of how to utilize tools in D2L?</td>
<td>0</td>
<td>2</td>
<td>9</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students' time management skills?</td>
<td>3</td>
<td>2</td>
<td>19</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students' knowledge of how online courses are structured at MTC?</td>
<td>1</td>
<td>0</td>
<td>6</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students' knowledge of how to use instructor feedback for improvement?</td>
<td>2</td>
<td>3</td>
<td>13</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students' use of available college resources (online tutoring, Disability Services, etc.)?</td>
<td>1</td>
<td>3</td>
<td>22</td>
<td>8</td>
<td>5</td>
</tr>
</tbody>
</table>

Descriptive statistics were then applied to the faculty survey results, including the mean and standard deviation of the Likert scale responses. These results are found in the following table:
Table 4.7. *Faculty Survey Descriptive Statistics*

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please read the following statement carefully and indicate to what extent you</td>
<td>4.82</td>
<td>0.38</td>
</tr>
<tr>
<td>agree or disagree with the statement -- &quot;I believe student readiness (technical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>skills, time management, realistic expectations, etc.) is a major contributing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>factor for students being successful in the online environment.&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate your level of agreement with the statement that “my online students were</td>
<td>3.92</td>
<td>0.94</td>
</tr>
<tr>
<td>better prepared for online learning this semester in Spring 2020 (having taken</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the Virtual Backpack) compared to Spring 2019 (prior to the Virtual Backpack).”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students'</td>
<td>3.85</td>
<td>0.92</td>
</tr>
<tr>
<td>ability to communicate effectively online? *If you are not familiar with the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>curriculum within the Virtual Backpack, proceed to the next section.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students'</td>
<td>4.15</td>
<td>0.95</td>
</tr>
<tr>
<td>understanding of how to utilize tools in D2L?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students'</td>
<td>3.28</td>
<td>0.99</td>
</tr>
<tr>
<td>time management skills?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students'</td>
<td>4.18</td>
<td>0.87</td>
</tr>
<tr>
<td>knowledge of how online courses are structured at MTC?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students'</td>
<td>3.62</td>
<td>1.10</td>
</tr>
<tr>
<td>knowledge of how to use instructor feedback for improvement?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do you feel the Virtual Backpack enhanced your students' use of</td>
<td>3.33</td>
<td>0.89</td>
</tr>
<tr>
<td>available college resources (online tutoring, Disability Services, etc.)?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The response with the highest mean was an agreement with the statement “I believe student readiness (technical skills, time management, realistic expectations, etc.)
is a major contributing factor for students being successful in the online environment.” This statement had a mean of 4.82, with 5.00 being the highest score on the Likert scale. Since this question did not directly relate to the impact of the Virtual Backpack course, it is also worth noting that the response specifically related to the Virtual Backpack course with the highest mean was “To what extent do you feel the Virtual Backpack enhanced your students’ knowledge of how online courses are structured at MTC?” The mean for this question was 4.18, which correlates to slightly above Agree on the Likert scale for these questions. Interestingly, this aligns with the student survey feedback, in which students also felt the Virtual Backpack course increased their knowledge regarding how online courses are structured. The response with the lowest mean was “To what extent do you feel the Virtual Backpack enhanced your students' time management skills?” This question had a mean of 3.28.

**Qualitative Findings & Interpretations**

This convergent mixed-methods study contains both quantitative and qualitative elements (Creswell & Clark, 2017). The four qualitative data sources for this study include semi-structured interviews for students and faculty, as well as an open-ended question within student and faculty surveys. In this section, we will detail the method of qualitative analysis completed on these data sets, and then explore the findings from the student interview responses, faculty interview responses, and the student and faculty survey responses.

**Analysis of Qualitative Data**

All codes generated from the qualitative survey and interview data were aggregated and refined repeatedly through multiple rounds of coding using an inductive
thematic approach (Braun & Clarke, 2006). According to Braun and Clarke (2006), thematic analysis is a “method for identifying, analyzing and reporting patterns within data” (p. 79). This approach is explained in more depth in the section on Qualitative Data Analysis in Chapter 3. The overarching structure for the qualitative data analysis in this study consisted of two cycles as demonstrated in Figure 3.5 (Saldaña, 2016).

The qualitative data analysis began by using two rounds of Initial Coding as the first cycle coding strategy (Saldaña, 2016). In the second cycle coding, similarly coded data were organized into categories and themes using Pattern Coding (Saldaña, 2016). I met with my dissertation chair during each stage of the process to conduct peer debriefings which helped me review and critique my process (Mertler, 2017). Each of the two cycles will be discussed in detail, with provided examples.

To begin the analysis of the student and faculty interviews, I first needed to transcribe the audio files from the recorded video (see Appendix B and D). The data was transcribed using Rev.com, which provides human-generated transcription. No transcription was required for the student and faculty survey question about the Virtual Backpack course since the survey was text-based (Appendix A and C). All 20 interview transcripts were then uploaded to Delve.com, which is an online coding platform. Prior to uploading to Delve, each of the 20 interview participants were given pseudonyms to ensure the confidentiality and privacy of their responses. Table 4.8 summarizes demographic information about each of the ten student interview participants.
Table 4.8. *Description of Student Interview Participants*

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Age</th>
<th>Gender</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>Under 19</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Cora</td>
<td>30-39</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Frank</td>
<td>20-24</td>
<td>Male</td>
<td>White</td>
</tr>
<tr>
<td>Gabby</td>
<td>Under 19</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Harry</td>
<td>20-24</td>
<td>Male</td>
<td>Black</td>
</tr>
<tr>
<td>Hazel</td>
<td>40-49</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Julia</td>
<td>25-29</td>
<td>Female</td>
<td>Black</td>
</tr>
<tr>
<td>Khadija</td>
<td>20-24</td>
<td>Female</td>
<td>Black</td>
</tr>
<tr>
<td>Libby</td>
<td>20-24</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Victoria</td>
<td>20-24</td>
<td>Female</td>
<td>Black</td>
</tr>
</tbody>
</table>

Table 4.9 summarizes demographic information about each of the ten faculty interview participants.

Table 4.9. *Description of Faculty Interview Participants*

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Age</th>
<th>Gender</th>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice</td>
<td>50-59</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Brittany</td>
<td>50-59</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Bryan</td>
<td>50-59</td>
<td>Male</td>
<td>White</td>
</tr>
<tr>
<td>Jamal</td>
<td>50-59</td>
<td>Male</td>
<td>White</td>
</tr>
<tr>
<td>Lauren</td>
<td>40-49</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Malachi</td>
<td>40-49</td>
<td>Male</td>
<td>White</td>
</tr>
<tr>
<td>Maria</td>
<td>40-49</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Natalie</td>
<td>30-39</td>
<td>Female</td>
<td>Black</td>
</tr>
<tr>
<td>Rosa</td>
<td>50-59</td>
<td>Female</td>
<td>White</td>
</tr>
<tr>
<td>Samantha</td>
<td>40-49</td>
<td>Female</td>
<td>White</td>
</tr>
</tbody>
</table>
Since the qualitative survey component only consisted of a single open-ended question (see Appendix A and C), I elected to use Microsoft Excel during its first cycle of coding, although I still used Initial Coding for the 56 student surveys and 23 faculty surveys. Note that the number of student and faculty survey participants were lower than the number of participants noted in the quantitative section due to many survey participants stating “no comment” or “no additional remarks” when asked if they had any additional feedback about the Virtual Backpack course. These remarks were not assigned codes and these students and faculty open ended question responses were not considered for the qualitative analysis. Microsoft Excel is the same platform I used for subsequent rounds of coding for both surveys and interviews. All student and faculty surveys were administered anonymously, so no pseudonyms needed to be provided for this data set.

Table 4.10 presents the overall quantity of qualitative data by indicating the number of codes applied to each qualitative data source from the first cycle of coding. The high volume of codes used helped indicate the richness of data collected through these interviews and surveys.

Table 4.10. Quantity of Codes from Interviews and Surveys

<table>
<thead>
<tr>
<th>Types of Qualitative Data Sources</th>
<th>Number</th>
<th>Total Number of Codes Applied</th>
<th>Unique Codes Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Interviews</td>
<td>10</td>
<td>461</td>
<td>321</td>
</tr>
<tr>
<td>Student Surveys</td>
<td>56</td>
<td>60</td>
<td>41</td>
</tr>
<tr>
<td>Faculty Interviews</td>
<td>10</td>
<td>448</td>
<td>362</td>
</tr>
<tr>
<td>Faculty Surveys</td>
<td>23</td>
<td>31</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>1,000</td>
<td>744</td>
</tr>
</tbody>
</table>
First Cycle Coding: Initial Coding

For the first cycle of coding, I chose to implement Initial Coding (Saldaña, 2016). According to Strauss and Corbin (1998), Initial Coding breaks down the qualitative data into discrete pieces, such as sentences or phrases, and examines them for their similarities and differences. Charmaz (2014) advises that this line-by-line initial coding technique is particularly helpful when coding interview transcripts. Another important reason for beginning with initial coding is that allows the researcher to explore a variety of directions a study may lead (Glaser, 1978). The first cycle of Initial Coding had two rounds. I began the first round of Initial Coding by assigning one or more codes to each meaningful sentence. Some sentences were not coded if they did not align with my research questions, or were irrelevant to the study, such as saying “Good morning.” For the sentences or phrases that were coded, each code summarized the meaning of its associated sentence with a word or short phrase. As an example, Figure 4.1 demonstrates an initial coding of a portion of Julia’s interview transcript.

Figure 4.1. Initial coding of student interview in Delve.
In the highlighted sentence, the participant discussed the fact that the Virtual Backpack course allowed her to not waste “valuable time” learning how online classes work once she received access to her first online class. This sentence was coded as *VB saved valuable time*. As another example of the *Initial Coding* process, April (student) was asked in her interview what elements of the Virtual Backpack course she found helpful. She stated, “It [the Virtual Backpack] definitely helped me find where everything was, like find the content, and the discussions and things like that, and some other helpful tips I guess.” I coded this quote as *VB helped with navigating D2L*. Here VB stands for Virtual Backpack and D2L stands for the learning management system, D2L Brightspace. The code assigned to this quote was a short phrase that summarized the student’s remarks. Additional examples of codes generated after *Initial Coding* included *Referred back to VB*, *More proactive after VB*, *Helps to not feel lost*, and *Online students have busy lives*.

After the first round of *Initial Coding* of the interview transcripts, I participated in a peer debriefing with my dissertation chair. One recommendation he provided was to code more discrete units of data, perhaps even having multiple codes within a sentence where appropriate. As an example, I originally had the following lengthy phrase from Cora’s interview coded as *Virtual Backpack feedback*:

Even like with the Virtual Backpack, I went through the program, but then thankfully I was able to go back and reference certain things as I started to experience the different components within the online learning. Thankfully I was able to, because it stays on your screen, the Virtual Backpack.

My dissertation chair noted that various portions of this sentence could be coded separately. After further reflection, I coded portions of this text more granularly and
meaningfully in a second round of Initial Coding as values the VB, often refers back to VB, and the VB is content dense as demonstrated in Figure 4.2.

Figure 4.2. Coding revisions in Delve after peer debriefing.

I also conducted a similar process for other codes used throughout the interview transcripts and survey responses. This second round of Initial Coding allowed me to review and reflect on all the codes assigned and make any necessary adjustments. Once the second round of Initial Coding was complete, I had a total of 1,000 initial codes that summarized portions of language-based data from each of the qualitative data sources. As noted in Table 4.10, of the 1,000 codes obtained after Initial Coding, 909 codes were from the student and faculty interviews and 91 codes were from the student and faculty surveys.

**Second Cycle Coding: Pattern Coding**

Saldaña (2016) states that the goal of second cycle coding is to “develop a sense of the categorical, thematic, conceptual, and/or theoretical organization from your array
of first cycle codes” (p. 234). To discover these transcending categories and themes, I
began to look for patterns, similarities, and differences amongst the codes.

The process of subsuming similar codes into categories is known as synthesis
(Saldaña, 2016). To assist with the synthesis process, all codes were printed, cut out, and
laid on a table as demonstrated in Figure 4.3. Student statements were printed in red ink
and faculty statements were printed in blue ink to let me quickly see at a glance if a
statement was made by a student or faculty.

Figure 4.3. Pattern coding in the second cycle of coding.

Codes were physically arranged and rearranged multiple times under different
groupings as various relationships emerged. These groupings led to the development of
“Pattern Codes. According to Saldaña (2016), “Pattern Coding as a second cycle method, is a way of grouping [first cycle data] into a smaller number of categories, themes, or concepts” (p. 236). Once patterns began to emerge, some potential categories were identified. These categories were handwritten so that I could quickly change them as needed during the analysis. To explore the viability of these potential categories, I moved the analysis into Microsoft Excel to continue the synthesis process. Each code was listed in an Excel row, along with a second round revision of the initial code, as well as a pattern code, or potential category, as shown in Figure 4.4.

<table>
<thead>
<tr>
<th>Pattern codes (potential categories)</th>
<th>2nd Round Codes</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes towards VB</td>
<td>Did not go through VB curriculum</td>
<td>Skipped to VB quizzes</td>
</tr>
<tr>
<td>Organization of online courses</td>
<td>Better course navigation</td>
<td>Better course navigation</td>
</tr>
<tr>
<td>Tools used within the learning management system</td>
<td>Proficient at D2L tools</td>
<td>Proficient at D2L tools</td>
</tr>
<tr>
<td>Virtual Backpack’s impact on students’ time management skills</td>
<td>Time management strategy</td>
<td>Time management strategy</td>
</tr>
<tr>
<td>Positive remarks regarding Virtual Backpack</td>
<td>VB helped me</td>
<td>VB helped me as new student</td>
</tr>
<tr>
<td>_N/A</td>
<td>_N/A</td>
<td>Child experience with online learning</td>
</tr>
</tbody>
</table>

Figure 4.4. Identifying potential categories using Microsoft Excel.
Additional information captured in Excel that does not appear in Figure 4.4 include whether the code came from an interview or survey question, the specific statement that was coded, a link to the associated transcript in Delve if the statement was from an interview, and whether the respondent was a student or faculty. Codes that did not align with any pattern amongst other codes were given a category and theme of \textit{N/A (Not Applicable)} and discarded from further analysis. As an example, in Figure 4.4 an older student went on a tangent about her child’s experience with online learning at another college. Since this discussion was not relevant to her direct experience with the Virtual Backpack course at MTC and its ability to prepare her for online learning, this statement was coded in the second round as \textit{N/A} and was discarded in the final analysis. At this stage of the analysis, all categories were still fluid.

