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Online Nontraditional Students' Attitudes about Software Used by Academic Advisors

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Walden University

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Monica Triplett

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Walden University
2021

Abstract

Online Nontraditional Students' Attitudes about Software Used by Academic Advisors

by

Monica Triplett

EdM, Harvard University- Graduate School of Education

BA, Wesleyan University

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Educational Technology

Walden University

August 2021

Abstract

While many universities rely on student success software to facilitate the academic advising process, little is known about how nontraditional students view technology-mediated advising and its usefulness for preventing attrition with this population. The purpose of this study was to explore how nontraditional undergraduates who may lack facility with technology view software as a tool to engage with their advisors and provide support for their academic decisions. Moore's theory of transactional distance and Astin's theory of engagement served as frameworks. Using a basic qualitative method, 14 students over the age of 40 years who were enrolled in various online undergraduate programs participated in semi-structured interviews. Data were open coded and analyzed thematically. The results indicated advising software is viewed favorably. However, five students, almost a third of the group, reported having beginner-level technical skills resulting in some challenges with navigating their school's advising platform. Students valued timely communication with an advisor and convenient formats for doing so, which were facilitated by the advising platform. Findings contribute to positive social change by illustrating how advisors can more effectively use the software to engage students and enhance communication with them, therefore supporting persistence in coursework.

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Dedication

First and foremost, this dissertation is dedicated to my husband, Mr. Robert M. Taylor, Jr., for his unwavering love and support during my doctoral journey.

I also would like to dedicate this work to the memory of my parents, Mr. Howell Jackson Triplett and Mrs. Bernadette Hague Triplett, both educators. They emphasized the importance of education and promoted the legacy of those who came before me and achieved against incredible odds. Most notably, my grandfather, Dr. Horace Frank Hague, and my great, great grandmother, “Mother” Mary Hinton, a former slave who taught herself to read and write.

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Chapter 1: Introduction to the Study

Nontraditional students are a fast-growing segment of the college population. Traditional students in baccalaureate colleges are 18 to 24 years of age, while nontraditional students are those over 24 (Abdrahim, 2020; Auguste et al., 2018; Ellis, 2019). In 2017, the National Center for Education Statistics (Hussar & Bailey, 2017) projected that between 2014 and 2025, there will be a 13% increase in college students under 25 years of age, a 16% increase for students 25 to 34, and a 20% increase in college students 35 years or older. However, nontraditional students have lower retention and graduation rates in comparison to traditionally aged students. Data from the National Center for Educational Statistics (NCES, 2017) showed that students who began 4-year colleges for the first time at age 30 or older had a persistence rate that was 28% lower than those who started college for the first time at age 19 or younger.

Academic advisors have an important role in student success and retention (Schroeder et al., 2016). To support and enhance the student/advisor relationship, some universities use specific technology to provide services to their students. Technology has proven to be an effective tool to facilitate student involvement with advisors (Argüello & Méndez, 2019). However, research has shown generational differences in students' skills and learning styles with technology (Corbin, 2017; Darney & Larwin, 2018). Despite these differences, there has been little examination of online nontraditional students' assessment of the software used in the online advising environment. Therefore, this study examined the perceptions of online learners about technology-mediated advising. To

understand the context of this study, it is necessary to consider the role of technology-mediated advising.

Time and budget constraints have contributed to the adoption of advising software (Kalamkarian & Karp, 2017) to facilitate academic advisors' communication with students. Because of a high ratio of students to advisors, it has been a challenge for some institutions to provide comprehensive academic support. Thus, through technology, advisors can contact large numbers of students and disseminate information in a timely manner. To support advisors who work with growing numbers of online students, in 2010 the National Academic Advising Association (NACADA) established standards for advising this population.

Through an initiative sponsored by the Bill and Melinda Gates Foundation, some schools have been the recipient of funds to restructure their academic advising programs using software to enhance their services (Fletcher et al., 2016). This initiative is known as Integrated Planning and Advising for Student Success or IPASS. Technology-mediated advising refers to the software used by academic advisors to assist students. While more than 120 companies (Kalamkarian et al., 2018) offer a variation of advising software, there are four main types: software that can monitor degree progress, software that generates reminders for important tasks, software that provides an alert for students in need of assistance, and software that generates predictive analytics regarding student performance (Velasco et al., 2020). Thus, this type of software supports the activities of both students and advisors.

Chapter 1 of this study begins with the background of the use of technology in academic advising, followed by the research questions and theoretical framework upon which the study was based. Next are the assumptions, scope, and limitations of the study. Finally, the conclusion of this chapter explains how this research has the potential to enhance technology-mediated advising practices and support class completion by nontraditional students.

Background

Technology has been an integral part of college student life since the mid-1990s, but researchers and organizations are still exploring ways to use it effectively (Brooks & Pomerantz, 2017; Klempin & Karp, 2018). Research examining advising software in higher education has mostly focused on its use as a communication tool with students (Junco et al., 2016; Williams & Whiting, 2016). In general, students' attitudes toward the use of advising software have been positive (Burns et al., 2019; Gambino, 2017; Kalamkarian & Karp, 2017; Williams & Whiting, 2016). However, the nontraditional undergraduate online student population has not been a focus of most advising studies. Advising software is an important tool because it can be used to facilitate course selection, monitor academic progress, or remind students about important tasks. However, Safford and Stinton (2016) and Darney and Larwin (2018) found that nontraditional students were less proficient with using technology than traditional students. Therefore, it is important to understand how nontraditional students describe the efficacy of this software. However, there is little research exploring this topic.

There are important differences between a class offered in a face-to-face setting and one offered online. In addition to requiring technical skills, online classes require students to have discipline and self-direction (McClendon et al., 2017). Successful online students need to be prepared to use technology. Rotar (2017) and Torun (2020), noted the importance of e-readiness, which is a student's preparation and competence to learn in a web-based environment. E-readiness can affect the outcomes of a web-based or e-learning environment.

The history of college-level advising reflects changes in the role advisors play in a student's experience. In the United States in 1636, the President of Harvard College began the initial effort to provide academic advising, and in 1841, Kenyon College formally paired each student with a faculty advisor (Cook, 2009). However, it was not until the 1930s that student personnel were associated with academic advising (Aiken-Wisniewski et al., 2015). There are various approaches to academic advising, but two main approaches emerged in the early 1970s: prescriptive (O'Banion, 2009) and developmental (Crookston, 1972, 2009). With prescriptive advising, a straightforward approach helps the student with matters such as course selection, registration, and administrative matters (Harris, 2018). With developmental advising, there is more of an emphasis on building a relationship between the student and advisor. While contact with the student can address administrative issues, developmental advising can also pertain to other aspects of a student's life, such as career advice and social matters. Another advising approach is a proactive or intrusive style (Donaldson et al., 2016) in which students may be required to participate in advising activities. Regardless of the advising

approach, what is unknown is how nontraditional students describe the efficacy of technology-mediated advising.

Nontraditional students are different from traditional students in several ways, although age is typically used to identify nontraditional students (Abdrahim, 2020), and these characteristics may relate to their persistence or attrition. Due to variations in the criteria used to determine attrition rates across populations, some research shows that nontraditional students have a lower attrition rate than traditional students (James et al., 2016; Nadasen & List, 2016), while other studies show that it is higher (Bohl et al., 2017; Rotar, 2017). This disparity in results warrants further research about factors that may reduce nontraditional student attrition.

Problem Statement

Research findings about technology-mediated advising (Junco et al., 2016; Williams & Whiting, 2016) indicate that students tend to find it useful, but these studies do not highlight the nontraditional student population. Because effective academic advising can influence completion rates, understanding the perceptions of those who receive it is critical. Therefore, it is important for academic advisors to understand practices and strategies that can support student success. Current research shows that technology-mediated advising can be effective with traditional students, who are digital natives (Ma et al., 2018). The problem is that little is known about the perceptions of nontraditional students toward technology-mediated advising, and given their higher attrition rate, its effectiveness with nontraditional students is unclear.

Many nontraditional students work and have families, so online classes are appealing because they offer more scheduling flexibility than a face-to-face format to accommodate their busy schedules (Bourdeaux & Schoenack, 2016). However, De Paepe et al. (2018) noted that it is important for educators and administrators to understand the nontraditional students' expectations and satisfaction with the learning environment to design and deliver effective programs. Therefore, the focus of this study was online nontraditional students. Given the lower retention rates and graduation rates of nontraditional students compared to traditional students (Grabowski et al., 2016), there is a gap in understanding the perceptions of nontraditional students toward technology-mediated advising, which is problematic. Without understanding their perceptions, nontraditional students' completion and graduation rates may continue to lag behind those of traditional students.

The attrition rate of nontraditional students is a concern for several reasons. Preventing attrition is important to students who have invested time and effort to pursue their education (Shaw et al., 2016). Increasing graduation rates has an effect on not only the individual student and institution but also on society. Statistics for 2016 show that 86% of adults aged 25 to 64 who earned a bachelor's degree or higher participated in the labor force, while only 72% of high school graduates did so (Snyder et al., 2019). For those who did not complete high school, the participation rate dropped to 60% (Snyder et al., 2019). Between 1995 and 2015, the unemployment rate for people who had earned a bachelor's degree was about half that of those who had only completed high school (Ma et al., 2016). Thus, supporting degree completion can increase employment opportunities

contributing to the success of the student and those for whom they work. The goal of this study was to explore technology-mediated advising as it pertains to nontraditional students because they are a growing segment of the college student population (Hussar & Bailey, 2017), and academic advising supports degree completion (Bohl et al., 2017; Mu & Fosnacht, 2016; Vianden, 2016).