Once a tentative structure of codes and categories was developed, I created a pivot table within Microsoft Excel using the interview and survey data for further analysis. The pivot table enabled me to quickly expand and collapse potential categories, as well as see any outlier pieces of data that had not yet been subsumed into a particular category or theme. It also automatically calculated how many codes were associated with each tentative category, as shown in Figure 4.5.
In the expanded category shown in Figure 4.5, the code *Poor course design* is used four times, while the other codes in this particular category are only used once. This method allowed me to see which tentative categories had many associated codes, which might indicate the need for subcategories or further refinement. It also let me see which categories had too few codes, which might indicate the need to dissolve that category or merge it with another category. An example of this refinement was the development of several subcategories. For example, two clear patterns that emerged from the data analysis were that students seemed to have better 1) online course navigation skills and 2) mastery of the tools within the learning management system after completing the Virtual Backpack course. Both patterns had a number of associated codes with them, but it became clear these were a part of a larger category referencing students’ level of familiarity with the learning management system. Instead of eliminating these two patterns in favor of the larger category, I developed an overarching category *Familiarity with the learning management system*, with the subcategories *Organization of online courses* and *Tools used within the learning management system*. 

![Figure 4.5. Creation of categories using pivot tables in Microsoft Excel.](image)
Once the codes, categories, and subcategories were refined during the second cycle of coding, I began to notice certain themes and started to connect these potential themes to existing research literature. As an example, many students referenced that the Virtual Backpack course helped them become familiar with the learning management system, D2L Brightspace. They also said that this familiarity helped them feel more confident beginning their first online class and decreased their anxiety before their first online class. I used existing research, as found in the Chapter 2 literature review, to support the value of this assertion and found multiple studies that validated the importance of being familiar with the learning management system prior to beginning online learning. The resulting collection of codes, categories, subcategories, assertions, and associated statements from the surveys and interviews were organized into a display table (Creswell, 2014).

Before the final themes were determined, a peer debriefing session was conducted with my dissertation chair. Together we made refinements to the structure of the display table by combining certain categories, developing additional subcategories, and realigning certain categories under different themes. As an example, I originally had an assertion that stated the Virtual Backpack course helped enhance many different student skills. Under this assertion, I had a category for Communication skills and student engagement. My dissertation chair noted that student engagement is more of an outcome than a student skill. As such, we revised this category to be Increased online communication skills and combined student engagement with another category under another assertion that referenced learner achievement to create the new category Learner achievement and student engagement.
The refined and revised data from the peer debriefing reviewed within a Microsoft Excel pivot table offered a more global review of the data. The resulting pivot table, as shown in Figure 4.6, was able to simultaneously display the proposed assertions and categories, along with their associated codes and quotes. Categories and themes could be expanded or collapsed as desired for easy review. It also contained two filters that allowed for restricting the results to faculty or student, or interview or survey.

![Figure 4.6. A global display of themes, categories, and quotes using Microsoft Excel.](image)

**Improving the Validity of the Findings**

**Peer debriefing.** Regular and frequent peer debriefings with my dissertation chair helped improve the validity of my findings. He helped me reflect and critique my codes, categories, and themes. Specifically, in the first cycle coding phase, my chair helped me more granularly code portions of data from the surveys and interviews. In the second cycle coding phase, he assisted me in thinking about the groupings of codes which subsequently led to the categories, subcategories, and themes for this study. Peer
deb briefings often concluded with multiple revisions and improvements to the data analysis process.

**Member checking.** Before finalizing the themes developed as a result of this research process, it was important to reach back out to the study participants to ensure the results aligned with their perceptions. Note that the student and faculty surveys were anonymous, so member checking was not possible with this population. However, member checking was conducted with all 20 interview participants. The proposed themes, categories, and a short explanation of each was shared with student and faculty interview participants via email as a form of member checking, as shown in Figure 4.7 (Mertler, 2017). Seven faculty participants and two students responded to the request, and each respondent indicated that the display table accurately reflected their remarks and thoughts.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Virtual Backpack – Member checking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Hi!</td>
<td></td>
</tr>
</tbody>
</table>
| I wanted to thank you again for taking time out of your busy schedule a few months ago to participate in an interview regarding your perceptions of the Virtual Backpack readiness course. Your feedback was very valuable to this study. As I come to the conclusion of this research project, I want to make sure I captured all participants responses correctly. This is an important process of research called “Member Checking”. Below you will find the synthesized responses of all study participants, followed by a short explanation for each theme found.

What I need from you: Please read through the study results below and either shoot me back a quick email letting me know that these results accurately reflect your thoughts, or provide some clarifying thoughts if your position differs to the summary below. Thanks so much!

Devin Henson

–

Theme 1: The Virtual Backpack helped enhance many students skills necessary to be successful online learners.

- Category 1: Familiarity with the learning management system
  - Subcategory: Organization of online courses
- Category 2: Increased online communication skills
- Category 3: Self-regulated learning
- Reasoning: Overall the general consensus from both faculty and students was that the Virtual Backpack (VB) was overwhelmingly helpful. Students felt they had a good idea of how D2L and online courses were structured and most (all?) faculty reported that they have received feedback from previous classes.

Figure 4.7. Member checking with interview participants.
Of the faculty (seven) and students (two) who responded to the request for member checking, each replied with a brief reply that they agreed that the summary of findings accurately represented their thoughts.

**Preparing findings for presentation.** To assist in the presentation of findings of this study, I once again turned to the pivot table functionality within Microsoft Excel. By rearranging the pivot table into a new configuration, I was able to automatically sort all statements from all participants within each category and theme. This aided in attributing the right quote to the right participant, as shown in the following figure:

![Figure 4.8. Organizing student statements using Microsoft Excel pivot tables.](image)

This organizational structure quickly let me see all remarks within particular categories and themes, as well as filter by student or faculty, or survey or interview. If I needed a fuller quote or explanation, I was able to retrieve the link to Delve or the Google Forms survey responses to get additional context for the quote.
Presentation of Findings

A total four themes emerged from the data analysis phase, which included 20 categories and subcategories. The four themes can be summarized as (a) the Virtual Backpack course helped enhance many students’ skills necessary to be successful online learners, (b) students and faculty found the Virtual Backpack course to be a useful online learning resource, (c) the Virtual Backpack course had minimal impact related to students’ time management skills, and (d) there are external factors that inhibit the effectiveness of the Virtual Backpack course. This section will go in-depth into each of these themes, and supporting evidence will be provided from the existing research literature. All participants have been given pseudonyms so that their names and identities remain confidential. Any quotations provided in this study are verbatim from participants’ one-on-one interviews or their written survey responses. Table 4.11 provides an overview of all resulting themes and categories.

Table 4.11. Alignment of Themes and Categories

<table>
<thead>
<tr>
<th>Themes</th>
<th>Categories</th>
</tr>
</thead>
</table>
| 1. The Virtual Backpack course helped enhance many students' skills necessary to be successful online learners | • Familiarity with the learning management system  
  o Improved knowledge about course navigation  
  o Increased familiarity with tools used in online courses  
 • Increased online communication skills  
 • Self-regulated learning |
| 2. Students and faculty found the Virtual Backpack course to be a useful online learning resource | • Positive remarks regarding Virtual Backpack  
 • Valuable resource to reference later  
 • Modeled after actual online class  
  o Saved valuable time when entering first online class  
  o Lowered anxiety and raised confidence |
### Themes

<table>
<thead>
<tr>
<th>Themes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Learner achievement and engagement</td>
<td></td>
</tr>
<tr>
<td>3. The Virtual Backpack course had minimal impact related to students’ time management skills</td>
<td>• Time management is an important student skill</td>
</tr>
<tr>
<td></td>
<td>• Virtual Backpack's impact on students' time management skills</td>
</tr>
<tr>
<td>4. There are some factors that inhibit the effectiveness of the Virtual Backpack course</td>
<td>• Factors associated with online instructors</td>
</tr>
<tr>
<td></td>
<td>o Online course design sometimes differs from Virtual Backpack curriculum</td>
</tr>
<tr>
<td></td>
<td>o Online instruction sometimes does not compliment the Virtual Backpack course</td>
</tr>
<tr>
<td></td>
<td>• Factors associated with online students</td>
</tr>
<tr>
<td></td>
<td>o Life issues impacting student success</td>
</tr>
<tr>
<td></td>
<td>o Prerequisite academic skills</td>
</tr>
<tr>
<td></td>
<td>o Some students did not take the Virtual Backpack course seriously</td>
</tr>
</tbody>
</table>

**Theme 1: The Virtual Backpack course helped enhance many students’ skills necessary to be successful online learners.** One of the most evident patterns noted when hearing from student and faculty interview participants was the noticeable impact the Virtual Backpack course had on critical student skills. The most common responses related to three particular skills: familiarity with the online learning system, online communication skills, and self-regulated learning. The category related to the online learning system had two sub-categories; one related to course design, and another related to the tools used within the learning management system.

**Familiarity with the learning management system.** Students and faculty alike mentioned that the Virtual Backpack course improved their familiarity with the learning management system used at MTC, which is D2L Brightspace. Most comments in this category fell specifically into one of two areas; 1) improved knowledge about course
navigation, and 2) increased familiarity with the common tools used in online courses. Findings related to those two subcategories are presented in the following sections.

*Improved knowledge about course navigation.* The majority of student interview participants stated that the Virtual Backpack course enhanced their knowledge about the organization of online classes at MTC. For example, one survey participant stated, “I had never taken online courses before, and the Virtual Backpack taught me how to navigate the portal. It would have been pretty confusing without it!” When interviewing Hazel (student), she noted that

Having that particular module walk you through D2L and where all of the different areas are, what would be in each area, where you would go for instructor information syllabus, and then through the content of the modules, that one was very helpful.

Faculty also noted improvements in new online students’ abilities to navigate the online environment. During the faculty interviews, faculty were asked, “How has the amount of questions from students about issues not related to their course subject matter, such as where to log into D2L Brightspace or how to submit an assignment, changed since the inception of the readiness course?” Alice (faculty) noted that “I didn't get a lot of those questions like, ‘I don't know where the quizzes are’, or ‘I don't know how to post in discussions.’” Similarly, a faculty survey respondent noted, “I don’t think I had a single student this semester email me that they could not find information within the course or could not submit an assignment.” In total, eight of the 10 faculty interview respondents made similar remarks that students’ ability to navigate D2L Brightspace had improved since the inception of the Virtual Backpack course.
These findings are supported by the existing research literature. Anderton (2006) notes that a challenge of new online learners is that they must familiarize themselves with a new learning management system at the same time they are trying to keep up with the academic curriculum of a course. This can be overwhelming and stressful for new online learners. Results from a study by Glazer and Murphy (2015) indicate that students participating in “an orientation to the university and the learning platform prior to beginning courses has increased students’ probability of success and has provided them with many of the skills necessary to persist” (p. 142). Also, Taylor et al. (2015) suggests that if students understand the organizational structure of the course, it is easier for students to complete the course successfully since they do not have to expend mental energy thinking about how to navigate the course. Therefore, one of the goals when designing the Virtual Backpack course was to expose students to the navigational structure that MTC has adopted for its online courses. MTC uses a framework developed by Quality Matters, or QM, in which courses adhere to 42 different course design standards. Adhering to a consistent navigational structure, such as QM Standards, across an institution has been shown to increase online student success (Barczyk et al., 2017; Martin et al., 2017). The online course structure developed by MTC includes news items and a welcome message on the home page, followed by four specific modules on the content page: Start Here, Schedule of Activities, Learning Content, and Need Help. Not only is the Virtual Backpack course designed and built using this structure, but it also has an instructional module within the course, titled “Exploring Your Online Course,” that walks students through the design of online courses at MTC, as shown in the following figure:
One of the key pages in this module is titled “Online Course Tour,” in which students are taken through the anatomy of an online course at MTC. At the conclusion of the “Exploring Your Online Course” module, students must pass a quiz indicating their proficiency with the design of online courses at MTC.

*Increased familiarity with tools commonly used in online courses.* Many students mentioned the improvement in their knowledge of tools within D2L Brightspace. For example, Hazel (student) mentions, “I think that the Virtual Backpack did a really good job of giving feedback on the tools that would be used.” Likewise, Gabby (student) notes “I definitely feel like it helps a lot of people maybe who haven’t been in school for a while or aren’t as proficient in computer skills figure out what they’re doing.”

When conducting the faculty interviews, faculty were asked, “What were the differences, if any, that you noticed in your students’ level of readiness compared to
previous semesters?” In response, faculty had similar responses regarding student’s improved usage of tools within D2L. Jamal (faculty) stated, “In the past, I’ve had a lot more student that have been confused with how to do things…, whether the D2L submission went through and stuff like that.” And Samantha (faculty) felt that her students “seemed very much ready technology-wise.”

These responses from students and faculty are consistent with the current research literature. According to Ratliff (2009), many faculty assume that because today’s students have grown up with technology their whole lives that they must be equipped to utilize the various tools experienced when taking online courses. However, Ratliff showed this assumption to be incorrect. Students must be taught how to use the tools they will see and experience when they enter their first online classes. Rovai (2003) suggests that students benefit from participating “in an orientation program prior to their first course that includes mastery of the online tools used in the e-learning system” (p. 11). Led by the advice of Rovai and other researchers, one of the goals of when developing the Virtual Backpack course was to expose students to the common tools used within D2L Brightspace, the learning management system at MTC, such as discussion boards, quizzes, dropboxes, the gradebook, and the attendance register. A screenshot of one of the course resources that discusses common D2L tools is shown in the following screenshot:
Common D2L Tools

Most online courses at MTC use the same set of tools. The tabs below will orient you to the most common tools you can expect to see at MTC. Please review each tab carefully and watch the short video on each page.

<table>
<thead>
<tr>
<th>Assessments</th>
<th>Attendance</th>
<th>Discussions</th>
<th>Dropbox</th>
</tr>
</thead>
</table>

**Assessments**

Clicking on Assessments will bring you to any online quizzes or examinations that are available in your online course. These answer to multiple choice questions and will often require the use of proctoring software, such as the Respondus Lockdown in more detail in Module 4.

![Assessment List](image)

**Figure 4.10.** Screenshot of the Virtual Backpack course module on D2L tools.

In the figure above you can see tabs that discuss various tools commonly used within D2L. Each tab has a video developed by an MTC faculty member that demonstrates use of that particular tool.

**Increased online communication skills.** Effective communication is critical in online courses (Richardson, Besser, Koehler, Lim, & Strait, 2016). Students must engage with other students via discussion boards, as well as their instructor via email, chat, discussion boards, or other electronic means. Faculty and students both reported increased comfort and ability in communicating effectively online. Rosa (faculty) noted that the semester the Virtual Backpack course was in effect, “Even those non-traditional students who are a little older and sometimes more trepidatious about reaching out to an
instructor, I feel like they just did it more readily.” Rosa (faculty) also made a comment that “students were quicker to contact me with questions.” A faculty survey respondent made the comment that “I will say that that the discussions posted this semester were much better than in the past. Maybe they reviewed the description of how to post a discussion through the [Virtual] Backpack. I thought that was really good.” Another survey respondent made the remark, “Prior to the Virtual Backpack I've noticed a reticence to communicate sooner rather than later. Communicating sooner helped me keep those students from becoming discouraged when they started out rusty and lacking confidence with certain writing skills.” Cora (student) gave advice to other students, saying “If there’s a question, [students] need to be willing to reach out to their teachers because these teachers… take the time to get back to the student.” Additionally, in the open-ended student survey, a student respondent stated, “Before I took it [the Virtual Backpack course], I was surprised to see that I had been structuring my discussion responses wrong, and saw how important it was to create well-structured and knowledgeable discussion posts.”

These findings are supported by the current existing research literature. Numerous recent studies have linked student success with student-instructor and student-student interaction. Kauffman (2015) conducted a review of literature and found that courses that showed increase student performance had strong communication elements present. Baranik, Wright, and Rebum (2017) also note that student-instructor and student-student interaction is critical for success in the online environment. In fact, as early as the 1980s, the concept of “transactional distance” has been discussed in relation to distance
education, where Moore suggested that lessening this communication barrier between student-instructor and student-student is key to online student success (2013).

The Virtual Backpack course was designed with these research studies in mind, and an entire module in the course was designated to improving student communication skills, as shown in the following figure:

![Module 2: Communication](Image)

Figure 4.11. Screenshot of the Virtual Backpack course module on Communication.

The module on communication skills covers topics such as netiquette, or online etiquette, in online courses, emailing instructors, how to write quality discussion posts,
and plagiarism. At the conclusion of the module students had to complete a quiz on Communication Skills with an 85% proficiency or better in order to complete the course.

**Self-regulated learning.** When analyzing the student and faculty interview responses, a common pattern emerged relating to characteristics typically attributed to good students. Transcripts referencing these skills were initially coded with terms such as *metacognition*, *proactiveness*, and *self-efficacy*. Through a peer debriefing session with my dissertation chair, I came to realize that all of these student skills could be subsumed under a category of “self-regulated learning.” Zalli et al. (2020) states that a self-regulated learner “is actively involved in their learning process” (p. 255). Many studies discuss the value of metacognitive development in students, so that they are aware of their own learning and understand where they may still have deficiencies (Baxter, 2012; Depaolo et al., 2016; Lee & Choi, 2011; Travers, 2016). A common misconception of first-time online students is that they believe online courses are less challenging or rigorous than on-campus courses (Stanford-Bowers, 2008). If a student procrastinates and does not take their online courses seriously until it is too late, they may end up being unsuccessful.

After completing the Virtual Backpack course, students noted that they felt they had enhanced their self-regulated learning skills. For example, a student survey respondent stated, “I felt as though that I was very underprepared for how much time I still needed to put into online classes, and realized that it was a lot more work than I had anticipated.” In addition, Cora stated in the interview that the Virtual Backpack course “asks you how you feel about your willingness to start and complete what you've started. So it does make the students think before they begin the course.”
Faculty also reported increases in their students’ self-regulated learning. Rosa (faculty) stated that the “Virtual Backpack helps them set up some basic attitudes and dispositions towards what I'm going to then ask them to do.” And Natalie (faculty) noted an increase in her students’ proactiveness, saying she has had “maybe seven or eight students' email [her] already about summer textbooks and what they need to make sure they have their stuff for the courses.” She also stated that the students “have started to be very proactive, which is good.”

**Summary of Theme 1.** The general consensus of both faculty and students was that the Virtual Backpack course enhanced many of the student skills that the research literature indicates are critical for online student success. Most notably, the Virtual Backpack course improved students’ familiarity with D2L Brightspace, the learning management system used at MTC, and the common tools used within it. Many faculty noted significantly fewer questions from students related to the mechanics of taking an online course, such as where to find certain information or how to submit assignments. Another key student skill that seems to have improved is student communication, and students’ willingness and comfort level in reaching out to their instructor as they have questions and concerns about the class. The Virtual Backpack course has seemed to decrease the transactional distance between student and faculty, leading to increased student success. And lastly, student and faculty responses indicated that students self-regulated learning skills have improved. Students became more proactive in their coursework and were more self-aware of the workload required to be successful in online courses.
Theme 2: Students and faculty found the Virtual Backpack course to be a useful online learning resource. In addition to the improvement in specific student skills noted in Theme 1, students and faculty also noted other aspects of the Virtual Backpack course that they appreciated and valued. These aspects include (a) general positive remarks about the Virtual Backpack course, (b) its value as a future reference, (c) its similarity to an actual online class, and (d) its ability to increase learner achievement and engagement.

Positive remarks regarding Virtual Backpack course. Numerous student and faculty members stated generic positive remarks regarding the Virtual Backpack course. Specifically, nine of 10 student interview respondents made such remarks, and 9 of ten faculty interview respondents made such remarks. Some of these remarks did not explicitly state anything in particular about the course, but the comments were so consistent that it warranted having a category in the research findings. For each of the generic student and faculty responses, I naturally asked follow up questions to gauge what specifically what they valued about the Virtual Backpack course. Many of these follow-up responses appear in other categories or themes. However, some students could not point to anything specific, but they just had a general sense that the Virtual Backpack course helped prepare them for their first online class. A few examples of student responses regarding the value of the Virtual Backpack course follow:

Hazel (student): I really think it was a great course…. I felt like it covered all of the pertinent areas to being successful online.
Khadija (student): And if people actually take the time to go through it all the way that it probably helped them a lot more than they think.

Harry (student): I think there was a lot covered in the Virtual Backpack that is really beneficial to a student that is taking classes.

Julia (student): It was very valuable and it was a valuable use of my time.

Victoria (student): I think it was definitely needed.

One quote in particular that was striking was from Julia (student), who stated “I like that it was required because honestly, if it was just optional, I probably wouldn't have taken it because I would have said, ‘I don't have time.’” When developing the curriculum for the Virtual Backpack course, the design committee made a conscious decision to make the Virtual Backpack course mandatory for enrollment in asynchronous online classes, even at the risk of hurting online enrollment. Julia’s remarks validated the thought that if the Virtual Backpack course was left as optional that some students would have opted not to participate in the course.

Another interesting quote comes from Gabby (student), who said, “I'm glad that they have the Virtual Backpack to help us know what we're doing instead of just having us go for it.” Gabby clearly valued the preparation that the Virtual Backpack course provided her prior to starting her first online class. Similar to students, many faculty also expressed general positive remarks related to the Virtual Backpack course. For example, Malachi (faculty) said “I think it’s great” and “I’m 100% for the Virtual Backpack.” Jamal (faculty) stated “I thought you covered a lot of good topics that I would have wanted to see covered.”
One of the more interesting faculty statements comes from Maria (faculty), who stated, “I think it [the Virtual Backpack] should be required for all students.” When the Virtual Backpack course was being developed, the committee debated at length which population of students should be mandated to complete the Virtual Backpack course. All modes of instruction at MTC, even on-ground classes, utilize D2L Brightspace and its tools, so the committee considered mandating the Virtual Backpack course for all MTC students. However, there is a natural tension that exists between the value that the Virtual Backpack course brings, versus barriers to enrollment. For example, Wladis et al. (2014) argue that caution should be exercised with respect to what interventions institutions mandate for their students. Without appropriate validation, institutions may inadvertently limit “access for a huge number of students” (Wladis et al., 2014, p. 11). For this reason, the committee decided to only mandate the Virtual Backpack course for students enrolled in asynchronous online courses. However, conversations are now on-going regarding whether to require the Virtual Backpack course for synchronous online students, especially since more academic courses are moving online due to COVID-19. Faculty such as Maria clearly feel that the improvement they have seen amongst her students due to completing the Virtual Backpack course warrant all students being required to complete the Virtual Backpack course.

*Valuable resource to reference later.* A common refrain from many student interview participants was that they continue to refer back to the Virtual Backpack course, even now that they are on to their actual online courses. Remarks from two students in particular follow:
Cora (student): Anytime you need to go back and revisit something, it's there and that's incredibly helpful… Thankfully, I was able to go back and reference certain things as I started to experience the different components within the online learning.

Khadija (student): If I ever needed help, I would go back to it because it's a lot of information that can help you out… Anytime I needed help with something, I would have to go back to the [Virtual] Backpack to figure out how to work things because it was new to me.

Gabby (student) made a particularly interesting statement. She remarked, “If I ever did have a question, which did happen once, I was able to go back to the material and look through it before having to email someone or call someone with my question.” Her statement references the fact that her ability to refer back to the Virtual Backpack course when she had a question reduced the need to contact her instructor with mechanical type questions about her online course. This sentiment aligns with a common refrain heard from faculty. For example, one faculty survey respondent stated:

I feel the Virtual Backpack greatly enhances students' ability to navigate the course, submit assignments, communicate on the discussion board, etc. I don't think I had a single student this semester email me that they could not find information within the course or could not submit an assignment.

Faculty consistently noted that they received fewer questions from students regarding where to find items within the course or how to complete activities or assignments.
Gabby’s remark suggests that many of these students are referring back to the Virtual Backpack course instead of having to reach out to their instructor. This leaves faculty free to communicate with students regarding more substantive and course-specific topics, such as the curriculum being taught in the course.

Modeled after actual online class. While it is important to tell students about what they will experience, it is also important to show students these same things and let them experience it for themselves. One of the main goals when developing the Virtual Backpack course was to give students preview of the experience they will have in an actual online course.

The online course structure developed by MTC that all online faculty are asked to use includes news items and a welcome message on the home page, followed by four specific modules on the content page: Start Here, Schedule of Activities, Learning Content, and Need Help, as shown in Figure 4.10. When the Virtual Backpack course was built, it was designed to have the same structure with the same modules as other online courses, even though the Virtual Backpack course was designed to take a few hours as opposed to an entire semester.

Five students in particular remarked that one of the valuable things about the Virtual Backpack course was that it looked and felt like their first online course that they subsequently took the following semester. For example, Cora (student) stated “When you get into the system for your regular classes, you're like, ‘Oh, that's what it was talking about.’” A student survey respondent noted “I felt as though the Virtual Backpack course was incredibly useful in showing… what online classes are like in a college setting.” Another student survey respondent stated that the Virtual Backpack course was
“extremely helpful and allowed me to know what I was getting into with an online course before it happened.”

In addition, two faculty made similar remarks. First, Rosa (faculty) states, “Students get in an actual course and they face particular iterations of some of the things that are talked about more generally in Virtual Backpack, but at least they have a framework for putting that new experience in.” A second faculty member, Bryan (faculty) said that the Virtual Backpack course “definitely allows them to put their toe in the water. Very low stakes, obviously, no grade involved.” One point that Bryan brings up, is that the Virtual Backpack course is somewhat of a “safe space.” Students can get a sense of what an online class will look like, without worrying about breaking anything or feeling like they may do something that will negatively impact their grade like they might in a real course. In fact, one of the most active areas of the Virtual Backpack course is an open discussion board, titled “I have a question…”. This discussion board provides students 1) a place to practice posting a sample discussion post, so they will be able to do it with confidence in their actual online courses, and 2) a safe space for asking questions that they may be embarrassed to ask in a real online course. The “I have a question…” discussion board is monitored by MTC staff, who actively respond to students questions each week. An example of the type of question we regularly receive on this discussion board is shown in the following figure.
In addition, participant responses regarding the ability of the Virtual Backpack course to model an actual online class fell into two pattern codes.

*Saved valuable time when entering first online class.* The first pattern code specifically discussed the Virtual Backpack course’s ability to save students precious time when they enter their first online class. Already being familiar with the layout, structure, and tools of their online class made it possible for students to immediately focus on the course curriculum and assignments. Three students in particular noted this aspect of the Virtual Backpack course, and some of their remarks are noted in the following statements:

- Julia (student): I didn't have to waste that valuable time trying to figure everything out when I finally got access to the classes.
- Julia (student): I appreciated the Virtual Backpack course, because… it helped me kind of get used to those different functions and those different tools so I didn't waste any study time trying to figure it out… Especially with a class like that
[Anatomy and Physiology online], there is no time to try to figure out how to navigate D2L.

Cora (student): I think that… had I not had opportunity… to take that [the Virtual Backpack] ahead of time, my online courses would have taken so much more time and I will have felt less able to complete them… It would have taken me like a month, maybe a couple of weeks to get acclimated with the system without the Virtual Backpack.

Hazel (student): Anytime you're dealing with a new software, you don't want to spend a lot of time while you're in a class and learning, “where do I need to go for this?”… You weren't in the middle of a class trying to figure out where I need to go to get all of this information.

Since this category solely revolves around student experiences, there were no faculty statements included within this category.

These statements made by students align well with the existing research literature. Reducing the time needed to get up to speed in students’ first online courses is an indication that they had a manageable cognitive load during their online course.

Cognitive load is an important design consideration when developing online courses (Kirschner, 2002; Lange & Costley, 2017; Moreno & Mayer, 2003; Sweller, 2004; Van Merriënboer & Ayres, 2005). Within Cognitive Load Theory (CLT), there are three types of cognitive load: intrinsic cognitive load, extraneous cognitive load, and germane cognitive load (Paas et al., 2004). Merriënboer and Ayres (2005) state that one example
of extraneous cognitive load is “searching for information that is needed to complete a learning task in instructional materials” (p. 7). Using Merriënboer and Ayres’ example, in the case of online courses this extraneous cognitive load might come from being unfamiliar with the course’s navigational structure or the tools used within the course. Developing a schema for the mechanics and navigational structure of online courses prior to entering a real online course lowers students’ extraneous cognitive load, and therefore their overall cognitive load. This allows a student to immediately focus all their attention on the coursework at hand, instead of trying to learn academic curriculum while also trying to learn how to navigate the learning management system. Keeping a student’s cognitive load within the range of their available working memory is critical to learning and student success (Paas et al., 2004).

*Lowered anxiety and raised confidence.* An additional benefit of having a framework and schema already established prior to beginning online courses is that it can increase students’ confidence levels and lower their anxiousness about beginning their first online course. Multiple students’ responses support this assertion, as noted in the following statements.

**Gabby (student):** I felt more confident with what I was doing instead of being in a situation where I thought I knew what to do... I was just able to do the quizzes and reassure myself, yes, I know what the discussion board is and that thing.