Purpose of the Study

The purpose of this basic qualitative inquiry was to understand how online nontraditional students studying in undergraduate programs described advising software, also known as student success software, as a tool to facilitate communication and engagement with advisors and support their academic decisions. Advising software supports the activities of both students and advisors. The value of this study is that it provides insight into nontraditional students' perceptions about advising software and the advising process, with the goal of identifying strategies for academic advisors by which they could better engage and serve nontraditional students while increasing retention rates. Although nontraditional students are defined as those over 24 years of age, this study focused on students ages 40 and over because the internet was not available to the public during their childhood, and research has shown that there are generational differences in facility with technology (Darney & Larwin, 2018; Hampton & Pearce, 2016). Also, although there are four categories of advising software, one type, predictive analytics, is not addressed in this study because it is used internally by advising departments; typically, students would be unaware of its use.

Research Questions

RQ1: How do nontraditional online undergraduate students over 40 describe their use of advising software as a tool to facilitate engagement and communication with academic advisors?

RQ2: How do nontraditional online undergraduate students over 40 describe the usefulness of advising software in supporting their academic decisions?

Conceptual Framework

Two theories served as the conceptual framework for this study: transactional distance (Moore, 1993) and engagement, also referred to as involvement theory (Astin, 1999). Moore's theory examines four variables that impact learning via distance education: the physical separation of teacher and students, the medium for communication, the program structure, and learner autonomy. While Moore's focus was on the relationship between teachers and students, his theory is germane to this study because advising software is a communication medium, advising communication delivers information about program structure, and the system provides a degree of autonomy for the learner. These conditions help to diminish transactional distance (Moore, 1993), which is essential for course completion and institutional involvement.

Astin (1999) put forth that his theory of involvement is applicable to both college administrators and researchers to investigate student development. His theory identifies five key points, which include consideration of the psychological and physical energy students devote to their academic experience and that those students vary in their involvement. Astin further noted that the effectiveness of an educational program is

related to the ability of that program to increase student involvement. Because involvement is a variable in student persistence (Bergman et al., 2014), my research was focused on the extent to which online students feel advising software supports their course completion through interactions such as reminders, course planning, and contact with advisors. I elaborate on both Astin's and Moore's (1993) theories further in Chapter 2.

Nature of the Study

This study followed a basic qualitative interview approach. A qualitative interview research method was appropriate for this study because it focused on how students perceived their contact with advisors via student success software and promoted their engagement with coursework, facilitating academic decisions. Only an open-ended exploration can reveal the varied perceptions of nontraditional students about whom there is little research.

Within the qualitative approach, there are a variety of research methods that could have been used in this study. Kahlke (2014) identified the most frequently used qualitative methods: phenomenology, ethnography, and grounded theory. Another method, basic qualitative, also called interpretive or generic qualitative (Kahlke, 2014), does not adhere to a specific philosophic assumption of a qualitative methodology (Caelli et al., 2003). Rather, a basic qualitative approach seeks to understand and discover the perspective and worldview of those involved in a situation or experience (Merriam, 1998; Merriam & Tisdell, 2016). The purpose of basic qualitative research was consistent with the goal of this research study, to examine online students' perceptions of the

effectiveness of advising platforms, and, therefore, I used this approach to gather and analyze the data.

Specifically, for this research I used a qualitative interview method. Researchers can design qualitative interviews in three ways: structured, semistructured, or open-ended (Freebody, 2003). Structured interviews use a predetermined set of questions and endeavor to keep data collection focused. Open-ended interviews pose general questions and allow study participants to direct the interview. In between these approaches is the semistructured interview, which presents a predetermined set of questions and includes follow-up ad hoc questions germane to the study participants. The semistructured format offers the best features of both the structured and open-ended formats. Therefore, it was the method used for this study.

Individuals may have different perspectives about the same experience, and in this study, nontraditional students shared their beliefs about technology-mediated advising. Accordingly, I interviewed a group of 14 nontraditional online undergraduate students for this study. Francis et al. (2010) noted that the sample size is, in part, contingent upon the complexity of the research questions asked. They recommended 10 as the minimum number of interviews for an initial analysis sampling and to reach a saturation point, which is when additional interviewees provide little new information (Check & Schutt, 2012). Guest et al. (2006) also noted that researchers must consider factors such as the homogeneity of the participant pool and the complexity of the research questions in determining a research size.

I collected data through synchronous interviews in which I asked study participants predetermined, open-ended questions designed to focus on their perception of the usefulness of technology-mediated advising and their sense of engagement with their curriculum. I recruited participants from Walden's participant pool and through social media sites. Therefore, as anticipated, interviewees came from a wide geographic area; face-to-face interviews were not feasible. Because comfort with technology is an underlying aspect of this research, I gave study participants a choice of Skype, Zoom, or telephone. With the study participants' consent, I recorded the interviews, then transcribed, coded, and analyzed them for common patterns and themes. I used a matrix as suggested by Check and Schutt (2012) to categorize the data. I provide additional details about the data collection method in Chapter 3.

Definitions

Academic advisor: A person who assists students with degree requirements (Khali & Williamson, 2014).

Academic planning software: Software used by institutions to help students plan their schedules (Horn et al., 2015).

Computer-assisted advisement: Any advising practice that uses computers (Khali & Williamson, 2014).

Course management systems: Online systems used to deliver instruction for the virtual classroom. Institutions also use course management systems as online advising tools that facilitate student access to course information and enhance academic advising (Hall et al., 2017).

Early warning systems: Software systems that use data to alert advisors and faculty members about students who may need assistance (Velasco et al., 2020).

Faculty advisor: A faculty member who is a subject matter expert and who provides advice to students (Khali & Williamson, 2014).

IPASS: The Integrated Planning and Advising for Student Success a program that uses advising software and is funded by the Bill and Melinda Gates Foundation and the Leona M. and Harry B. Helmsley Charitable Trust. (Fletcher, et al., 2016). Note: IPASS was originally called IPAS- Integrated Planning and Advising Service (Gambino, 2017)

Student success software (SSS): Software that facilitates student success and is one of four main types: academic planning, early warning, task engagement or predictive analytics (Velasco et al., 2020).

Nontraditional students: Students older than 24 years of age (Abdrahim, 2020; Auguste et al., 2018; Ellis, 2019).

Task engagement software: A category of student success software used to remind students about assignments and administrative deadlines (Horn et al., 2015).

Technology-mediated advising: An advising method that uses various technologies in the academic advising process (Kalamkarian & Karp, 2017).

Traditional students: Students 18 to 24 years of age (Abdrahim, 2020; Auguste et al., 2018; Ellis, 2019).

Assumptions

I made two assumptions in the design of this study. My intent for the study was to examine online nontraditional students' perceptions of technology-mediated advising. I

gathered data from interviews, and I assumed that the study participants were truthful. I made this assumption because participants were volunteers; presumably, their participation was based on a sincere desire to contribute to research. Although the study size was small, I assumed that the participants would have different experiences. The data does reflect this diversity.

Scope and Delimitations

In this study I examined online nontraditional students, both male and female. Therefore, the results of this study do not address the efficacy of technology-mediated advising for other student populations, including traditional campus-based students. Furthermore, this study did not focus on the efficacy of different approaches to academic advising, such as intrusive or holistic as both approaches to advising can use technology. The study did not include students under 40 years of age. This study was focused on the students' attitudes toward the different ways in which the advising process used software. Furthermore, I probed students for their assessment about the extent to which technology-mediated advising affects the relationship between students and academic advisors. Because the study included students from different schools, the data gathered reflected a broad range of opinions and findings that may apply to a larger population.

Limitations

A limitation of this study was the selected participant size of only 14 students, as the small size impacts the generalizability of the findings (Francis et al., 2010). The data obtained was self-reported and verification of the participants' claims did not occur.

My own experience in the field was a limitation. In a discussion of generic qualitative research, Merriam (1998) noted that the researcher is the primary means of data collection and analysis. Because I was the only person to conduct the interviews, the interpretation of the data was subject to my biases. As a former academic advisor, I needed to acknowledge my biases regarding the workload advisors typically take. I endeavored to focus on the students' perspective for receiving academic advice. To do this, I wrote memos to myself about emerging findings, as well as my reactions and reflections (Merriam, 1998).

Significance

This study has the potential to contribute to the practice of technology-mediated advising and educational technology in general. Nontraditional students are a growing segment of the undergraduate population (Hussar & Bailey, 2018), and increasing numbers of colleges and universities are relying upon technology-mediated advising to facilitate assisting large numbers of students in an efficient manner (Schuetz et al., 2016; Velasco et al., 2020). However, research has found that nontraditional students were less proficient with technology than traditional students (Darney & Larwin, 2018). When assessing student satisfaction with technology-mediated advising, administrators and researchers often ignore the perceptions and experiences of the nontraditional student population (Williams & Whiting, 2016). The information gained from this study may assist advisors in determining the best way to leverage technology when working with nontraditional students, thus supporting their academic achievement, which can help nontraditional students persist to graduation and fill a vital role in the U.S. workforce.