**Hazel (student):** The first time back in 25 years at school which was a little nerve-wracking.... Because I took Virtual Backpack, honestly, I really wasn't even nervous... When
you got into the [first online] class, you were very comfortable with where to go.

Student survey: I think overall this is a good idea so students do not feel lost before taking an online class.

Student survey: The virtual backpack program was extremely helpful and made me feel prepared for my online courses.

One thing that really stands out when listening to students’ experiences is hearing the emotions they felt. The previous statements had phrases such as “felt more confident”, “nerve-wracking”, “lost”, “wasn’t nervous” and “feel prepared.” It is encouraging to hear that the Virtual Backpack course made a positive difference to these students and helped reduce their anxieties about beginning their first online class.

Another interesting dimension of this category relates to adult students who have been out of school for some time. In Hazel’s remarks above, she notes that she had been out of school for 25 years, and that coming back was “nerve-wracking” but because of the Virtual Backpack course, when she began her first online course she “wasn’t even nervous.” Another student survey respondent remarked “I graduated from college in 1986, and I could not have taken an online course without the Virtual Backpack.” This student did not believe she would have had the confidence to be successful in an online course without the preparation provided by the Virtual Backpack course. A faculty survey respondent similarly noted an increased level confidence among older students, noting “I think that the VB course particularly helped my nontraditional-aged online students feel more confident about communicating with me, which helped me help them much sooner in the course.”
**Learner achievement and engagement.** While the student population interviewed and surveyed would understandably not have a baseline with respect to the typical level of student success in online courses, many faculty reported seeing increase levels of student success after the implementation of the Virtual Backpack course. For example, Jamal (faculty) stated that his “grades, overall, were much better this semester” and that “a few [students] dropped, but I had most of my students intact to the end, and I think most of them got As, Bs or Cs.” Samantha (faculty) also remarked if students “hadn't been forced to take that [the Virtual Backpack], I don't know that they'd be able to do what we're doing right now.” Faculty also noted seeing an increased level of student engagement in their courses. For example, Jamal stated that “this semester, students did seem… a little bit more engaged and attentive.” These finding are especially surprising considering faculty and students were both dealing with the impact of the COVID-19 pandemic when these interviews were conducted.

**Summary of Theme 2.** Even beyond reference to specific student skills, both students and faculty reported a general sense of value and appreciation for the Virtual Backpack course. Students reported that having the Virtual Backpack course modeled after a real online course was very helpful, and it greatly reduced their apprehensions entering their first online class and gave them the confidence they needed to be successful. The Virtual Backpack course also helped students immediately focus their attention on the academic curriculum in the course, rather than learning how to navigate the learning management system or use any of its particular tools. Faculty reported similar findings, confirming that in some instances grades were improved after the
implementation of the Virtual Backpack course compared to before the intervention was implemented.

These findings are supported by the existing research literature, where the implementation of a readiness course has been shown to improve student success at other institutions. For example, a study at a rural community college in west Michigan by Wojciechowski and Palmer (2005) found that the one of the biggest factors related to student success was having attended an optional orientation session prior to the starting online courses. The results were so strong in this study that the authors recommend “individuals at this community college (and perhaps elsewhere) to consider making such attendance mandatory” (p. 17). In another study, Jones (2013) found that implementing a mandatory online student orientation at a rural community college positively increased retention.

**Theme 3: The Virtual Backpack course had minimal impact related to students’ time management skills.** Surprisingly, one key student skill, namely time management, did not appear to be phased by the implementation of the Virtual Backpack course. This section will explore the findings related to this category.

*Time management is an important student skill.* When asked what they felt was the most important factor related to online student success, a total of seven student interview participants listed time management as the most important student skill. Examples of these students’ statements can be found in the following excerpts:

April (student): Definitely time management. I would say that's number one.

Frank (student): Time management is very important for online courses.
Harry (student): I think time management is the biggest thing with taking all of your classes online.

Hazel (student): I was most concerned about because working full-time and having a family and trying to do online classes.

Libby (student): Time management, number one.

These findings are supported by numerous studies on online student success. Fetzner (2013) interviewed unsuccessful online students, asking “What advice would you give to students who are considering registering for an online course” (p. 16). Fetzner notes that the majority of comments referenced soft skills, and time management was one of the top four common responses from students. According to Lee and Choi (2011), a lack of time management skills is one of the leading factors that contributes to withdrawals in online courses. In a study by Rooij and Zirkle (2016) at George Mason University, the researchers found that “issues related to time management, focus and initiative seemed to be the greatest online student challenges” (p. 3). The responses from students at MTC align with the findings of a study by Davis (2006) which found that students perceived time management as one of the top two important traits necessary to be successful in the online environment, along with self-motivation.

Since time management skills seem so inextricably linked to online student success, it is not surprising that many readiness courses include the topic of time management (Kift, 2015; Robichaud, 2016; Van Rooij & Zirkle, 2016). When developing the curriculum for the Virtual Backpack course, I understood that time management was a key student skill based on the current research literature. As such, a section of the
Virtual Backpack course is specifically intended to improve students’ time management skills, as noted in Figure 4.13.

**Effective Time Management Skills**

Technically, time cannot be managed, but we label it time management when we talk about how people use their time. We must find effective and efficient ways to spend our time, allowing us to accomplish our most important tasks and spend time with the people most important to us.

**Transition to College**

One challenge for many students is the transition from the structure of high school to the structure of college. In high school, students spend a large portion of their time in class (approximately 30 hours in class per week), while full-time college students may spend only one-third of that time in class (approximately 12 hours in class per week). Further, college students are assigned much more homework than high school students. Think about how many times one of your high school teachers gave you something to read during class. In college, students are given more material to read with the expectation that it is done outside class.¹

¹This can create problems for students who are unable to set aside proper study time for each of their courses. Keep in mind for full-time students.

Figure 4.13. Screenshot of module on time management skills.

**Virtual Backpack course’s limited impact on students’ time management skills.**

Interestingly, while students repeatedly listed time management as one of the most important factors related to being successful in the online environment, they also noted that they felt that the Virtual Backpack course had no impact on enhancing that particular skill for them. For example, April (student) remarked that “I don't really feel like it [the Virtual Backpack] helped me with time management.” April (student) also noted that she “was having trouble keeping up with what was due when.” Frank (student) stated that even though he completed the Virtual Backpack, he “missed some of the assignments the first week.” A student survey respondent noted, “I’m not sure that it [the Virtual Backpack] directly helped me… with time management.” In addition, eight of the 10 student interview participants made comments that they were still working on improving their time management skills. One faculty survey respondent agreed that students do not always manage their time well, as she states “Unfortunately…most students still treat the
course as a ‘weekend’ course. I have assignments open for an entire week, but most
students submit in the final few hours of the last day to submit.”

**Summary of Theme 3.** Theme 3 presents one of the more surprising findings of
this research study. While there is strong evidence that the Virtual Backpack course
enhanced many important student skills, as noted in Theme 1, it unexplainably did not
improve one of the most vital student skills, namely time management. While students
overwhelmingly understood that time management is vital to online student success, they
also reported that they did not feel the Virtual Backpack course helped them in this area.
Furthermore, almost every student noted that time management is something that they
continue to work on regularly.

**Theme 4: There are some factors that inhibit the effectiveness of the Virtual Backpack course.** Students and faculty alike commonly noted that there are other
internal and external factors that inhibit the effectiveness of the Virtual Backpack course
on online student success. This sentiment is supported by the existing research literature.
For example, Park and Choi (2009) discuss additional factors that impact persistence in
online courses, including personal issues such as health, scheduling conflicts, financial
problems, and family issues. Some of these life factors prove difficult for researchers to
apply interventions towards, due to the fact that these factors lie outside the control of the
institutions. This also means these factors also fall outside the impact of a readiness
course such as the Virtual Backpack.

**Factors associated with online instructors.** While many students gave example
after example of glowing review of their instructors, some students noted that when they
had an instructor that was sub-par, it was difficult to be successful in that class, regardless
of the information they received from the Virtual Backpack course. Responses in this area clearly fell into two pattern codes. The first pattern code relates to course design issue that made navigating their online course confusing. The second pattern code relates to the actual teaching of the course, and the responsiveness of the instructor.

*Online course design sometimes differs from Virtual Backpack curriculum.*

Student interview participants noted frustration and confusion when their online courses were not designed in a way consistent with what was taught to them in the Virtual Backpack course. The Virtual Backpack course set up an expectation for students that their first online course would have a particular structure, when in fact in some cases this turned out to not be true.

Frank (student): One of my courses that I took online this semester… I felt like for me, it was kind of disorganized… I feel like with my experience of the two online courses, they were very different setup.

Gabby (student): Which some of that, again, is the professors, just because they have so many things going on and don't organize them always the best way.

Libby (student): It did make me nervous at first because I wasn't really sure if I was getting all the assignments in or not because there were a few different places that I could check for it.

Student survey: [Some instructors] have course materials in different places. It becomes confusing and frustrating.
One of the faculty interview participants, Bryan, commiserated with these students by saying, “So you've got a student come in and they've had one class organized one way and then they've had another class organized another. That's got to be really frustrating and confusing.”

The sentiments expressed by Bryan (faculty) and these students are supported by the existing research literature. A study by Milligan and Buckenmeyer (2008) found that orientation sessions positively correlated with increased student readiness, and the authors concluded the study with a recommendation “offer a one-time face-to-face orientation session to help students become familiar with the course” (p. 457). However, these efforts are in vain if the design of the students’ first online course does not align with the expectations set by the Virtual Backpack course.

*Online instruction sometimes does not compliment the Virtual Backpack course.*

In addition to design issues with some online courses, some faculty expressed concern that some instructors may make it difficult for students to be successful in certain online courses. Interestingly, this feedback was more common among faculty than students. A few examples of statements from faculty are as follows:

Malachi (faculty): I think some of them may be teaching this not to the best of their abilities, but I also think that that's the nature of the on campus courses as well… I think some faculty are more involved… I think some of them not as much.

Alice (faculty): So, if you… had no past experience taking an online course as a student, I think there's the misconception that
you basically just give them quizzes and have them take a test and that's it.

Jamal (faculty): Their instructor's not reaching out to them.

These concerns of students feeling socially isolated are supported by existing research literature. According to McInnerney and Roberts (2004), students who are new to online learning often feel lost and socially isolated. Researcher also note that many online learners withdraw from courses due to a lack of engagement and a feeling of isolation (McInnerney & Roberts, 2004; Willging & Johnson, 2009; Yuan & Kim, 2014).

**Factors associated with online students.** While poor course design and less than stellar instruction was reported as a student success concern, both students and faculty also noted many factors related specifically related to students that also impact student success. Many of these factors fall outside the reach or ability of the Virtual Backpack course to have a substantial impact. The responses shared through interviews and surveys fell most commonly into three distinct categories: students who did not take the Virtual Backpack course seriously, sub-par prerequisite academic skills, and external life and family issues. Findings from each of these areas will be discussed in depth in the following section.

*Some students did not take the Virtual Backpack course seriously.* To encourage students to engage with the Virtual Backpack course content, an assessment at the end of each module was provided to ensure their knowledge of the topics covered. Students must score an 85% or higher on each end-of-module quiz to successfully complete the Virtual Backpack course. While developing the assessment questions for each module, I soon discovered that it was difficult to craft questions that were rigorous enough to
ensure students thoroughly completed the module, without being overly tricky or unnecessarily challenging. I found that some elements of student readiness are somewhat intuitive, especially when displaying the possible options in a multiple choice, matching, or multi-select question format. For example, consider the following quiz question from the Virtual Backpack course.

![Figure 4.14. Screenshot of an end-of-module quiz question.](image)

It is possible that a student could use their deductive reasoning skills to get the question in Figure 4.14 correct, even without completing the module titled “Exploring Your Course”. Another concern was that successfully completing the Virtual Backpack course was a prerequisite for enrolling in an online course. Since some students wait until the last minute to register for courses, students may try to, or need to, hurry through the Virtual Backpack course so they can register for an online course.
When I interviewed the student participants, two students noted that, in fact, they did hurry through the Virtual Backpack course. Gabby (student) confessed, “I honestly didn’t read everything, I just did the quizzes.” Khadija (student) also stated, “Anything I felt like I already knew, I would just skip to the quizzes.” While this was only two out of 10 student interview participants, extrapolating this same proportion of students to the general population would indicate quite a few students are not taking the Virtual Backpack course seriously. If students are not actually reading and absorbing the curriculum of the Virtual Backpack, then it is likely inhibiting the effectiveness of the Virtual Backpack course.

Prerequisite academic skills. During the faculty interviews, faculty were asked the question, “What are the common problems that a student may have when he/she is taking an online course for the first time?” In answering this question, three faculty made remarks related to students’ prerequisite academic skills, which are as follows:

Jamal (faculty): There's so many that don't… even know how to read a textbook well.

Malachi (faculty): The ones who struggle are not academically [prepared]...
That's why they're here. They're not academically prepared and they maybe don't know what it takes to be good students.

Maria (faculty): The student's reading level is so low that reading and following directions with their understanding level is not adequate… They don't read well enough to follow the directions.
As noted by the faculty above, if a student has poor reading skills or are otherwise not prepared academically, it will be difficult for the student to be successful in an online course. Wladis et al. (2015) note that 42% of all freshman at two-year community colleges need at least one developmental level course. MTC is a two-year technical college, and as such, has many students who are enrolled in developmental level courses. Students in developmental or remedial courses often have less-than-average reading or mathematical abilities. A challenge that exists for developmental level students in online courses is the fact that reading is an important prerequisite skill for online courses, since much of the instruction comes by way of text. Improving reading and mathematical skills takes years to develop and would be outside the scope and reach of the Virtual Backpack course. As such, these lacking prerequisite academic skills may inhibit the effectiveness of the Virtual Backpack course.

*Life issues often impact student success.* One reason online education has expanded at such a rapid rate is the convenience and flexibility of online courses and programs (Davis, 2006; Jaggars et al., 2013; Yowe, 2017). Park and Choi (2009) discuss how online courses are more convenient and flexible to align with students’ busy lives. Working adults or students who have childcare obligations may opt to take online courses as well (Bambara et al., 2009; Boston & Ice, 2011). While conducting the faculty interviews, faculty were asked, “Why do you think students withdraw from online courses?” and “What are the common problems that a student may have when he/she is taking an online course for the first time?” In response to these questions, many faculty noted that many of our students have life, family, or work situations that make it difficult
for them to be successful. In fact, nine of the 10 faculty interview participants noted this common challenge for MTC students. The following is a summary of their remarks:

Alice (faculty): If they don't have time to come to campus for three hours, chances are they may not have time to do the six hours or nine hours of independent study necessary. I've also seen where students just can't pay a bill and their internet gets shut off at home or their computer breaks… They've taken an online class because they're over committed in their schedule.