Furthermore, learning about student perceptions of software could contribute to improving the success of future classes of nontraditional students.

Summary

Student success software has become an integral component of advising for many U.S. institutions. Due to heavy student loads, schools may use student success software to communicate with students. This type of software can remind students of important deadlines, monitor degree progress, and identify students at risk for failure. However, research on it has focused on the traditional student population (Junco et al., 2016; Williams & Whiting, 2016) rather than nontraditional students, who are the fastest-growing college population. This is a significant omission given the growing nontraditional student population and studies (Culp-Roche et al., 2020; Darney & Larwin, 2018) that showed nontraditional students to be less proficient with technology than traditional students. The contribution nontraditional students make to our economy is a compelling argument for institutions to provide a supportive academic environment for this population.

Academic advising can impact the academic success of students (Conceição & Lehman, 2016). For online nontraditional students, I used Moore's (1993) theory of transactional distance as a frame to examine the variables that impact advising. Astin (1999) noted that the effectiveness of a program related to its ability to increase student involvement. Therefore, this study was focused on the extent to which students perceived advising software to support their academic achievement. Chapter 2 includes a review of technology-mediated advising studies conducted thus far.

Chapter 2: Literature Review

As a way of managing a high ratio of students to advisors, postsecondary institutions may use technology to assist students with their administrative and academic concerns. Because of time and budget constraints, technology offers an efficient way for advisors to reach students (Kalamkarian & Karp, 2017). Information from the National Center for Education Statistics (Hussar & Bailey, 2017) shows an increase in the percentage of nontraditional students in the undergraduate population. However, nontraditional students have lower retention rates than traditional students (Gregory & Lampley, 2016). While academic advisors have a crucial role in the retention of students, the literature regarding the use of software tends to focus on the perspectives of traditional students only (Williams & Whiting, 2016). At the same time, Darney and Larwin (2018) found that nontraditional students were less proficient with technology than traditional students. Therefore, the purpose of this study was to understand the perceptions of nontraditional students toward academic advising software. This chapter includes a description of the literature search strategy, an overview of the theoretical frameworks, and a review of pertinent literature.

Literature Search Strategy

I used the following databases to identify peer-reviewed studies: Academic Search Complete, Education Source, ERIC, Google Scholar, Library, Information Science & Technology Abstracts, Research Starters- Education, and SAGE. With these databases, I used the following search terms: *academic advising, adult learners, adult students, attrition, degree completion, degree maps, distance education, dropout, e-*

advising, graduation rates, guided pathways, IPAS, IPASS, nontraditional students, online education, persistence, post-traditional students, retention, second-chance learners, student success software, technology-mediated advising, virtual advising, and web-based education.

Using Walden University's library, I conducted searches for peer-reviewed literature. Typically, I conducted searches using all the databases listed above simultaneously. Search terms commonly used in combination were *adult learners, adult students, and nontraditional students*. To a lesser extent, I also used the terms *second-chance learner, and posttraditional student*. Another combination of terms was *completion, graduation rates, and persistence* as well as the opposite terms, *attrition and drop out*. To identify the learning format, I used the terms *distance learning, distance education, online education, and web-based education*. The software search terms were *student success software, degree maps, IPAS, and IPASS*. To research advising, I used the terms *academic advising, technology-mediated advising, and e-advising*.

Conceptual Framework

I used two theories to form the conceptual framework for this study: Moore's (1993) theory of transactional distance and Astin's (1999) theory of involvement. I selected Moore's theory because it deals with the relationship between students and educators, primarily faculty, and their separation through the online format. However, in as much as academic advisors also impart knowledge, Moore's theory is germane to this study. I selected Astin's theory because of its focus on the student's active role in the learning process, a quality necessary for successful online study.

Transactional Distance

In conceiving transactional distance, Moore (1993) built on John Dewey's idea of the relationship between individuals, the environment, and patterns of behavior in a situation. From this inspiration, Moore devised his concept of transaction. Moore applied Dewey's idea the idea of education or learning as a transaction between teachers and students to the distance learning environment, with and the distance between them of cyberspace resulting in unique patterns of behavior. For Moore, transactional distance is not a discrete variable, it is continuous; there are degrees of transactional distance. Moore noted that the space between students and teachers pertains to both communication and psyche, and this is the transactional distance. He further noted that this distance has the potential to lead to misunderstandings between the learner and instructor. The potential for misunderstandings can also occur in an advising situation. For example, a student may misinterpret an advisor's recommendation to adhere to prerequisite requirements as an attempt to hold him or her back and obtain more tuition money.

The degree of transactional distance that takes place in a learning environment is contingent upon three variables: dialog, structure (course design), and learner autonomy (Paul et al., 2015). Moore (1993) defined dialog as the interaction between the learner and instructor. He noted that the philosophy of those designing a class, the personalities of the learner and instructor, and the environmental elements influence dialog. Moore considered the most important environmental element to be the method of communication used in the instructor and learner interaction. The method of communication determines the amount of interaction between the learner and the

instructor. For example, a lesson delivered via television does not allow for two-way interaction, whereas one delivered via the internet can. Transactional distance is likely to be lower in situations that allow a substantial amount of learner and instructor dialog; it is likely to be higher in situations that have limited learner and instructor dialog. In this study, if we substitute academic advisors for instructors, there is a similar relationship whereby the advisor is conveying information to the student regarding matters such as course registration and academic progress. When this occurs in person, with two-way communication, the transactional distance is less. However, technology-mediated advising reduces two-way communication. Moore identified the third variable of transactional distance as the characteristic of the learner: learner autonomy; that is, the learner's ability to assume responsibility for their acquisition of knowledge; the ability to learn independently.

In discussing the learner's characteristics, Moore (1993) noted a positive correlation between learning style and transactional distance: the more transactional distance, the more the learner requires autonomy. In instances where there is great transactional distance and little guidance, the learner must determine a study strategy that will be the most effective (Moore, 1993). The three elements of transactional distance are important to this study because they can provide a framework for examining the interaction between students and advisors. Specifically, the framework includes the student's relationship to the advisor and the student's relationship to the software used in advising. The latter is analogous to the relationship to the curriculum or course design.

Lastly, it provides a framework for examining student perceptions about what they need to succeed in the online environment.

Applications in Online Support Services

Researchers have used Moore's (1993) theory in various ways to explore distance as it applied to online higher education and specifically in the evaluation of distance education programs. Stein et al. (2009) investigated graduate students new to the online environment who dealt with issues of communication, learner involvement, and time management. In this naturalistic inquiry, Stein et al. interviewed 15 graduate students via an online chat. In exploring how novice learners deal with transactional distance, Stein et al. identified three themes: determining how best to communicate, figuring out how to connect with others, and learning the responsibility of being an online student. These themes reflect the three components of transactional distance. The findings of Stein et al. suggested the importance of faculty understanding the trepidation students new to the online format may have and students understanding the importance of reaching out to support each other. This study revealed that it is important for novice online students to learn how to use a new environment, assume responsibility for their learning, and rely on each other. Even with the familiarity graduate students have with the learning environment, findings from the study conducted by Stein et al. reflected that online learning presents unique challenges. These are the types of challenges that academic advisors must help students to navigate.

Interaction between peers can be key to academic success, as demonstrated by the results of Stein et al. (2009). Kassandrinou et al. (2014) explored this concept further in

their use of semistructured interviews with 12 nontraditional students enrolled in a hybrid program in a Greek university. They explored factors that increased transactional distance and its impact on the learning process. Kassandrinou et al.'s research considered Moore's (1993) three categories of transactional distance: learner/instructor, learner/learner, and learner/content. The purpose of the study was to explore transactional distance in learner/learner interactions. Findings showed that factors such as a lack of communication or restricted communication between learners increased the perception of transactional distance and negatively impacted the learning process and completion of classes.

While research about the use of Moore's (1993) theory has provided insight into online advising, some studies indicate that transactional distance acts in similar ways to that of an instructional setting. Arhin et al. (2017) examined the relationship between academic advising and student retention in their mixed methods study. From a sample of 727 students and student support staff (advisors and counselors) at the University of Cape Coast in Ghana, this study assessed the degree to which academic advising affected student retention. Transactional distance theory was the framework for the research. In consideration of the three variables Moore identified as the components of transactional distance, dialog, structure, and autonomy, Arhin et al. established a relationship between academic advisors, the method by which they communicated with students, and student retention. The results showed that the advising center had not assigned advisors to most of the students (87.5%), and general student perception of academic advising was negative. The statistical results of the survey showed that advising did not have a

significant impact on retention. To examine further why students had a negative view of advising, interviews revealed that attitudes were based on the difficulty students had in access to advisors; logistically it was difficult to schedule appointments. The student support staff confirmed this difficulty as well. Thus, there was significant transactional distance. Arhin et al. concluded that for academic advising to promote retention, academic advisors must be accessible to students. This study is an example of how technology-mediated advising can allow advisors to serve large numbers of students in a more efficient manner as they reduce the perceived distance students experience.

Edirisingha and Jiang's (2018) research presented another instance where Moore's (1993) theory informed research about students' learning experience in an online classroom. Using Moore's theory of transactional distance, Edirisingha and Jiang explored students' perception of structure, dialog, and learner autonomy and their impact on the students' sense of engagement. The researchers interviewed students from two postgraduate classes at the University of Leicester in the U.K. via Skype, online, or email. Data from the interviews identified components that showed how students viewed their classroom experience using Moore's categories. For example, interaction with a university tutor contributed to dialog, the division of course modules related to structure, and the ability to personalize assignments contributed to a sense of autonomy. Although the focus of this study was not on nontraditional students, much of what is desirable to the students in this study, such as the relationship of the curriculum to a professional setting, was also found to be desirable to nontraditional students in other studies (Bourdeaux & Schoenack, 2016; Youde, 2018).

Bolliger and Halupa (2018) examined the link between engagement and transactional distance. Although these researchers did not cite Astin's (1999) engagement theory, they used another engagement scale, designed by Dixon (2010, 2015 as cited in Bolliger & Halupa, 2018). From a sample of 667 undergraduate and graduate students enrolled at three universities, Bolliger and Halupa investigated online students' perceptions of engagement, transactional distance, and the outcome of this relationship. The researchers collected data via an online questionnaire. In addition to using Dixon's scale, the authors also used the Revised Scale of Transactional Distance by Paul et al. (2015 as cited in Bolliger & Halupa, 2018). The combination of these instruments showed that the students in this study were fairly engaged; on a scale of 34 to 95, the mean score was 74.97. For transactional distance, the scale ranged from 16 to 60, and the mean score was 47.74; a high score indicated low transactional distance. Bolliger and Halupa also measured student outcomes, including tracking learning goals, progress in learning, and general satisfaction with a course. On a scale from 3 to 15, the mean was 12.29. Results showed when students experienced low levels of transactional distance, they felt engaged and had positive student outcomes.

While Moore (1993) considered the student-teacher relationship, the relation between students and advisors is similar. Like instructors, academic advisors impart knowledge to students in the form of information about academic policies, departmental requirements, and course selection. Crookston (1972, 2009) articulated this idea in his discussion of developmental academic advising: teaching occurs in any experience that

contributes to the growth of an individual or group. Therefore, when academic advisors are working with online students, the potential for transactional distance exists.

Involvement Theory

Like Moore's (1993) theory, Astin's (1999) theory of involvement considers both the tangible and intangible. Astin considered involvement to include both the physical and psychological energy students devote to their academic endeavors. He noted that his intended meaning for involvement includes synonyms such as engagement, commitment, and enthusiasm. In addition to the energy devoted to school, the four other postulates of Astin's theory include 1) involvement or engagement is on a continuum, 2) engagement has qualitative and quantitative features, 3) a student's development from association with a program is proportional to the quantity and quality of the student's involvement in that program, and 4) the effectiveness of a program is directly related to the program's ability to increase student involvement. In his discussion of this theory, Astin noted that the last two points relate directly to educational program development, and these were the focus for my research. Astin further noted that involvement theory provides a connection to the focus in higher education on subject matter, resources, and an individualized approach toward learning. Involvement theory emphasizes a student's active participation in learning, an attribute critical for online study. Astin discussed the application of involvement theory for administrators, faculty, and student services staff. The latter group, Astin noted, frequently interact with students on a one-to-one basis and, therefore, are in a unique position to assess involvement. It is because of the recognition of the critical role of student support personnel, which includes academic advisors, that Astin's

theory is germane to my research. Astin's theory also relates to this study because it emphasizes a student's active role in their learning process; successful online study requires engagement in learning.

Application in Educational Settings

Researchers have used Astin's (1999) theory of involvement to inform the methodology of several studies for different purposes and different populations. Burch et al. (2015) used involvement theory, along with Kahn's (1990) employee engagement research, to develop scales for assessment of undergraduate student engagement factors. The study design involved two parts: the first to 214 undergraduates and the second to 354 undergraduates. Both groups attended a university in the southern United States. The results of this study revealed that students were engaged in different ways: emotionally, physically, and cognitively in class as well as out of class. These findings mirror Astin's postulates and underscore the need for advisors to have a multifaceted approach for student engagement.

Engagement has also proven to have a relationship with the amount of coursework taken. Wirt and Jaeger (2014) examined one specific area of student engagement: student-faculty interaction. Using a random sample of 5000 students from the United States, Canada, and the Marshall Islands, they explored differences between full-time and part-time students in terms of demographic, financial, and academic variables. The results showed that being part of a learning community was the strongest predictor of student-faculty interaction for both full-time and part-time students. Student-

faculty interaction was positively correlated with increased student success, suggesting that interaction may be key to retention for online environments.

Many higher education institutions are concerned with the declining enrollment for students pursuing science, technology, engineering, and mathematics (STEM) fields and have used engagement theory to explore how better to retain students. Using Astin's (1999) theory of involvement as one of the theories informing their research, Kolvoord et al. (2016) conducted a mixed-method study in which they examined multifaceted approaches, such as summer programs and mentoring programs, used to increase the success rates of STEM majors. Four schools collaborated on this study: a community college, a four-year college, and two universities. The results of this research showed that of the over 300 participants, approximately 60% persisted in STEM fields, which showed an improvement. The results of this study demonstrated the importance of engagement in student retention, particularly indicating the potential for varied approaches rather than a one-size-fits-all.

Buelow et al. (2018) used Astin's (1999) theory of involvement to examine engagement in an online format. Researchers gathered data through an online survey, which included two open-ended questions. A total of 417 students at a small state university completed the survey. They were mostly undergraduates (87%), full-time (84%), and female (80%). The students' experience with online education varied; some were taking their first class while others had taken ten or more online classes. The purpose of the research was to identify what aspects of the curriculum the students found most engaging and what aspects they found disengaging. Results showed that students

found discussions, interactive assignments, and the use of media was engaging activities while long reading and writing assignments, as well as slow responses from faculty, served to make students feel disengaged. Buelow et al. noted that a sense of connection to oneself, other students, and the curriculum was important to the students' sense of engagement. Although Buelow et al. did not provide information about the age range of the students, the idea of connection to the curriculum parallels with the preference of nontraditional students in other studies (Youde, 2018) for the curriculum to have meaning with their professional experience.

Although most research regarding Astin's (1999) theory of involvement concerns the classroom experience, Suvedi et al. (2015) conducted a study focused on student perceptions of academic advising. They obtained data from online surveys of students enrolled in the College of Agriculture and Natural Resources at Michigan State University between 2005 and 2013. A total of 4,875 undergraduate students participated in this study. The data reflected that overall, students had positive perceptions of assessment of academic advising, although females were more positive than males and first-year students were more positive than seniors. Students identified the strengths of the advisors as their accessibility, helping students with internship opportunities, and job preparation. However, a portion of students criticized advisors' lack of organization and currency of information. Students also suggested the need for more effective delivery of information. Suvedi et al. did not disclose the age range of the students in their study, so nontraditional students' perceptions are unknown. Regardless, this study provides

longitudinal information about students' perceptions of academic advising, which distinguishes it from much of the other research.

Astin's (1999) theory of involvement is applicable to both face-to-face and online formats in that it considers both physical and psychological energy. In each of the studies referenced above, involvement in a learning community promoted student persistence in the classroom environment. Astin's assertion that involvement theory is relevant to program planning warrants consideration by student support professionals as they are in a unique position to have direct impact on student persistence.

Literature Review Related to Key Concepts

The literature review for this study provided context for the development and approach for my research. Research on the effectiveness of technology-mediated advising has largely neglected nontraditional students. Therefore, the purpose of this study was to examine the perceptions of nontraditional students about this type of advising. The significance of this research is its potential to impact attrition, so the literature review includes studies that show the attrition rate of nontraditional students in relation to traditional students. Next, I review literature that examines the characteristics of nontraditional students as this shows how they differ from traditional students. Finally, because technology-mediated advising is the focus of the research, I provide an overview of academic advising and the use of technology by nontraditional students.

Attrition of Nontraditional Students

Typically, institutions determine attrition rates for bachelor's degrees by degree completion within 6 years (Bohl et al., 2017; Matthews-Whetstone & Scott, 2015;

Nadasen & List, 2016). For associate degree programs, institutions assess attrition at a three-year time frame- half of that for the bachelor's degree. My research includes nontraditional students at both two-year and four-year institutions, so research about community college students is included.

There is conflicting information regarding the attrition rates of non-traditional students. In a collaborative community college and four-year university quantitative study, age positively impacted student persistence (Nadasen & List, 2016). A quantitative study conducted by James et al. (2016) that also compared retention rates at two-year and four-year schools looked at students taking campus-based classes, online classes, and a combination of campus and online classes. The results showed that nontraditional students who took only online classes had a higher retention rate than traditional students taking only online classes for those enrolled at campus-based community colleges and predominately online schools.

Ellis' (2019) quantitative research addressed nontraditional student persistence and attrition based on performance in an individual class rather than an entire degree program. The results of the data indicated that 59.5% of the nontraditional students but only 40.7% of the traditional students completed the class. Ellis posited that the results reflected nontraditional students' willingness to persist at a higher rate than traditional students. This highlights the importance of supporting students early in their programs. This study provided a unique perspective on nontraditional student attrition and, therefore, is included here. While Ellis discussed nontraditional student support in terms of classroom and faculty activities, this support could also include the type provided by

academic advisors using student support software, such as early warning systems and reminder notices.