Bryan (faculty): The irony is that most of my online students are extremely busy.

Lauren (faculty): A lot of our students will take an online class, because they just had a baby and they're thinking, well, I can do this online class and be at home with my baby.

Malachi (faculty): The ones who seem to stick around for a while and eventually withdraw, it's something else. It's "My job changed, my kid's sick, I've got to work different hours."

Maria (faculty): They have too many either family or work demands that take them away, take their time.

The findings reported by faculty are supported by current research literature. Park and Choi (2009) mention factors that impact persistence in online courses, including personal issues such as health, scheduling conflicts, financial problems, and family issues. Some of these life factors prove difficult for researchers to apply interventions towards, since
these factors lie outside the control of the institutions. In addition, Willging and Johnson (2009) state that two areas that contribute to students withdrawing from online courses and programs include personal reasons, such as financial difficulties or family problems, and job-related reasons, such as a student’s job responsibilities changing mid-program.

**Summary of Theme 4.** While Theme 1 and 2 discuss many of the positive effects of implementing the Virtual Backpack course, students and faculty felt there exists some internal or external factors that inhibit the effectiveness of the Virtual Backpack course. Faculty in particular are concerned about students’ experiences in their colleagues’ courses. Many felt that some faculty are not appropriately engaged with their students, and that their courses are not designed in a way consistent with what is discussed in the Virtual Backpack course.

Students and faculty also felt that there were certain factors associated with students that limited the effectiveness of the Virtual Backpack course. For example, some students have deficient academic skills that are a prerequisite for being successful in an online environment, such as basic reading and writing skills. In addition, some students reported not taking the Virtual Backpack course very seriously. These students simply clicked through the course and took the quizzes without deeply looking at the curriculum. In this case, it is difficult to say that the Virtual Backpack course had a substantive impact on their level of readiness. Lastly, an overwhelming number of faculty reported that many students have overburdening life situations that make it challenging for them to be successful in online courses. Faculty note that many students have tremendous family and job obligations, and take online courses precisely because they are unable to commit the time to come to campus regularly.
Chapter Summary

The overall findings indicate that both students and faculty found substantial value in the Virtual Backpack course. Over 200 individual codes related to value that students and faculty found in the Virtual Backpack course, or related to specific skills that the Virtual Backpack course enhanced. Students felt well prepared to enter their first online class, and felt equipped with enhanced student skills. These skills gave them increased confidence and lowered their anxiety about taking their first online class. Likewise, faculty reported better grades, better student communication skills, and increased levels of student engagement from the students who completed the Virtual Backpack course.

Unfortunately, there did prove to be limits to the Virtual Backpack course’s effectiveness. One area in particular related to the specific student skill of time management. While the Virtual Backpack course was able to improve students’ abilities to navigate online courses and use the tools within D2L Brightspace, students and faculty alike noted that the Virtual Backpack course did not affect or improve students’ time management skills. Even after completing the Virtual Backpack course, many students noted that they still struggle with time management.

There are also several factors that are completely outside the scope of the Virtual Backpack course, and will likely never be able to be addressed by a readiness course. With respect to faculty, interview participants noted that some faculty do not have an easy-to-follow course design structure, while others tend to have low levels of student engagement. This creates a disparity in some cases between what students are told they
should expect within the Virtual Backpack course, which does not align with reality once students enter their first online course.

With respect to students, it became clear through the interview process that many of our students have very busy lives, and that some are so overextended that it impacts their performance within online courses. Some students also come to MTC with academic skills that are not to the level necessary to be successful in online courses. Online courses, by their very nature, are very text heavy, so students with reading or writing deficiencies may struggle. Lastly, some students reported that they did not take the Virtual Backpack course very seriously. They quickly moved through the course, only taking the quizzes along the way. Naturally, the impact of the Virtual Backpack course will be mitigated for students who skip the course curriculum and only attempt the quizzes.

However, even considering these limitations the overwhelming response for the Virtual Backpack course was positive. Two remarks in particular that left an impression on me were both from older students who were returning to college after an extended time off. Hazel (student) notes that she has been out of school for 25 years, and that coming back was “nerve-wracking” but because of the Virtual Backpack course, when she began her first online course she “wasn’t even nervous.” Another student survey respondent remarked, “I graduated from college in 1986, and I could not have taken an online course without the Virtual Backpack.” This was a powerful statement to me, and I feel burdened that we did not have the Virtual Backpack course available to students sooner, who may have not been successful at MTC because they did not have access to a resource that could have adequately prepared them for online learning.
CHAPTER 5: DISCUSSION, IMPLICATIONS, AND LIMITATIONS

The purpose of this action research was to evaluate the effectiveness of an online readiness course to enhance online students’ success at Midlands Technical College. Various quantitative (i.e. end-of-course grades, student surveys, and faculty surveys) and qualitative (i.e. student surveys, student interviews, faculty surveys, and faculty interviews) data were collected and analyzed in order to answer three specific research questions. This chapter uses the four qualitative themes shown in Table 4.11 and the quantitative findings that emerged from data analysis to answer the three research questions. The (a) discussion, (b) implications, and (c) limitations of this research are included in the following sections.

Discussion

The literature on student readiness, student readiness courses, and factors related to online student success helped situate this study into a larger body of knowledge. In this convergent parallel mixed-methods study, both quantitative and qualitative data were used to answer the three research questions that were posed. This section will discuss the findings related to the three research questions, including (a) the extent that the online readiness course impacted online student success, (b) students’ perceptions of the readiness course, and (c) faculty’s perceptions of the readiness course.
Research Question 1: How and to What Extent Does Taking an Online Readiness Course Impact Online Student Success at Midlands Technical College?

The original motivation for this study began with the observation that the success rates for online classes at MTC substantially lagged behind that of classes taken on-campus. This disparity led MTC to launch a Quality Enhancement Plan (QEP) designed to help online students be more successful. After a review of the literature, MTC decided that its primary intervention would be a readiness course, designed to prepare new online learners for the online environment.

The data source used to answer Research Question 1 was end-of-course grades of first-time online students from Spring 2019 and Spring 2020. Students were deemed successful in their online course if they earned an end-of-course grade of C or better. Specifically, end-of-course grades for first-time online students in Spring 2020, which was after the implementation of the Virtual Backpack course, were compared to end-of-course grades for first-time online students from Spring 2019, which was prior to the implementation of the Virtual Backpack course. Spring semesters were compared to each other, instead of comparing Spring to Fall or Summer, due to predictable differences in student population for each of these terms.

The percentage of successful first-time online students changed from 57.9% in Spring 2019 to 61.6% in Spring 2020, for an increase in success rate of 3.7%. To determine if this increase in success rate was statistically significant, I employed a chi-square test for independence. The chi-square test result suggested the change in success rate was statistically significant ($p < .05$). These findings suggest that the Virtual Backpack course had a positive impact on online student success. Statements made by
faculty members during the one-on-one interviews align with these quantitative findings. For example, Jamal (faculty) stated that his “grades, overall, were much better this semester” and that “a few [students] dropped, but I had most of my students intact to the end, and I think most of them got As, Bs or Cs.”

When comparing the results of this study to the national literature, this study’s findings are supported by some studies and contradicted by others. For example, White (2018) conducted a similar study and concluded that there was no correlation between the completion of a readiness course and online student success. However, one key difference in White’s study versus this study is that the readiness course in White’s study was voluntary for students. White noted that almost all student participants were successful in the readiness course as well as their subsequent online courses. This may indicate that the students who were least prepared for the online environment opted to not participate in the readiness course. Conversely to White’s study, the readiness course within this study was mandatory prior to a student enrolling in their first online course. This means that all first-time online students at MTC were forced to successfully complete the course regardless of their level of readiness prior. Interestingly, Julia, one of the student interview participants in this study, stated, “I like that [the Virtual Backpack] was required because honestly, if it was just optional, I probably wouldn't have taken it because I would have said, ‘I don't have time.’”

Multiple other studies supported the findings of this study (Jones, 2013; Rovai, 2003; Wojciechowski & Palmer, 2005). For example, Marshall (2017) conducted a study of 433 first-time online students at a two-year community college. She examined if there was a statistically significant difference in retention, academic success, and persistence
between first-time online students who participated in an online orientation course and those who did not participate. She found that there was a statistically significant difference in all three categories for readiness course completers versus non-completers.

In another study that confirms my findings, Koehnke (2013) compared the success rates for a treatment group of students that participated in an online orientation and a control group of students did not. At the conclusion of the study, the treatment group who completed the online orientation had an increase of 4.9% in the number of students earning a C or better for the course. This was determined to be a statistically significant improvement in success rate compared to the control group.

In summary, a holistic view of the quantitative and qualitative findings of this study support that the online readiness course had a positive impact on online student success. While these results do not align with the findings of every similar study, the results do align with the findings of many similar studies.

**Research Question 2: What are Students’ Perceptions of the Readiness Course With Respect to its Effectiveness in Preparing Them for Online Learning?**

Students were asked via a Likert scale survey question to indicate the extent to which the Virtual Backpack course prepared them for online classes. After descriptive statistics were completed on the responses, this question had a mean of 3.88, which correlates most closely with a response of Agree. The survey went on to ask more specifically about students’ perceptions regarding specific topics related to student readiness, such as their ability to communicate effectively, navigate online courses, employ time management strategies, and more. The highest rated area was a tie between students’ improved course navigation skills and their ability to utilize the tools within
D2L Brightspace ($M=4.05$). This finding was supported by qualitative data obtained from student surveys and interviews. For example, one students’ survey response noted, “I had never taken online courses before, and the Virtual Backpack taught me how to navigate the portal. It would have been pretty confusing without it!” Likewise, when Hazel (student) was asked what she thought was a particularly helpful topic covered in the Virtual Backpack course, she mentioned, “I think that the Virtual Backpack did a really good job of giving feedback on the tools that would be used.” Also, Gabby (student) noted “I definitely feel like it helps a lot of people maybe who haven’t been in school for a while or aren’t as proficient in computer skills figure out what they’re doing.” These responses came at a time when MTC was working towards getting a consistent navigational structure in all of its online courses. A review of the literature shows that adhering to a consistent navigational structure, such as Quality Matters Standards, across an institution increases online student success (Barczyk et al., 2017; Martin et al., 2017).

Students also expressed thanks and appreciation regarding the Virtual Backpack course’s ability to model the navigational structure they would experience in their first online class. For example, Cora (student) stated “When you get into the system for your regular classes, you're like, ‘Oh, that's what it was talking about.’” A student survey respondent noted, “I felt as though the Virtual Backpack course was incredibly useful in showing… what online classes are like in a college setting.” The familiarity they had when entering their first online class increased students’ confidence and lowered their anxieties. For example, Hazel (student) shared that she has been out of school for 25 years, and that coming back was “nerve-wracking” but because of the Virtual Backpack course, when she began her first online course she “wasn’t even nervous.” Another
student survey respondent remarked, “I graduated from college in 1986, and I could not have taken an online course without the Virtual Backpack.” This level of comfort in these students’ first online courses may be attributed to decreased levels of extraneous cognitive load as they began the course. Merriënboer and Ayres (2005) state that one example of extraneous cognitive load is “searching for information that is needed to complete a learning task in instructional materials” (p. 7). Since these students had already built a schema for the design and function of online courses at MTC prior to the first week of class, their mental energy could be focused on the academic curriculum of the course instead of having to learn the structure or tools within the course.

An interesting and unexpected finding from student responses related to how often students returned to the Virtual Backpack course, even once they were in their actual online courses. For example, Gabby (student) stated, “If I ever did have a question [in an actual online class], which did happen once, I was able to go back to the material and look through it before having to email someone or call someone with my question.” Similarly, Cora (student) remarked, “Anytime you need to go back and revisit something, it's there and that's incredibly helpful… Thankfully, I was able to go back and reference certain things as I started to experience the different components within the online learning.” This indicates that students perceived the Virtual Backpack course to be a helpful online learning resource.

The lowest rated response in the student survey related to the extent to which the Virtual Backpack course helped the students’ time management skills ($M=3.32$), which most closely related to the statement “Neither Agrees nor Disagrees.” These findings slightly differ from the findings from the student interviews. Student interview
participants repeatedly indicated that time management was one of the most critical skills related to online student success. For example, Harry (student) stated, “I think time management is the biggest thing with taking all of your classes online.” However, most students stated that they still struggled with time management even after taking the Virtual Backpack course. For example, April (student) directly noted, “I don’t really feel like [the Virtual Backpack] helped me with time management.” The statements made by MTC students related to the value of time management skills are supported by numerous studies on online student success. Fetzner (2013) interviewed unsuccessful online students, asking “What advice would you give to students who are considering registering for an online course” (p. 16). Fetzner notes that the majority of comments referenced soft skills, and time management was one of the top four common responses from students. According to Lee and Choi (2011), a lack of time management skills is one of the leading factors that contribute to withdrawals in online courses. In a study by Rooij and Zirkle (2016) at George Mason University, the researchers found that “issues related to time management, focus and initiative seemed to be the greatest online student challenges” (p. 3). In a study by Davis (2006), she asked students about their perceptions related to factors that impact online student success, and found the students deemed time management skills to be one of the top three skills that students should possess in order to be ready for the online environment and that a deficiency in this area could lead to a student not being successful in the online environment. Based on student survey and interview responses in this study, students’ perceptions were that the Virtual Backpack course was not effective in helping improve their time management skills.
Another common response that emerged from the student interviews related to external factors that inhibited the effectiveness of the Virtual Backpack course. For example, students perceived there to be issues with some online instructors that impacted their ability to be successful online. In particular, students stated that some online courses have an unclear navigational structure that does not align with the expectations set within the Virtual Backpack course. For example, Frank (student) noted, “One of my courses that I took online this semester… I felt like for me, it was kind of disorganized.” Also, a student survey respondent stated, “[Some instructors] have course materials in different places. It becomes confusing and frustrating.” Students perceived that these factors may impact their ability to be successful in an online course, but these factors were not something the Virtual Backpack course was able to help students overcome. For example, the Virtual Backpack course set an expectation of how an online course at MTC would be structured based upon the standard navigational structure used at MTC, but this expectation does not help students if their actual online course was not built to these standards. It is critical to ensure that all online courses at MTC are designed consistently and all have engaging instruction.