While some studies found nontraditional students to have higher persistence rates than traditional students, other studies have indicated that this is not always the case. Gregory and Lampley's (2016) study of community college students found a difference in the course completion rates of traditional and nontraditional students. Their study utilized secondary data gathered from 4,604 students in Tennessee. The purpose of the study was to determine any differences in the success of students taking online classes compared to those in face-to-face classes when taught by the same faculty. In addition, researchers also examined variables such as age, gender, and financial aid status for their impact on student success. For this study, the authors defined success as receiving a final grade of C or better. The results showed that online students were more likely to receive grades of A, F, or W than classroom students, and nontraditional students were more likely to earn A grades than traditional students regardless of format. Nontraditional students who had not received a Pell Grant had greater success with online classes than traditional students if they passed the class with a grade of C or better. Pell Grants were a variable in this study because they require a minimum grade point average for eligibility. However, the nontraditional students in the online classes were slightly more likely to withdraw from a class than the traditional students.

In their 2018 quantitative study about adult learners at Korean cyber universities, Choi and Kim noted that while administrators consider attrition a problem, there is little research on the topic. Choi and Kim reviewed the records of 3,462 students from the

administrative data set, the majority of whom were between 30 and 49 years of age. They divided students into two groups: those who dropped out and those who persisted in their studies. Choi and Kim identified key factors that influenced attrition, including students' scholastic aptitude, motives for attending school, as well as professional and familial responsibilities. The research conducted by De Paepe et al. (2018) examined the attrition of nontraditional students as it also a problem in Belgium. The population for this study was immigrants learning Dutch in online adult education programs. The results of this quantitative study showed that the success of students in the introductory language class was a strong predictor of success in more advanced classes. Students rated contact with course tutors as being a key motivating factor in their persistence. These studies indicate that attrition of nontraditional students is not limited to the United States and that the challenges of balancing academics, work, and family transcends borders.

While the studies conducted by Ellis (2019), Nadasen and List (2016), and James et al. (2016) showed online nontraditional students to have slightly higher persistence rates than other students, the research done by Gregory and Lampley (2016) showed that they were more likely than other student populations to drop out. In comparing studies, Gregory and Lampley (2016) used different variables to measure academic achievement. This reflects the multifaceted aspect of assessing academic achievement and the challenge for academic advisors to leverage technology to address student needs. The statistics for attrition varied across studies depending on how institutions define the dropout rate, and I discuss the various ways researchers define it in the following sections. Regardless of how institutions define attrition, keeping the rates low rates is

important for all segments of the population. However, as the literature review illustrates, studies that focus on advising and the technology used to facilitate it largely ignore the nontraditional population.

Students Reentering College

Many nontraditional students are re-entry students in that they started college previously but dropped out and then re-entered the educational system. Steele and Erisman (2016) estimated that one in six adults in the United States enrolled in college at one time but did not earn a certificate or degree. However, the issue of re-entry students is not unique to the United States. Harvey and Szalkowicz's (2017) mixed-method study of re-entry Australian students indicated that students initially dropped out of school for factors that were external to a college or university. Financial issues and adult commitments are often cited as challenges to completing degree programs (Steele & Erisman, 2016). Steele and Erisman noted that the admissions process itself could be a deterrent to re-entry students as school information may be available only during traditional business hours. This is particularly challenging for online students who cannot get to campus or call during business hours. They also noted the need for greater information about transfer credit for previously earned college credits.

Although some students re-enter school after a lengthy absence, other students might have a short break from their classes with the intent of returning to school. These students are stop-outs. Using archival data as well as focus groups and interviews, Alschuler and Yarab (2018) examined the attrition of veterans at a Midwestern U.S. university. They noted that stops-outs occurred for various reasons, including military or

civilian demands, family commitments, or a health-related event. In this study, the students were on hiatus from school between 1 and 2 years. The findings illustrate how the category of stop-outs can affect the way in which attrition is determined and highlight the extenuating circumstances that require nontraditional students to have a break in their studies.

In a study of online student persistence, Su and Waugh (2018) examined why graduate students completed or dropped a class. Through a program attrition survey, Su and Waugh compared the perception of the experience and participation of master's degree students who completed a program with that of the students who dropped it. A total of 16 students participated in the study; 11 who completed the program ("completers") and five who did not ("droppers"). In identifying their reasons for enrolling in the program, both groups indicated that the online format was the main reason. However, the completers also said that the value of the program and its flexibility were also compelling factors. Flexibility was also a top reason for the droppers to enroll. When surveyed about their perception of the workload for the program, all the droppers and seven of the completers indicated that the workload was greater than anticipated. Eighty-one percent of the study's participants felt that the greatest challenge of the program was personal time management. Su and Waugh noted it might have been that the college had not provided enough information about the time commitment needed for online study to prospective students during recruitment activities. Nontraditional students are more likely impacted by personal factors, such as work and family, and thus may struggle more with time management, even though they have more life and work

experience that might have instilled time management skills. Nontraditional students may not have realistic expectations of the time needed for completion, which suggests a lack of readiness about which advisors can help.

Academic Advising as Teaching

Historically, researchers who study nontraditional students, their learning, and advising have relied on the seminal work of Crookston (1972, 2009), who conceived academic advising as teaching through which students matured developmentally. Lowenstein (2020), in his seminal work about advising, posited that advising involves a coaching, learning-centered approach. He viewed the advisor as someone to help the student make sense out of their entire curriculum, similar to the way an instructor helps a student to understand the concepts in a given course. Lowenstein noted that the advisor/coach uses a Socratic, interactive approach by asking questions to guide the student's thought process as opposed to simply telling the student what to do. How learning occurs pertains to academic advising, and therefore, advisors need to understand the experience of nontraditional students using technology as a tool in their learning process.

Smith and Allen (2018) conducted a qualitative study exploring the idea of advising as teaching. Using data obtained from 22,305 undergraduate students from nine institutions via an internet survey, they sought to examine the correlates of advising learning outcomes as they were linked to retention. The results of the data showed that the higher the student satisfaction score for advising, the higher the score for learning outcomes. Although 65.6% of the students in this study were under 25 years old, Smith

and Allen's research supports the idea that students learn from their advising experience. Similarly, Mu and Fosnacht (2016) examined the influence of learning outcomes on academic advising. Using data from the National Student Survey of Engagement, Mu and Fosnacht's quantitative study was comprised of the responses of 24,443 senior undergraduates from 156 schools. The results of the data indicated that the academic advising experience had a statistically significant impact on students' perceived gains. Mu and Fosnacht identified both institutional (size, public vs. private) and student (campus vs. online, major, parents' education) characteristics known to correlate with learning outcomes. Although they selected a range of characteristics, they did not consider age, so their study does not specifically address advising experiences for nontraditional students. However, these studies provide evidence that students learn from interacting with their advisors.

Nontraditional Students' Learning Characteristics

The literature on how adults learn offers several theories. However, there is little about how these apply specifically to academic advising for nontraditional students. This gap in the literature was noted by Roessger et al. (2019), who conducted a study that explored the relationship between student demographics and the use of academic advising services. The researchers conducted a quantitative study at an urban community college in the Northwest United States through a regression analysis of two incoming classes. Using self-directed learning theory to frame their research, Roessger et al. examined data from 4,207 students to determine if they met with an academic advisor, the study's dependent variable. Independent variables for the study included age,

employment status, family status, and gender. Roessger et al. hypothesized that as student age increased, the probability of attending an advising session would decrease. Findings proved the hypothesis true. For students 18- 22, 25% were likely to meet with an advisor. The students' likelihood of meeting with an advisor dropped to 12.8% for the 23-27 age cohort. It continued to decrease to 4.6% for students 43- 47, and for older students, it remained at 4.5%. This study did not focus on the students' learning format or use of student success software. However, this study is important because it establishes that self-directed learning, which is characteristic of many adult learners, can influence the use of advising services.

Kennedy's (2018) post-intentional phenomenological study of adults explored how people experience distance learning. Kennedy investigated both formal and informal aspects of online education, and it included social media, massive open online classes (MOOCs), library websites, and online communities. Kennedy noted seminal theories about distance learning, including Moore's (1993) transactional distance. In addition, Kennedy included a discussion of Knowles' theory of andragogy. I included Kennedy's research because of its consideration of transactional distance and andragogy. However, Kennedy's research is on-going; they did not provide final results. Information about the lived experiences of nontraditional students has the potential to add to the body of knowledge about this cohort.

The theme of self-directness was also present in Bourdeaux and Schoenack's (2016) study of nontraditional students' expectations and experiences in an online learning environment. The purpose of the study was to identify what online

nontraditional students expected in the virtual environment, and the behaviors faculty might adapt to support those expectations with the end goal of facilitating learning. The results of the study indicated that students' reasons for pursuing online education reflected in three main themes: time (schedule flexibility), self-directed (students are responsible for their learning), and learning tools (the use of pedagogical approaches, such as discussion posts). The desired behavior by students from faculty included clarity of course requirements, respect, and effective communication, which included prompt responses to student emails.