**Research Question 3: What are Faculty’s Perceptions of the Readiness Course With Respect to its Effectiveness in Preparing Students for Online Learning?**

Faculty were asked via Likert scale survey questions to indicate the extent to which the Virtual Backpack course better prepared students for online classes, compared to the prior year which did not have the advantage of the Virtual Backpack course. After descriptive statistics were completed on the responses, this question had a mean of 3.92, which correlates most closely with a response of Agree. Faculty were then asked more
specifically about the Virtual Backpack course’s ability to impact particular skills important for online student success. Interestingly, the faculty responses aligned quite closely with the student responses.

The two highest rated Likert scale responses correlated to “students’ knowledge of how online courses are structured at MTC” ($M=4.18$) and “students’ understanding of how to utilize tools in D2L” ($M=4.15$). These survey responses align with the statements made by faculty during the one-on-one interviews. For example, Alice (faculty) noted that “I didn't get a lot of those questions like, ‘I don't know where the quizzes are’, or ‘I don't know how to post in discussions.’” Similarly, a faculty survey respondent noted, “I don’t think I had a single student this semester email me that they could not find information within the course or could not submit an assignment.” In total, eight of the 10 faculty interview respondents made similar remarks that students’ ability to navigate D2L Brightspace had improved since the inception of the Virtual Backpack course. The literature supports for these findings about the importance of understanding the navigational structure and tools used within online courses are consistent with those already mentioned for Research Question 2 (Barczyk et al., 2017; Martin et al., 2017).

Another common response from faculty related to their perception that the Virtual Backpack course helped improve their students’ online communication skills. For example, a faculty survey respondent noted, “Prior to the Virtual Backpack I've noticed a reticence to communicate sooner rather than later. Communicating sooner helped me keep those students from becoming discouraged when they started out rusty and lacking confidence with certain writing skills.” Rosa (faculty) noted that after the implementation of the Virtual Backpack course, “Even those non-traditional students who are a little
older and sometimes more trepidatious about reaching out to an instructor, I feel like they just did it more readily,” and that “students were quicker to contact me with questions.” Multiple studies discuss the impact of effective communication on student success in the online environment. For example, Jaggars and Xu (2016) note that “only the quality of interpersonal interaction within a course relates positively and significantly to [online] student grades” (p. 271). As students begin to communicate more effectively in the online environment, Jaggars and Xu suggest that this will lead to increased online student success.

Lastly, several faculty expressed a general sense that they perceived the Virtual Backpack course to be a helpful online learning resource to students. These thoughts were expressed in generally positive remarks related to the Virtual Backpack course. For example, Malachi (faculty) said “I think it’s great” and “I’m 100% for the Virtual Backpack.” Jamal (faculty) stated, “I thought you covered a lot of good topics that I would have wanted to see covered.” In fact, one faculty member, Maria, “I think it [the Virtual Backpack] should be required for all students.” When triangulating all of these data sources together, the data suggests that the Virtual Backpack course was effective in helping students be prepared for the online environment and gave them the tools necessary to be successful.

Similar to the student responses, the lowest rated Likert scale response among faculty survey completers correlated to “students’ time management skills” ($M=3.28$). One faculty survey respondent noted that students do not always manage their time well, as she states “Unfortunately…most students still treat the course as a ‘weekend’ course. I have assignments open for an entire week, but most students submit in the final few hours
of the last day to submit.” Also, during member checking, faculty participants were sent a summary of the tentative categories and themes. Upon reading the theme that discussed the Virtual Backpack course’s limited impact on students’ time management skills, Jamal (faculty) stated, “Time management is a huge one, but your conclusion about the VB not impacting it is right on.” The supporting literature related to the importance of time management skills and its impact on student success has already been mentioned during the discussion on Research Question 2.

One factor that may be in effect with respect to students’ time management skills, or lack thereof, is that time management presupposes that the individual actually has time to manage. Alice (faculty) notes, “[Students take] an online class because they're over committed in their schedule” and “If they don't have time to come to campus for three hours, chances are they may not have time to do the six hours or nine hours of independent study necessary.” Many online students at MTC have overwhelming life, family, and work obligations. These students are often caring for small children, working full-time to support their family, or are simply trying to survive. Perhaps these students are so overcommitted, there are no spare hours left in the day to manage, especially when weighed against obligations that would take priority over schoolwork. Park and Choi (2009) found that these external factors, including personal issues such as health, scheduling conflicts, financial problems, and family issues impact persistence in online courses.

**Implications**

This research holds valuable implications for me as the Associate Vice Provost at MTC, staff at MTC who oversee online education, higher level administrators such as the
MTC Provost and the rest of the Executive Council, and other researchers attempting to improve online student success. This particular study is timely with the arrival of the COVID-19 pandemic, since academic institutions across the nation and world are currently attempting to quickly prepare vast numbers of students for the online environment. In the following section, three categories of implications are discussed: (a) personal implications, (b) implications for institutions of higher education, and (c) implications for future research.

**Personal Implications**

When I began this research study, I was the Director of Online Learning at MTC as well as the QEP Director, charged with developing and implementing the Virtual Backpack course as part of MTC’s Quality Enhancement Plan. Assessing the effectiveness of the QEP is already a requirement by SACSCOC, which is the accrediting body for MTC. This research study allowed me to do rigorous action research on a topic that is intimately linked and valuable to my local context, and the findings of this study will be used in the MTC SACSCOC reaccreditation report. In fact, I intentionally began this doctoral program in the year that would make my research data collection period coincide with the implementation of the Virtual Backpack course. While I am now the Associate Vice Provost at MTC and no longer work in the field of online education daily, I am still the QEP Director and have a strong interest in enhancing online student success. I firmly believe that improving online education is critical to MTC’s long-term success.

Reflecting on my personal growth through this research study, I note two personal implications that have great value to me: 1) grounding proposed actions within established research, and 2) the value of using a blend of quantitative and qualitative data.
Grounding proposed actions in established research. One of my biggest struggles during this research process was keeping my own experiences and biases in a proper perspective. I began my career at MTC 13 years ago as a mathematics instructor and taught online and on-campus for seven years. During that time, I observed student behaviors, perceptions, levels of readiness, and factors that impacted their level of success. This experience began to form my own thoughts and opinions about how to positively impact student success. I then became the Director of Online Learning, and suddenly had the freedom and power to exercise those thoughts about how to improve online student success. I was also able to see “behind-the-curtain” for all online courses at MTC. This experience allowed me to see both good and bad course design practices and all levels of faculty engagement with students. It allowed me to talk with faculty on a daily basis about what was and was not working in their classes with respect to helping their students be more successful. I was then promoted to Associate Vice Provost in 2018 and I got an even broader perspective of factors that impact student success. Over the course of 13 years and this wide range of experiences, I began this research study with some rigid perspectives that had to be broken down. When making statements regarding what would or would not help improve online student success, one of my advisors, Dr. Grant, would continually ask me “where does it say that in the literature?” Over time, I learned the value of grounding any proposed actions within established research. Before beginning any initiative, I now understand that it is critical to begin with a rigorous review of the existing literature.

Blend of quantitative and qualitative data sources. Until this doctoral program, both my undergraduate and graduate degrees have been in the field of Mathematics. I
taught mathematics for many years and have always leaned towards quantitative research methods. To me, quantitative data analysis is cleaner and more clearly defined. Qualitative data analysis seems to be messier and is personally more challenging. However, through the course of this study I have learned to value qualitative data. Having both quantitative and qualitative data helped provide a richer and more holistic picture of reality during this study (Creswell, 2014; Creswell & Clark, 2017). I learned so much about coding, and looking for patterns, categories, and themes through this process. Any future research projects I conduct will likely continue to have a mix of both quantitative and qualitative data analysis.

**Implications for Midlands Technical College**

This research study has multiple implications for MTC, many of which can be generalized for any institution of higher education. These implications include (a) the value of an online readiness course, (b) recommended revisions to the Virtual Backpack course, (c) considerations for readiness surveys, and (d) faculty development opportunities.

**Value of an online readiness course.** The findings of this study have exhibited the value of the Virtual Backpack course. Online student success rates increased 3.7%, even in the midst of the COVID-19 pandemic. Students and faculty alike expressed value and appreciation for the course, and indicated that it helped prepare students for the online environment. An implication for MTC is to consider how it can build on this success in order to further improve student success at MTC. For example, Maria (faculty) noted in her interview, “I think that [the Virtual Backpack] should be required for all students.” MTC should weigh the degree to which the Virtual Backpack course is a
This discussion is particularly timely in light of the COVID-19 pandemic. At the time these interviews were being conducted in Spring 2020, COVID-19 surged to prominence and all of MTC’s courses abruptly moved online mid-semester. Faculty who had never taught online were suddenly online instructors, and students who had never taken an online class were suddenly online learners. At the time the Virtual Backpack course was implemented in Fall 2019, I was in the midst of leading an effort to pilot the concept of synchronous online classes at MTC, and I was only working with around five faculty members to test out this new mode of instruction. Due to COVID-19, MTC offered over 150 synchronous online sections in Fall 2020. MTC must consider whether to keep the Virtual Backpack course only required for students entering asynchronous online courses, expanding the requirement to include synchronous online courses, or requiring all students at MTC complete the Virtual Backpack course.

**Revisions to the Virtual Backpack course.** The findings of this study have three implications for future curriculum revisions of the Virtual Backpack course. These implications include (a) a revised module on time management skills, (b) an explanation about the value of the Virtual Backpack course, and (c) additional information regarding non-academic student resources.

**Revised module on time management skills.** The current research literature consistently states that time management is one of the most important student skills. For example, Rooij and Zirkle (2016) found that “issues related to time management, focus and initiative seemed to be the greatest online student challenges” (p. 3). Research
findings from this study indicated that although the Virtual Backpack course positively impacted many important student skills, it was unsuccessful in enhancing students’ time management skills. MTC should review the curriculum for this module and consider substantially changing its content and assessments. Revisions may include having students do a time management plan that is specific to their lives, or sharing some of the responses from student participants of this study that state the importance of having time management skills when taking online classes. Furthermore, an item analysis should be conducted on the end-of-module quiz questions to ensure that quiz questions are accurately assessing a students’ knowledge of time management principles.

*Explain value of the Virtual Backpack course.* Naturally, the Virtual Backpack course can only have an impact on students who actually engage in the curriculum. To foster student engagement with the curriculum, each module has an end-of-module quiz that students must pass with at least an 85% proficiency. However, many of these questions are somewhat intuitive, especially considering that most of the questions are multiple choice. Unfortunately, a few study participants reported skipping the course content and directly attempting the quiz modules. To emphasize the importance of student readiness for online learning, MTC should consider taking more time at the beginning of the course to explain the value and intent of the Virtual Backpack course. MTC may choose to include quotes from past Virtual Backpack completers, such as one student survey respondent who noted that she “graduated from college in 1986” and “could not have taken an online course without the Virtual Backpack.” Personal statements from their own classmates may resonate better than the words of a faculty member or administrator.
Non-academic student resources. It became evident through the findings of this study that many of our students are overextended, and many of their challenges with online learning are not related to academics. Researchers have shown that one of the attractive features of online education is the convenience and flexibility of online courses and programs (Davis, 2006; Xu & Jaggars, 2013; Yowe, 2017). Park and Choi (2009) discuss how online courses are more convenient and flexible to align with students’ busy lives. Working adults or students who have childcare obligations may opt to take online courses as well (Bambara et al., 2009; Boston & Ice, 2011). As such, MTC should consider adding a module in the Virtual Backpack course that connects students to college resources that can assist with non-academic issues, such as childcare, food insecurity, and transportation. If these non-academic issues can be mitigated, it may help more online students be successful, especially minority or disenfranchised students.

Considerations for Readiness Surveys

As noted in Theme 4, many student and faculty participants noted that there are student-centric factors that impact online student success and fall outside the reach the Virtual Backpack course. These factors include reliable access to technology, childcare challenges, and substantial work obligations, among other things. The current premise of the Virtual Backpack as a readiness course, as opposed to a readiness survey, is that the course will give students the tools they need to be successful. If there are student factors that will impact a student’s potential for success and cannot be addressed by the Virtual Backpack course, it may be worth having a component that signifies to the student when online learning may not be the best fit for them. One strategy that colleges and universities often use to impact online student success is the utilization of an online
readiness survey (Searle & Waugh, 2013; Watkins et al., 2008; Wladis et al., 2016). A readiness survey, as opposed to a readiness course, instead reveals to students whether they already have access to the tools, technology, and time necessary to be successful in online courses. This readiness survey may rightfully dissuade some students who are overburdened with life, family, or job obligations from taking online courses and being unsuccessful. While we do not want to limit access to education, we also do not want to irresponsibly put students into a situation where they cannot be successful, leaving them with a mountain of debt and worse off than if they had never attempted an online course or program. MTC should explore whether to make this readiness survey independent from the Virtual Backpack course, or integrate it as a component within the Virtual Backpack course.

**Faculty Development Opportunities**

As noted in Theme 4, both students and faculty had concerns regarding their experiences in some of their online courses. Many students talked about the wonderful online faculty they had during their first semester. However, some students noted that some online classes had a confusing navigational structure that deviated from their other online courses. For example, one student survey respondent noted, “[Some instructors] have course materials in different places. It becomes confusing and frustrating.” Likewise, many online faculty expressed concern that some of their colleagues are not teaching their online courses to an appropriate level of quality, or are not engaged enough with their students. For example, Alice (faculty) noted, “I think there's the misconception [among some faculty] that you basically just give them quizzes and have them take a test
and that's it.” This feedback suggests that MTC should explore some opportunities for additional faculty development.

When the Virtual Backpack course was launched, all faculty were informed about its creation. In fact, a small group of instructors was integral in developing its curriculum. However, there was never a concerted college-wide effort to have every instructor go through the Virtual Backpack course to ensure that their courses align with the expectations set by the Virtual Backpack course. Students are likely to experience frustration and confusion when the Virtual Backpack course sets up expectations that their online courses will be a certain way, but their actual experience is different from the expectation put forth.

I propose that MTC consider having each online instructor at MTC take time to go through the Virtual Backpack course. They should reflect upon how their courses align with the curriculum within the course, and make adjustments in their courses as appropriate. Interestingly, some of the harshest criticisms of online instruction came from other online instructors. I suspect that faculty may benefit from seeing how other faculty’s courses are structured. To this end, I also propose that MTC consider implementing a system of peer course evaluation, where small teams of faculty review their colleagues’ online courses based on a predefined set of standards, such as Quality Matters. This peer review system would increase transparency and accountability, and provide for a collaborative effort to improve the design of all online courses.

Implications for Future Research

A core element of action research is that it is cyclical and the findings of this study have implications for my next action research study (Carr & Kemmis, 1986, p.
In particular, three implications for future research include (a) completing the study again during a semester not impacted by COVID-19, (b) revising the curriculum of the Virtual Backpack course, and (c) examining other factors related to improving online student success.