The self-directed nature of nontraditional students was also a characteristic discussed by Rabourn et al. (2018). Their quantitative study used data obtained from 146,072 first-year undergraduates during the 2014 administration of the National Survey of Student Engagement. The students surveyed were a mix of traditional and nontraditional students. Rabourn et al. considered both academic engagement and campus interaction, the latter of which included a specific category for a supportive environment. The data revealed that in comparison with traditional students, nontraditional students were more academically engaged and had a positive perception of the instruction they received, but they reported less interaction with faculty and less support from their respective campuses. Like Bourdeaux and Schoenack's (2016) findings, Rabourn et al. found that nontraditional students faced challenges of work and family responsibilities. In their research, Rabourn et al. did not examine subcategories of nontraditional students by age, which would have provided further insight about engagement. However, their assertion that support for nontraditional students may differ from that needed by

traditional students further underscores the need to learn about the perceptions of nontraditional students in the online environment.

The issue of institutional support for nontraditional students was also examined by Conceição and Lehman (2016), who conducted a survey of 439 students about their perceptions about online support services. The study population included both undergraduate and graduate students from a variety of disciplines. Findings indicated that there were three main areas students perceived as important: support from instructors, friends, and family; institutional support; and self-care. In identifying aspects of self-care, students noted the importance of managing the isolation of online study, taking control, and managing time, like the characteristics McClendon, et al. (2017) identified as being important for successful online study. This study highlights the need to adopt a multi-faceted approach to supporting online students that can be offered in different ways. For example, Youde's (2018) study of tutors in a hybrid setting utilized andragogy as a lens for effective tutoring practices. Youde discovered that these include adults' need to know why they were studying a topic, the use of experience as a basis for learning, and the importance of self-direction, specifically the need for adults to be responsible for their educational experiences. While much research on adult learning focuses on the relationship between students and faculty, Youde's research addressed learning that transpires through the support system of a tutorial program, and its findings support Crookston's (1972, 2009) idea that teaching occurs in any experience that contributes to the growth of the individual. It is of further significance because academic advisors often coordinate tutorial programs.

These studies used the lens of adult learning theory to understand the experience of nontraditional students, and they reveal common themes (Bourdeaux & Schoenack, 2016; Roessger et al., 2019; Youde, 2018). These include the desire of nontraditional students to have an active role in their educational experience, and to be self-directed. Communication was also another critical component, especially in the online format.

Typical Attributes of Nontraditional Students

Researchers and policymakers typically use age to define nontraditional students. Nontraditional students are those over 24 years of age (Ellis, 2019; Gregory & Lampley, 2016; Woods & Frogge, 2017). However, the National Center for Education Statistics (NCES, n.d.) identified other attributes that may apply to a nontraditional student, including being financially independent, being a single parent, working full-time while attending school, delayed college enrollment, and the lack of a traditional high school diploma. Those students over 24 years of age may not fall into one generic category and thus can be challenging to describe as a group. This section examines research that has identified traits and characteristics of the nontraditional student population that can help advisors better meet their needs, particularly in an online environment.

Because of the various responsibilities nontraditional students most likely have, they have preferences and needs different from traditional students. In a quantitative study of university students, Woods and Frogge (2017) found that traditional students favored face-to-face instruction while nontraditional showed a preference for online instruction. Woods and Frogge noted that their findings were consistent with those of other researchers who have suggested nontraditional students' preference for online

classes reflects coordination rather than the format itself. In their qualitative data analysis of online community college students, Gregory and Lampley (2016) also noted the appeal of online classes to nontraditional students due to their convenience and flexibility. They further noted that while nontraditional students tend to be more focused and serious than traditional students who may not be as prepared for college-level study. Many nontraditional students delay their enrollment into college, or they may have started college but dropped out and are now re-entering college. The time away from school may cause their study skills to deteriorate.

Aside from age, one of the main characteristics of nontraditional students is their employment status. In a study conducted by Moore and Greenland (2017), work was the primary reason students cited for dropping a class. In this qualitative study, researchers conducted telephone interviews with 226 online students attending Open Universities Australia (OUA), where 68% of the student population is over 30 years of age. Researchers conducted interviews in the first phase to explore why students dropped their classes, and in the second phase, they examined school policies regarding accommodations for working students. Findings revealed that work demands accounted for 35.8% of dropouts. The next most frequent reason cited for withdrawal was enrollment-related, but this accounted for only 10.6% of the withdrawals. Moore and Greenland noted that school policies may fail to consider differences between campus and online students and that their research was student-centered. That focus is not a flaw but a limitation in that it does not consider issues of fairness and equity from an administrative standpoint in the establishment of academic policies. Thus, it may appear

that attrition is something for which students are solely responsible, but institutions may develop policy with one type of learner in mind, traditional students, which unintentionally puts nontraditional students at a disadvantage.

Other research has highlighted the impact of nontraditional students' multiple responsibilities. A quantitative study conducted by Denning et al. (2018) examined how satisfaction with school, work, and family influenced students' negative affect (mood). Denning et al. used MTurk to recruit 145 study participants throughout the United States. The students ranged in age from 19 to 54, with an average age was 30.80, and they all lived with either a partner, their children, or an older family member. Denning et al. examined the extent to which social integration alleviated or buffered the negative effect of the students balancing multiple roles. There was a significant correlation between work satisfaction and social integration on negative affect, which suggested that social integration buffered those students. Denning et al. did not find that school satisfaction was associated with negative affect. The authors noted that the average GPA for the students surveyed was 3.55, and their good standing likely impacted their feeling about school. Overall, they found that students who balanced different roles and were more socially integrated reported lower levels of negative moods. This research was significant in that it highlighted the impact of satisfaction with various roles and the impact they can have on a student's mood, although researchers have yet to explore variations across ages. While those who had a positive mood were more likely to achieve academically, it is unclear if doing more increases productivity because these nontraditional students do more overall than other students.

Nontraditional students may have similar characteristics in their motivation to return to college. In a qualitative study of nontraditional students, Bohl et al. (2017) interviewed university students who ranged in age from 28 to 56 to determine the challenges nontraditional students face in a university setting. As is typical for nontraditional students, eight of the nine students in this study were re-entry students. Through semistructured interviews, researchers found that the students' motivation to return to school focused on aspirations for career advancement, a desire to be a role model for their children, or the personal wish to complete something they started. These results were like results of Dos Santos' (2020) qualitative study of nontraditional engineering students. Using Skype and face-to-face interviews, data was obtained from 28 students attending a private university in California. As was the case with Bohl et al., motivation for the students surveyed by Dos Santos included career advancement.

A study conducted by Marrero and Milacci (2018) reflected findings like those of Bohl et al. (2017). Through a qualitative phenomenological research design, Marrero and Milacci's study took place at two Hispanic Serving Institutions in the southeastern U.S. They obtained data from 10 students between 25 and 53 through one-to-one interviews, journal entries, and focus groups. Reasons for staying in school included career advancement and being a role model for one's children. In addition, however, these students also noted cultural challenges that motivated them to persist with their education. Marrero and Milacci noted an important distinction between student retention and student persistence, the former being a characteristic of a school while the latter is an attribute of the student that reflects their tenacity and the ability to overcome challenges.

Because of this dual perspective Marrero and Milacci's study underscores the need to consider support for nontraditional students from the perspective of both the institution and the student.

Torun's (2020) study of university students at a public institution in Turkey examined the importance of e-readiness to academic achievement. The students were enrolled in an online English as a Foreign Language class. This quantitative study obtained data from 153 first-year students, 55.2% of whom had not previously taken an online course. Torun's research sought to determine if e-learning readiness was a predictor of academic achievement and examine the correlation between e-readiness and related factors- what he termed "sub-dimensions," such as self-directed learning, learner control, and internet self-efficacy. Academic achievement was measured using midterm and final grades, and additional student data were obtained from an e-learning readiness scale that included measurements for the sub-dimensions. Findings confirmed the hypothesis; there was a strong relationship between the self-directed learning component of e-readiness and academic achievement. Furthermore, the second most influential predictor of academic achievement was motivation. This study highlights two attributes common to nontraditional students and essential for successful online study: self-direction and motivation.

Unique Needs of Specific Nontraditional Students

Nontraditional students are heterogeneous, and within this category, there are sub-groups that have unique needs. One subcategory of nontraditional students is veterans who may have unique characteristics and special needs. In his review of a transition class

for veterans, Osborne (2016) noted that a result of the Post 9/11 GI Bill was an increased number of veterans returning to school. Like nontraditional students at large, veterans are older, have service/work experience, and may have dependents. In addition, they may have service-related physical and psychological challenges, which can further complicate their place in the academic environment.

The atmosphere of the structured military environment may affect how veterans adapt to the college environment. Like Osborne (2016), Southwell et al. (2018) noted the less structured learning environment is often a challenge for active-duty military personnel and veterans. Through a survey administered to 386 students attending 16 different 2-year or 4-year schools in the Midwest, Southwell et al. compared the frequency of student visits to faculty and advisors to student beliefs that included persistence, expectations for graduating, and perceptions of support. Researchers administered a web-based survey to civilians, active-duty personnel, and veterans. The average age of the civilians was 24.69 years, while the military students had an average age of 30.41 years. Findings indicated that civilian students visited advisors more frequently than military students. Southwell et al. offered a possible explanation: consistent with the broader nontraditional student population, military students have more nonacademic commitments, such as work and family, resulting in less time to utilize the services of school personnel. Southwell et al. also noted that the military culture of teamwork distinguishes active duty and veterans from nontraditional students at large. Thus, for faculty and advisors to be effective with military students, they need to understand the military culture.