COVID-19. The data collection period for this study was conducted in Spring 2020. The end-of-course grades used for the quantitative analysis were from the Spring semester grades, and the surveys and interviews conducted with students and faculty were scheduled for mid-March 2020. Unfortunately, in March 2020 the COVID-19 pandemic disrupted lives worldwide, including higher education institutions. Our faculty suddenly had to flip all of their instruction online, including faculty who had never taught online. Students who were never online learners, or wanted to be online learners, were suddenly thrust into online courses. Typically, when conducting research, the researcher attempts to control all of the variables except for the intervention being applied in order to localize the effects to just the intended treatment. While it is unclear if COVID-19 helped or hurt online student grades, it is possible that it impacted student performance in some capacity. As an important note regarding data collection, the only online grades considered for this research study were from courses that were initially coded as an asynchronous online course from the beginning of the semester. Courses that flipped to online delivery during the middle of the semester due to the COVID-19 pandemic were not considered in this study.

It would be helpful to recreate this study in a future semester once the COVID-19 pandemic is over. My suspicion is that, if anything, COVID-19 made it more challenging for students to be successful, which makes the 3.7% increase in first-time online student
success even more impressive. For comparison purposes, the success rates of on-campus enrollments decreased 3.6% from Spring 2019 to Spring 2020, which considerably shrank the performance gap noted in Figure 3.1. An updated graphic with the 2019-2020 academic year is displayed in Figure 5.1.

Figure 5.1. Student success rates by mode of instruction at Midlands Technical College.

It is important to note that this data represents all on-ground and online students over the entire academic year, as opposed to only Virtual Backpack completers during the Spring semester. Also, the 2019-2020 academic year includes Fall 2019 and the Virtual Backpack course was not yet in effect during that term. However, it is still interesting to observe that the gap in student success rates is not as wide during the academic year in which the Virtual Backpack course was implemented.

In an attempt to remain as unbiased as possible, it is worth noting that faculty were exceptionally flexible with students during the difficult semester of Spring 2020. Faculty did everything they could to ensure students were successful, and only withdrew
or failed students after exhausting all other possibilities. It remains a possibility that online student grades could have been higher in Spring 2020 compared to Spring 2019 due to this increase in faculty flexibility. However, Figure 4.16 may dispel that concern since the on-ground success rates went down during the 2019-2020 academic year.

Revising the curriculum of the Virtual Backpack course. As mentioned in one of the implications for MTC, I believe the college should consider the findings of this study and revise the curriculum of the Virtual Backpack course. These recommended edits include revising the module on time management skills, add components that discuss the value of student readiness, and provide information to students about non-academic resources, such as childcare, food insecurities, and transportation. I would like to see this research study conducted again after these curriculum changes take place. It would be interesting to see if these changes to the Virtual Backpack curriculum increased student success even further.

Other factors related to online student success. The findings of this study revealed that there are factors that impact online student success that fall outside the reach of the Virtual Backpack course. Some of these factors are internal to MTC, such as online course design and levels of faculty engagement, while others are external, such as the students’ life and family obligations. In addition, MTC has implemented numerous other initiatives in recent years designed to improve student success. For example, MTC has recently changed from a faculty-centered advising model to a centralized advising model, where each student now has one assigned professional advisor. The intent behind this change was to increase a student’s connection to the college, which may increase student persistence and retention. MTC has also recently implemented a college-wide
model for student success developed by the American Association for Community Colleges (AACC) called Guided Pathways, which has become quite popular nationwide (Bailey, Jaggars, & Jenkins, 2015; Jenkins & Cho, 2013; Jenkins, Lahr, & Fink, 2017; Jenkins et al., 2018). The focus of Guided Pathways is to create prescripted sequences of courses depending on their desired career that gives students a clear path towards graduation. I would like to see how these student factors and new college initiatives impact online student success and propose this to be a future research topic at MTC.

**Analysis of student success by demographics.** Research indicates that online courses exacerbate pre-existing performance and achievement gaps based on a variety of demographic factors (Jaggars et al., 2013; Xu & Jaggars, 2014). A study by Conway, Wladis, and Hachey (2015) indicates that minorities are likely to have lower success rates and higher withdrawal rates in online courses than White students. This equity gap is strongly felt at two-year colleges in particular because they serve a high percentage of minority and low-income students. While this study looked more globally at first-time online students who completed the Virtual Backpack course, it would be helpful if a future study took a special focus on the impact of the Virtual Backpack course or a similar intervention on various groups based on their demographics, such as race, age, gender, or socioeconomic level.

**Limitations**

This research study, as with most studies, had limitations that existed. This section discusses these limitations, which are organized into the following areas: (a) study design, (b) study population, (c) study setting, and (d) the researcher.
Study Design

As is common with action research, the design of this study will have limited generalizability to other higher educational institutions. Every local context is different and MTC has unique characteristics that may make it difficult to assume the findings of this study would be the same at another institution. In addition, the definition of success may differ by institution. During this study, I defined success as the rate of students earning a C or better in online courses but other studies may elect to define success differently, which may lead to different outcomes.

Another potential limitation of this study was the design of the interview questions. When I was developing the interview protocols, my original thought was to get both a macro- and micro-level view of online student success, and then situate the impact of the Virtual Backpack course within that framework. For example, I asked questions about skills that students and faculty thought were important for student success without reference to the Virtual Backpack course, students’ perceptions about their instructors, and technical problems students had while completing the Virtual Backpack course. These questions yielded codes that had to be excluded due to no alignment with any of my three research questions. These macro-level questions may have been unnecessary and detracted from the focus on the Virtual Backpack course.

Study Population

A limitation of this study with respect to its participants is that this study only focused on first-time online students. This restriction was necessary because when the Virtual Backpack course was first implemented, any student who had already
successfully completed an online course in the past was exempted from the requirement to complete the Virtual Backpack course. I could not study the impact of the Virtual Backpack if some of my participants had not taken the Virtual Backpack. However, this unfortunately excluded thousands of potential data points. As time goes on, those students who were grandfathered out of needing to complete the Virtual Backpack will graduate or move on from MTC, so it would be helpful to recreate this study in a few years looking at the entire population of online learners. By that time all or almost all online students at MTC will have successfully completed the Virtual Backpack.

Another study population limitation related to only focusing on asynchronous online courses. Currently, MTC only requires students taking asynchronous online courses to successfully complete the Virtual Backpack. During the design phase of the study, this factor was irrelevant since MTC had a negligible number of synchronous online courses. However, due to COVID-19, MTC now has thousands of students participating in synchronous online courses. Many of these students experience the same academic challenges as asynchronous online students and may benefit from participating in the Virtual Backpack. Since the number of synchronous online courses at MTC was negligible until the data collection phase of this study, this limitation was not evident until recently.

Lastly, all survey and interview participants were voluntary, which poses a limitation on the results. The surveys were sent to hundreds of students and faculty who fit the desired criteria, and invitees self-selected whether to participate or not, which may have impacted the study results. For example, Virtual Backpack completers who withdrew or failed their online courses may have been less likely to respond to the
survey, meaning this study would not have captured this population’s perceptions of the Virtual Backpack. Similarly, invitations for interview participants were sent to all survey completers and the first ten student and faculty respondents became the group of interview participants. This first-come-first-serve method of identifying participants may have overpopulated the participants with the more proactive, energetic, and engaging students and faculty.

Study Setting

Two limitations existed with respect to the study setting. The first limitation relates to the impact of COVID-19, and the second limitation relates to other student success initiatives present during the implementation of the Virtual Backpack.

Impact of COVID-19. One of the most substantial limitations of this study was the impact felt by the COVID-19 pandemic. The brunt of the effects felt by COVID-19 hit precisely as I was collecting data for this study. As previously mentioned, this study was only designed to look at the impact of the Virtual Backpack on asynchronous online courses. Originally this was no issue, due to the fact that MTC was only piloting five or fewer synchronous online courses pre-COVID. However, when MTC had to adjust course abruptly due to COVID-19, hundreds of faculty had to immediately flip their courses either asynchronously or synchronously online. This impact was most evident during the student and faculty interviews. Repeatedly both student and faculty interview participants kept referencing Zoom, or other aspects of synchronous instruction that made me realize they were not talking about asynchronous online courses. I continually had to refocus their attention to asynchronous online courses.
The abrupt change also forced me to alter how the student and faculty interviews were conducted. Originally, I had planned to meet with all interview participants one-on-one in my office at MTC. At the time the interviews were scheduled in March 2020, MTC closed its physical campuses due to COVID-19. This change forced me to conduct the interviews via the Zoom web conferencing platform. While all interviews were conducted successfully, meeting together in-person may have helped the interviews feel a little more natural. For example, I would have been able to better see and react to participants’ body language.

**Other student success initiatives.** Another limitation of this study with respect to the study setting relates to other student success initiatives that were going on at the time the Virtual Backpack was implemented. The QEP, which included the Virtual Backpack as its primary intervention, also included two other smaller interventions that may have had an impact on online student success. One of these interventions was targeted online faculty development in six specific online courses, via an Online Faculty Learning Community (OFLC). The impact of the OFLC was likely minimal related to the Virtual Backpack, as it was only implemented in a small percentage of the online courses offered at MTC. These courses also enrolled a mix of students who did and did not complete the Virtual Backpack. The last QEP intervention related to expanding online student services at MTC, such as online tutoring and advising. It is unclear how these new services impacted online student success.

In addition to the QEP, MTC also had college-wide initiatives that may have impacted student success across all modes of instruction. For example, MTC recently transitioned to an Advising Center model with professional advisors, instead of a faculty-
led advising model. The goal was to improve student retention by providing them a consistent advisor students work with throughout their time at MTC. MTC also was in the early stages of implementing an initiative called Guided Pathways, which was developed by the American Association of Community Colleges (AACC). Guided Pathways is designed to enhance the student experience and lead to clearer and easier to follow paths towards graduation (Bailey et al., 2015; Jenkins et al., 2017, 2018). Any or all of these new interventions potentially could have impacted online student success during the Spring 2020 semester. However, this is unlikely as many of the interventions mentioned were either applied to a negligible portion of the student population, or were implemented college-wide and would have positively impacted all students. However, as noted in Figure 4.16, on-ground student success rates actually went down in Spring 2020, even though the online success rates went up.

**The Researcher**

A limitation of this study also relates to the researcher. Due to my position as Associate Vice Provost, I oversee most of the academic departments at MTC. The faculty members I surveyed teach within these departments, which means that a power balance existed within this study. While I have a positive relationship with all of the faculty surveyed during this study, it is possible that some interview participants may have been apprehensive about making negative remarks about the Virtual Backpack or online learning in general. Also, while most students likely did not fully understand my exact position within the administrative structure at MTC, all student participants did understand that I was an administrator at MTC and may have felt apprehensive about making negative remarks about the Virtual Backpack.
Another challenge I faced during this study was that I was both the researcher as well as the developer and implementer of the Virtual Backpack. It would have been easier to objectively study the Virtual Backpack if I was not so intimately involved in its creation and deployment. This dynamic may have also created unconscious researcher biases that impacted the results of the study.

**Closing Thoughts**

Mertler (2017) states that reflection is a critical aspect of action research. The motivating factor for this study was the observation that the success rate for students who take on-campus courses at MTC were higher than the success rates for students who take asynchronous online classes. This observation came at a time when online enrollments were increasing every semester. It was my desire to find a way for online students to be just as successful as students taking on-campus courses. The importance of this mission just became infinitely more significant due to the impact of COVID-19, now that the vast majority of our students take their courses online.

The manner in which I attempted to most quickly and efficiently impact online student success was through the implementation of an online readiness course. Berge (2001) states that the goal of an online readiness course is to “ensure that learners acquire appropriate study and learning skills and understand their rights and responsibilities in a distance learning course” (pp. 20-21). Glazer and Murphy (2015) indicate that, when done well, readiness courses “[increase] students’ probability of success and [provide them] with many of the skills necessary to persist” (p. 142).

Reflecting back on this study, I am so proud of the faculty, staff, and students who played a part in the development of the Virtual Backpack. Based on the findings of this
study, their efforts were not in vain. Evidence from this study suggests that the Virtual Backpack does, in fact, equip students to be more successful in the online environment. However, study results also revealed places for improvement. I am excited and anxious to take these findings back to MTC, debrief them with my colleagues, make adjustments to the Virtual Backpack, and assess the effectiveness of the revised version of the Virtual Backpack. Also, while this action research is not guaranteed to provide the same results at other institutions, I look forward to sharing my findings with my colleagues at MTC’s 15 sister colleges within the South Carolina Technical System. If each of these institutions have results similar to MTC, many more students across South Carolina will achieve their educational goals allowing them to improve the lives of them and their families, which would bring me great joy.
REFERENCES


Koehnke, P. J. (2013). *The impact of an online orientation to improve community college student retention in online courses: An action research study*. Available from ERIC. (1697500125; ED554723).


Nichols, M. (2010). Student perceptions of support services and the influence of targeted interventions on retention in distance education. *Distance Education, 31*(1), 93–113. https://doi.org/10.1080/015879111003725048


https://doi.org/10.1023/B:TRUC.0000021808.72598.4d


Dear ____,

My name is Devin Henson. I am a doctoral candidate in the Educational Technology Program at the University of South Carolina, as well as the Associate Vice Provost at Midlands Technical College. I am conducting a research study as part of the requirements of my degree in Curriculum and Instruction at USC, and I would like to invite you to participate.

I am studying the impact of a readiness course called the Virtual Backpack that you took last semester, which is designed to prepare students for online classes. The results of the survey will provide information about how we can improve online learning at MTC. Please keep in mind that this survey is confidential and only takes five minutes to complete. By completing the survey, you will be eligible to enter into a drawing for a $50 Amazon gift card (odds of winning are approximately 300:1). Thank you for your participation!

*For the purposes of this survey, "online" refers only to fully online courses. Do not consider hybrid or virtual courses you have taken.