Just as veterans comprise a significant subcategory of nontraditional students, so too do nontraditional students with young children. Peterson (2016), who called this group “student-parents,” conducted an interpretive phenomenological study of 15 such individuals attending community colleges. Like nontraditional students at large, student-parents work, and many of them are returning to school after a hiatus from formal education. Peterson noted the importance of student support staff and faculty in promoting the success of student-parents. Common themes influencing the students’ persistence were support (academic financial, and social), the ability to manage stress, study strategies and parenting, and self-awareness. As is a common motivation for nontraditional students, the student-parents’ motivation to go to school was for future financial gain. Students also struggled with time management as they worked, attended classes, and maintained their families. However, what distinguished the student-parents from other nontraditional students was their desire to go to school to set an example for their children. Findings included the important role of academic, social, and childcare support for this group of students.

Another study that examined student-parents as a nontraditional subgroup was conducted by van Rhijn et al. (2016). Using open-ended online surveys, they obtained data from 398 students (302 women and 96 men) attending four Canadian universities. The students ranged in age from 23 to 70 years, and the average age was 38.2. The purpose of this study was to examine the students’ motivation for returning to school. From an analysis of the data, van Rhijn et al. identified three main reasons for pursuing education: career, the desire to learn a specific skill or designation, and family. Students

pursued university degrees to move ahead professionally, fulfill personal goals, or inspire their children. Although this study's focus is not on technology, findings highlighted the varied motivations of some nontraditional students to pursue higher education. It is important to understand motivation because it can affect persistence.

Caregiving is a responsibility of many nontraditional students that can affect the college experience and academic achievement. This relationship was explored by Stone and O'Shea (2019) in a study of Australian students. They researched the motivations of nontraditional online women who were first in their families to pursue university-level education. The qualitative data they obtained from 77 study participants was part of two larger studies conducted at Australian schools. The purpose of the study was to explore the motivations for pursuing higher education, the process of becoming a student, the impact on the students' multiple roles, and what factors helped and hindered being a student. Results showed that career and employment opportunities were a factor for some students.

Other researchers have examined the diversity of nontraditional student populations. Auguste et al. (2018) qualitative phenomenological study examined student perceptions of faculty advising at academically selective colleges. While nontraditional students are a significant and growing population at many community colleges, they often comprise less than 5% of the student population at selective 4-year institutions. Auguste et al. conducted in-depth interviews with 42 women at two single-sex colleges in the northeast United States. For this study, diversity consisted of race and culture, parental status, and age (22 to 62 years of age). Researchers used data gathered from in-

depth interviews to identify six themes; three that were negative (indifference, gatekeeping, and marginalization) and three that were positive (guidance, advocacy, and recognition). The themes reflected student preference for a student-focused, developmental style of communication rather than just providing the student with information. Auguste et al. provided a valid critique of their study when they noted that research based solely on the study's perception leaves out information about faculty objectives. Although the students in this study were evaluating their interaction with faculty advisors, as opposed to professional advisors, this study is significant in that it again underscores the importance of advisors in the students' sense of engagement. All of these studies highlight that nontraditional students are a diverse group- single parents, veterans, and caregivers- with different needs to achieve their goals.

Academic Advising

Historically, academic advisors have a crucial role in the persistence of students for a variety of reasons (Bohl et al., 2017; De La Rosby, 2017; Donaldson et al., 2016; Vianden, 2016). Vianden (2016) surveyed 29 college students from three Midwestern colleges and asked them to assess advising encounters. He found that advisors were influential in helping students establish a sense of belonging with their school. Mu and Fosnacht's (2016) study on effective advising documents the importance of advising on student outcomes. In their qualitative study of 26,516 seniors from 156 bachelor-granting institutions, they found a positive relationship between the frequency of a student's meetings with an advisor and self-reported gains. Findings from McClure's (2017) study of priority registration for undergraduates indicated that academic advisors had a positive

effect on registration. This study was conducted at a community college which offered currently enrolled students the opportunity to register for the next term during a priority period, but typically low numbers of students took advantage of this enrollment timeframe. In comparing experimental and control groups of students who historically were the least likely to enroll, the students who an advisor contacted enrolled at a higher rate than those who did not (71% versus 52%). These studies underscore the importance of advisors in supporting student persistence.

Academic advisors have a critical role in student success, whether they are on campus or online. Steele and Ersiman (2016) found that for some nontraditional students, academic problems were the reason for dropping out of school. However, for many more, the reasons were non-academic, such as work and family commitments. Because of the wide range of reasons for nontraditional students to leave school, Steele and Erisman noted that it is important for academic advisors to act also as coaches; they need to direct students to appropriate support services. This coaching perspective is consistent with Lowenstein's (2020) approach. Steele and Erisman highlighted the complex issues regarding the adult learner's pursuit of an education.

In online education, researchers have documented the necessity of effective online advising in multiple ways. For example, a quantitative study conducted by Schroeder et al. (2016) examined the level of connectivity students wanted and experienced in an online, asynchronous program. The researchers surveyed 100 students enrolled in a graduate education program at a university in the Midwest. The results indicated that students desired high levels of connectivity with advisors and faculty (52% and 48%,

respectively) but only a few (12%) desired a high level of connectivity with other students. Students indicated that they experienced *high* or *very high* levels of connectivity with faculty, advisors, other students, and their program. However, the highest level of connectivity was between students and advisors. Schroeder et al. noted that there were some variations in the results by age: students 46- 50 wanted the least amount of contact, while those 26-30 desired the most contact. While all the students in this research study experienced *high* or *very high* levels of connectivity with different components of their university, what is most significant is what the students desired. The students' desire for *very high* levels of contact with advisors may suggest a need for involvement with someone who interacts with them throughout their college experience (unlike faculty or peers) and who may help to diminish transactional distance.

Professional advisors or faculty typically assume the responsibilities of advising either on-campus or online. In a quantitative study, Cross (2018) examined the perceptions of 165 graduate students about online advising. The purpose of the study included how students rated advisors regarding communication and knowledge as well as determining if the ratings differed by advisor type (i.e., professional advisor or faculty advisor). Results indicated that students rated professional advisors higher than faculty advisors. Cross offered that this result may be due to the accessibility of the professional advisors and their response to students' inquiries in a timely manner, which reflected a growing trend to use professional advisors instead of faculty advisors for graduate students. The findings are significant in that they underscore the importance of timely responses to student inquiries, which support the need for advisors to have tools available

to them, such as student success software, that will facilitate communication with students.

Technology-Mediated Advising

Technology-mediated advising, or e-advising, is the process in which an academic advisor assists, coaches, or mentors a student using technology tools (Argüello & Méndez, 2019). There are four main categories of software used in technology-mediated advising. The first type of software program reminds students of important tasks, such as registration. The second type of program monitors degree progress, the third type provides an academic early alert system, and the fourth type uses predictive analytics to help advisors identify students that might need help (Velasco, et al., 2020). A review of the literature reflects that more research is needed regarding technology-mediated advising (Kalamkarian & Karp, 2017). Tools typically used in conjunction with the software include telephone, email (the most common), video conferencing, chat/chatbots, virtual appointment scheduling system, and degree auditing tools, all of which can be part of virtual advising hub (Argüello & Méndez, 2019).

Although most of the research about technology-mediated advising focuses on traditional students, Cherrstrom et al. (2019) conducted a study with nontraditional students. The study took place at a public research university with 19 nontraditional undergraduates and nine graduate students, and it examined various educational technology tools. It was framed by theories about learner interactions with instructors, course content, and other students and included a reference to Moore (1989). The purpose of the study was to examine student perceptions of educational technology tools. Data

were collected from templates and discussion forums. Students were asked to describe and analyze the strengths and weaknesses of 125 technology tools. The tools varied by purpose, such as data and file sharing (example: Google Docs/Drive), LMS (example: Blackboard), and research (example: Zotero). Findings reflected that the tools the students selected often enhanced learner-interface interaction. The discussion forums reflected the value of a learning community in facilitating the students' use of technology. Although the nontraditional students valued their interaction with the curriculum and faculty, some were skeptical about learning from other students. However, the graduate students acknowledged the utility of learner-self interaction, and Chaisson et al. speculated that may indicate graduate students have higher self-efficacy than undergraduates. The researchers noted the varied roles of nontraditional students (professional, familial, and academic) and that this may have affected the students' evaluation of the technology tools relative to these different roles. Although this study does not focus on technology-mediated advising, it is significant because it addressed student perceptions of educational technology tools.

Research conducted about technology-mediated advising conducted has focused on student perceptions within specific cohorts. For example, Kalamkarian and Karp's (2017) qualitative study used focus groups as the primary data source to examine student attitudes toward technology-mediated advising systems. Findings indicated that student satisfaction depended on the tasks involved. Students expressed more willingness to use software for straightforward administrative tasks than they were for more complex tasks, like course planning. This study did not specifically address nontraditional students; the

students ranged in age from 16 to 60, but the majority were 18 to 25 years old. Because nontraditional students have a gap in their educational experience, their acceptance of technology-specific process may be lower than students in this study. Ma et al. (2018) surveyed students 21 to 26 years of age about their use of TopHat, a software clicker program for a smartphone-based personal response system used in class. Their findings showed that students generally felt that the software increased their engagement in class and improved their academic performance, which supports Astin's (1999) theory of engagement with possible implications for applications in advising.