**CONSENT**

I allow my responses to this survey to be used for a study involving the impact of a readiness course on online student success. Please note that your participation, non-participation or withdrawal will not affect your grades in any way. *Yes / No*

**DEMOGRAPHICS**

1. Select your age range: (Dropdown Menu) *Under 19 / 20-24 / 25-29 / 30-39 / 40-49 / 50+*
2. Enter your current major(s): (Fill in the blank)

___________________________________

3. Select your current GPA range: 3.50-4.00 / 3.00-3.49 / 2.50-2.99 / 2.00-2.49 / Under 2.00 / No GPA (new student)

4. Rate your own computer proficiency (1=lowest skill, 5=highest skill)

5. Do you own a computer? Yes / No

6. Is this semester the first time you have taken an online course at MTC? Yes / No

7. Select your enrollment status for Spring 2020 semester: Full-time (12 credit hours or more) / Part-time (11 credit hours or less)

8. Prior to this semester, did you complete the Virtual Backpack online readiness course offered by MTC? [Yes/No]

9. How long did you spend completing the Virtual Backpack? [Less than 30 mins / Less than 1 hour / Less than 2 hours / More than 2 hours / I did not take the Virtual Backpack course]

IMPACT OF THE VIRTUAL BACKPACK COURSE

10. Please indicate what extent you feel the Virtual Backpack helped prepare you for online classes. *If you did not complete the Virtual Backpack, please move on to the next section. [Likert: Not helpful to Extremely helpful, or N/A]

11. To what extent do you feel the Virtual Backpack helped your understanding of how to utilize tools in D2L? [Likert: Not helpful to Extremely helpful, or N/A]

12. To what extent do you feel the Virtual Backpack helped your time management skills? [Likert: Not helpful to Extremely helpful, or N/A]

13. To what extent do you feel the Virtual Backpack helped your ability to communicate effectively online? [Likert: Not helpful to Extremely helpful, or N/A]

14. To what extent do you feel the Virtual Backpack enhanced your knowledge of how online courses are structured at MTC? [Likert: Not helpful to Extremely helpful, or N/A]

15. To what extent do you feel the Virtual Backpack enhanced your knowledge of how to use instructor feedback for improvement? [Likert: Not helpful to Extremely helpful, or N/A]
**OPEN ENDED QUESTION**

16. Is there any other feedback you would like to provide about the Virtual Backpack course? Both positive feedback and feedback for improvement are appreciated. *Open ended*

If you would like to be entered to win a $50 Amazon gift card, please enter your email address below. All responses are confidential and contact information will only be used to contact the winner. Please click Submit when finished!
APPENDIX B: STUDENT INTERVIEW

STUDENT INTERVIEW QUESTIONS

Consent obtained in separate form (Appendix C)

Introduction: Hello. My name is Devin Henson. I am the Associate Vice Provost here at MTC. As a student who has taken an online course this semester, we value your opinion and experiences about online courses. This interview will be casual. I may ask follow-up questions on a topic for further clarification. If you do not want to answer a particular question, just let me know and we will skip it. This interview will be confidential and your name will not be attached to your comments.

The interview will be recorded so that I can accurately transcribe what is discussed. The tapes will only be reviewed by members of the research team and will destroyed upon completion of the study. The interview should take approximately 30 minutes. Please note that your participation, non-participation or withdrawal at any point will not affect your grades in any way. Before starting our interview, do you have any questions?

Student-Focused Questions

• What do you think about the quality of online courses at MTC? (general)
• What were the biggest challenges you encountered when you first took an online course? (lack of knowledge/skill)
• Overall, how do you feel about the faculty’s performance in online courses? (feeling)
• Did any of your online instructors do anything in particular that helped you succeed? (feeling)
• Was there anything in particular you saw in your online courses this semester that could have been improved? (feedback)
What are the skills you think you need to complete an online course successfully? (lack of knowledge/skill)

Which of these skills do you feel you have, and which do you feel you are still developing? (lack of knowledge/skill)

Impact of the Virtual Backpack Course

Last semester MTC launched a Virtual Backpack course that introduced topics such as an introduction to D2L, time management skills, how online classes work, attendance in online classes, and how to use feedback from your instructor. Do you recall taking the Virtual Backpack course prior to registering for this semester? [If yes, continue with the following questions. If no, proceed to the next section.]

Approximately how long did it take you to complete the Virtual Backpack?
Do you think that is a reasonable length of time for that type of course to take?
Do you feel the Virtual Backpack better prepared you to take your first online course? Why or why not?
What were some of the features of that course that you perceived to be helpful in preparing you to learn in the online environment?
What information was missing from the course that would have helped better prepare you or other students for your first online course?

Logistics and Support

Did you experience any difficulty finding or completing the readiness course online? If so, please explain.
How can MTC support you when taking an online course in the future?

Conclusion: Thank you for participating in our interview. Your input is very important to us. If you have any further comments, opinions, or thoughts, please let us know. Thank you again.
Dear ___,

My name is Devin Henson. I am a doctoral candidate in the Educational Technology Program at the University of South Carolina. I am conducting a research study as part of the requirements of my degree in Curriculum and Instruction, and I would like to invite you to participate. I am studying the impact of a readiness course called the Virtual Backpack that you took last semester, which is designed to prepare students for online classes. If you decide to participate, you will be asked to virtually meet with me for an interview about your online course experiences and experience with the Virtual Backpack course.

If you do not want to answer a question, just let me know and we will skip it. The meeting will take place virtually using Zoom, and should last about 30 minutes. To participate you will need a computer, smartphone, or tablet that can connect to the internet. The interview will be audio recorded so that I can accurately transcribe what is discussed. The tapes will only be reviewed by members of the research team and destroyed upon completion of the study. Please note that your participation, non-participation or withdrawal at any point will not affect your grades in any way. Participation is confidential. Study information will be kept in a secure location at the University of South Carolina. The results of the study may be published or presented at professional meetings, but your identity will not be revealed. You will receive a $10 Starbucks gift card for participating in the study.

We will be happy to answer any questions you have about the study. You may contact me at 803-822-6711 or hensonjd@email.sc.edu, or my faculty advisor, Dr. Hengtao Tang at htang@mailbox.sc.edu.

Thank you for your consideration. If you would like to participate, please contact me at the email or number listed below to discuss participating.

With kind regards,

Devin Henson
Office: 803-822-6711
Cell: 803-920-5599
hensonjd@email.sc.edu
Dear ____,

My name is Devin Henson. I am a doctoral candidate in the Educational Technology Program at the University of South Carolina, as well as the Associate Vice Provost at Midlands Technical College. I am conducting a research study as part of the requirements of my degree in Curriculum and Instruction at USC, and I would like to invite you to participate.

I am studying the impact of a readiness course called the Virtual Backpack that your online students took last semester, which is designed to prepare students for online classes. The results of the survey will provide insights about how we can improve online learning at MTC. Please keep in mind that this survey is confidential and only takes five minutes to complete. By completing the survey, you will be eligible to enter into a drawing for a $50 Amazon gift card (odds of winning are approximately 150:1). Thank you for your participation!

*For the purposes of this survey, "online" refers only to fully online courses. Do not consider hybrid or virtual courses you teach.

CONSENT
I allow my responses to this survey to be used for a study involving the impact of a readiness course on online student success. Please note that your participation, non-participation or withdrawal will not affect your employment in any way. Yes / No

PART 1: DEMOGRAPHICS
1. Select your age range: (Dropdown Menu) 20-29 / 30-39 / 40-49 / 50-59 / 60+
2. Academic Department: (Dropdown Menu)
3. On average, how many online or hybrid courses do you teach each semester? Less than 1 (meaning only occasionally) / 1 / 2 / 3 / 4 / 5+
4. How many years have you taught online at MTC? 0-2 / 3-5 / 6-10 / 11-15 / 15+
5. Have you taught an online course prior to this semester? Yes / No
6. Have you ever taken a college course online? [Yes / No]
7. Employment Status: Full-time faculty / Adjunct faculty
8. Please state the reason(s) you teach online (Select all that apply):
   - Mandatory per my department/program
   - Provides time and place flexibility
   - Only available section(s) to teach are online
   - Interested in teaching using different technologies
   - Personal passion
9. Have you reviewed the Virtual Backpack course in D2L? Yes / No

PART 2: IMPACT OF THE VIRTUAL BACKPACK COURSE

10. Please read the following statement carefully and indicate to what extent you agree or disagree with the statement: “I believe student readiness (technical skills, time management, realistic expectations, etc.) is a major contributing factor for students being successful in the online environment.” [Likert: S. Disagree to S. Agree, or N/A]
11. Rate your level of agreement with the statement that “my online students were better prepared for online learning in Spring 2020 (having taken the Virtual Backpack) compared to Spring 2019 (prior to the Virtual Backpack).” [Likert: Strongly Disagree to Strongly Agree]
12. Indicate the extent that you feel taking the Virtual Backpack course enhanced your students’ level of readiness in the following specific areas. *If you are not familiar with the curriculum within the Virtual Backpack, proceed to the next section. [Likert: No positive impact to Greatly enhanced, or N/A]
   - Your students’ ability to communicate effectively online.
   - Your students’ understanding of how to utilize tools in D2L.
   - Your students’ time management skills.
   - Your students’ knowledge of how online courses are structured at MTC.
• Your students’ knowledge of how to use instructor feedback for improvement.
• Your students’ use of available college resources (tutoring, Disability Services, etc.).

PART 3: OPEN ENDED QUESTION
13. What factors (other than student readiness) do you believe contribute to a student’s ability to be successful in an online course? [Open ended]

At the conclusion of the survey, you have the ability to enter your name and contact information for a $50 Amazon gift card raffle. All responses are confidential and contact information will only be used to contact the winner.
APPENDIX E: FACULTY INTERVIEW CONSENT FORM

Dear ___,

My name is Devin Henson. I am a doctoral candidate in the Educational Technology Program at the University of South Carolina. I am conducting a research study as part of the requirements of my degree in Curriculum and Instruction, and I would like to invite you to participate. I am studying the impact of a readiness course called the Virtual Backpack that you took last semester, which is designed to prepare students for online classes. If you decide to participate, you will be asked to meet with me for an interview about your online course experiences and experience with the Virtual Backpack course.

If you do not want to answer a question, just let me know and we will skip it. The meeting will take place virtually using Zoom and should last about 30 minutes. To participate you will need a computer, smartphone, or tablet that can connect to the internet. The interview will be audio recorded so that I can accurately transcribe what is discussed. The tapes will only be reviewed by members of the research team and destroyed upon completion of the study. Please note that your participation, non-participation or withdrawal at any point will not affect your employment in any way. Participation is confidential. Study information will be kept in a secure location at the University of South Carolina. The results of the study may be published or presented at professional meetings, but your identity will not be revealed. You will receive a $10 Starbucks gift card for participating in the study.

We will be happy to answer any questions you have about the study. You may contact me at 803-822-6711 or hensonjd@email.sc.edu, or my faculty advisor, Dr. Hengtao Tang at htang@mailbox.sc.edu.

Thank you for your consideration. If you would like to participate, please contact me at the email or number listed below to discuss participating.

With kind regards,

Devin Henson
803-822-6711
hensonjd@email.sc.edu
APPENDIX F: FACULTY INTERVIEW

FACULTY INTERVIEW QUESTION

Consent obtained in separate form (Appendix E)

Introduction: Hello. My name is Devin Henson. As you know, the Virtual Backpack course is a critical component to our college’s Quality Enhancement Plan. I am researching the ability of the Virtual Backpack course to prepare students for the online environment. As an instructor who teaches online, we value your opinion and observation of students’ performances in online courses. This interview will be casual. I may ask follow-up questions on a topic for further clarification. If you do not want to answer a question, just let me know and we will skip it. This interview will be confidential and your name will not be associated with your comments.

The interview will be recorded so that I can accurately transcribe what is discussed. The tapes will only be reviewed by members of the research team and will destroyed upon completion of the study. The interview should take approximately 30 minutes. Please note that your participation, non-participation or withdrawal at any point will not affect your employment in any way. Before starting our interview, do you have any questions?

Faculty-focused Questions

- Describe your perception of the state of online learning at MTC – such as the overall quality of courses, students’ readiness to take online classes, faculty readiness to teach online classes (feelings)
- What were the biggest challenges you encountered as a first-time online instructor? (lack of skill/knowledge)
- Why do you think students withdraw from online courses? (feelings)
Student-focused Questions

• Overall, how do you feel about students’ performance in online courses? Are you satisfied with students’ performance in online courses?
• What are the common problems that a student may have when he/she is taking an online course for the first time?
• What are the skills you expect from an online student when taking an online course?
• What do you do if you find that a particular student does not have these skills?

Impact of the Virtual Backpack

• Have you logged in to the Virtual Backpack course and reviewed its content? If so, what are some of your overall impressions of the course?
• The students in your online courses this semester were required to complete the Virtual Backpack course prior to registering, unless they had already successfully completed an online course with a C or better. What were the differences, if any, that you noticed in your students’ level of readiness compared to previous semesters?
• How has the amount of questions from students about issues not related to their course subject matter, such as where to log into D2L Brightspace or how to submit an assignment, changed since the inception of the readiness course?
• What information could be added to the Virtual Backpack course that would better prepare students for online courses?

Conclusion: Thank you for participating in our interview. Your input is really important to us. If you have any further comments, opinions, or thoughts, please let us know. Thank you again.
APPENDIX G: IRB APPROVAL FROM MIDLANDS TECHNICAL COLLEGE

To: Devin Henson
From: Barrie Kirk, Provost
Subject: IRB approval for Measuring the Impact of the Virtual Backpack
Date: February 12, 2020

As you know, Midlands Technical College does not have a formal Institutional Review Board. However, Dr. Ron Rhames, President of Midlands Technical College and I have reviewed your proposal and approve the protocol that you referenced in your request beginning Spring, 2020. We understand that the data collection includes student grades, student surveys, student interviews, faculty surveys, and faculty interviews. We also understand that all identifiable information for students and faculty will be kept confidential. Please report any necessary changes to the requested protocol to my office.

Your research is of special interest to our college and our students and we look forward to your analysis. Good luck!

Sincerely,

Barrie Kirk, Ed.D.
Provost
Midlands Technical College
INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH
APPROVAL LETTER for EXEMPT REVIEW

James Henson
Re: Pro00098924

Dear James Henson:

This is to certify that the research study *Measuring the Ability of a Readiness Course to Improve Online Student Success at a Two-Year Technical College* was reviewed in accordance with 45 CFR 46.104(d)(1), the study received an exemption from Human Research Subject Regulations on *4/10/2020*. No further action or Institutional Review Board (IRB) oversight is required, as long as the study remains the same. However, the Principal Investigator must inform the Office of Research Compliance of any changes in procedures involving human subjects. Changes to the current research study could result in a reclassification of the study and further review by the IRB.

Because this study was determined to be exempt from further IRB oversight, consent document(s), if applicable, are not stamped with an expiration date.

All research related records are to be retained for at least three (3) years after termination of the study.
The Office of Research Compliance is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). If you have questions, contact Lisa Johnson at lisaj@mailbox.sc.edu or (803) 777-6670.

Sincerely,

Lisa M. Johnson
ORC Assistant Director and IRB Manager