Degree Maps. Although some advising software performs a broad range of functions, other types of software focus primarily on helping students plan their curriculum. This software is commonly referred to as degree maps or guided pathways. In their mixed-method study in which they compared the use of degree maps at two community colleges, Schuetz et al. (2016) noted that degree maps are a low-cost, interactive tool that can help students make informed choices planning their curriculum. Making informed curriculum choices can facilitate students graduating on time and prepare for employment opportunities. Data collection consisted of interviews with faculty and student surveys. The significance of the degree maps is that they can show students different pathways in the major that can affect career paths- options that faculty or advisors may not know or easily determined from a school catalog (Schuetz et al., 2016). The challenge of conveying this information to students is particularly understandable as Schuetz et al. noted the ratio of students to advisors could exceed 1000 to one.

Another study about degree maps by Fink (2017) at the City Colleges of Chicago, focused on the implemented degree maps, or as they were referred to in this study, guided pathways, as part of a system-wide effort to improve learning and graduation rates. While Fink's study included interviews with 149 first-year students, a significant portion of his research focused on a subgroup of 48 students who expressed strong opinions about the guided pathways. Thirty-seven of the 48 students held positive opinions about the use of guided pathways. However, some students were concerned that the degree maps would limit their course choices, while others felt overwhelmed by seeing the actual number of courses they would need to complete. As was the case in the study conducted by Schuetz et al. (2016), there was a reference to the large student caseload advisors have. As a result, most students wanted a more in-depth interaction with their advisors when reviewing their plans. Both Schultz and Fink noted the pressure on community colleges to increase the graduation and transfer rates. While neither study focused on nontraditional students, these studies are noteworthy in that they focus on student opinions about one of the main categories of advising software.

Learning Management and Other Systems. Postsecondary institutions vary in the method they use to maintain contact with students using a variety of technology systems. Williams and Whiting (2016) examined the impact of social media (Twitter) and digital media (such as learning management systems or LMS) on student engagement. The researchers surveyed 54 students in three undergraduate marketing classes at a small college in the U.S. The findings indicated that students felt more engaged in their course using a dedicated Twitter feed and an LMS. The results correspond to Astin's (1999)

postulate that the effectiveness of a program is directly related to the program's ability to increase student involvement. In this case, the marketing class curriculum used a popular social media form to enhance its communication with students.

Technology-mediated advising has proven to be effective when integrated into other systems. Hall et al. (2017) conducted a qualitative study, which took place at Utah State University. They examined undergraduates' perceptions about using a course management system, Canvas, used to supplement face-to-face advising. Canvas offers a variety of tools that can inform both students and instructors about academic progress, provide contact information, and note important dates in the university calendar. Using focus groups to gather data, their study revealed that many students were not aware about the system's advising capabilities available in Canvas. While the 40 students in this study represented all the academic departments, only those 18 to 23 years of age participated. Thus, it is unclear if nontraditional students (who may be more motivated to seek out support) were as aware as traditional students of supportive features that might have facilitated contact with academic advisors and potentially increased academic achievement.

Another study that explored student opinions about technology-mediated advising was conducted by Gambino (2017) at Guttman Community College, part of the City University of New York system. Guttman participated in an IPASS initiative and was a recipient of a grant from the Graduate NYC College Completion Innovation Fund using Starfish, a multi-function advising software. The goal was to improve transfer and graduation rates. Gambino noted that in a survey of 54 students, 77% strongly agreed or

agreed that using Starfish increased their motivation to succeed. Sixty-nine percent said Starfish helped them to improve their academic performance, and 78% reported that Starfish was helpful in scheduling appointments with faculty, advisors, and/or peer mentors. Ninety-eight percent of Guttman's students were under 22 years of age. Although this study does not focus on the nontraditional student population, it is included because of its specific focus on IPASS. It is also noteworthy that Gambino mentioned that research on IPASS was limited.

Advisor Interaction. Student interaction with advisors is key to the advising process, yet reliance on communication systems may not reveal students' value of these interactions Burns et al. (2019) conducted a study about the use of e-advising for graduate students earning a master's degree and licensure in school librarianship. Using a convenience sample, data were gathered from 75 students via a survey. The survey included questions about resources the students used to obtain assistance and the methods by which they accessed the assistance. The results indicated that e-advising helped students to feel supported in their program, establish connections, and develop a sense of community. Although nontraditional undergraduates are not part of this research, the study is included here as it relates to Astin's (1999) engagement theory and demonstrates e-advising as an effective method of supporting online students.

Faculty advisors' use of software was explored in a qualitative study conducted by Hart-Baldrige (2020) at a public university in the Midwest with semistructured interviews with 11 faculty in humanities departments. Hart-Baldrige's findings identified advisors' primary responsibilities were ensuring students were meeting

graduation requirements, preparing for future career plans, successfully navigating educational systems, and empowering students. The faculty also noted challenges of advising, which included the use of advising software. Hart-Baldrige's study did not consider the advising needs of specific student demographic groups, such as nontraditional students. However, findings revealed that advising software can be a challenge for advisors, possibly affecting their understanding of student processes, such as registration.

The mode of communication may play a part in the quality and clarity of advisor-student interactions. Junco et al. (2016) explored technology-mediated advising in a quantitative study of 550 students at a large public university. Through online surveys, they examined communication methods used in advising traditional undergraduate students, such as social media and email. While researchers considered variables such as ethnicity and parents' education, they did not address digital advising and age. The results of this study showed that instant messaging and Twitter were the least popular forms of communication with advisors, while email was the most popular, which contradicts the findings of Williams and Whiting (2016), which may reflect the demographics of the study participants.

Early Warning Systems. Other studies examining student attitudes about technology-mediated advising have focused on early alert systems that forewarn advisors and students of potential problems. Marcal (2019) investigated an early alert system as part of the school's effort to increase graduation rates, in a pilot study with five undergraduate courses, including one that had the highest failure rate for the school-

microeconomics. The class was offered in a hybrid format, and students were informed that they would be part of the pilot study via the syllabus and by academic advisors who attended the first class. Throughout the semester, the faculty notified academic advisors about poorly performing students. This notification generated an alert notice to the students, followed by advisor follow-up via a telephone call or email. However, the advisors could not reach 45% of the students, and examination results showed that receipt of an early warning did not improve grades. However, the overall opinion of the early alert system was favorable. Student perceptions of the early alert system were obtained through an anonymous online survey. Among the students who received an early alert, 74% said they became more informed about the school's tutoring resources. Although not demonstrated by exam scores, 57% felt the early alert system helped them improve their grades. This study is an example of favorable student attitudes about technology-mediated advising. However, information about the students' age was not provided, which underscores a void in the literature that specifically addresses the nontraditional student population.

An economics class was also the setting for Main and Griffith's (2019) research study about an early alert system called Course SIGNALS. Using a combination of both student and course data, SIGNALS provided students with a real-time assessment of their status in the class via color codes like that of a traffic signal: green indicated a high likelihood of course success, yellow indicated potential difficulties, and red indicated a high likelihood of failure. Main and Griffith compared the academic achievement of 25,000 undergraduate students enrolled in classes using SIGNALS with that of students

enrolled in identical or similar classes not using it. Student demographic information included GPA, major, gender, race, but not age. Findings indicated that overall, SIGNALS had little impact on increasing grades. However, in reviewing the data by grade distribution, those students in the bottom 25% of a class using SIGNALS received grades about half a grade higher than their counterparts enrolled in the equivalent class without SIGNALS. It decreased the chances of a student earning a D or lower grade. Thus, the impact of SIGNALS was greatest for low-achieving students as it reduced their likelihood of failing. Although SIGNALS had little impact on the grades of students who were already successful, Main and Griffith's research demonstrates that advising software can facilitate achievement for marginal students. Main and Griffith's findings differed from those of Marcal (2019), where early alerts had little effect on academic performance. Main and Griffith's research considered the students' race, gender, and GPA but not their age, which again underscores the need for a closer review of the nontraditional population.

Chatbots. One of the technological tools academic advisors can use are chatbots, and Gosha (2019) conducted a phenomenological study that explored their use in student mentoring. The purpose of the research was to determine if faculty mentoring could be accomplished with chatbots and if students would be satisfied interacting with chatbots and use them in the future. Ten students doctoral engineering students were divided into two focus groups. Chatbot responses were based on interviews from emeriti faculty. They focused on answers to questions such as the balance between teaching, research, and service or desirable personal qualities for an academic career. Findings suggested that the

students felt the responses from the chatbots were appropriate in length, but they also felt that there should be a link at the end of the responses that would lead to additional information. In as much as the chatbot's responses were from emeriti faculty, the students also felt the responses were useful and credible. As far as their intent to use in the future, the students were concerned about the lack of personalization this format offers. However, they did see value on having the chatbots for those who receive no mentoring. While this research focuses on mentoring for doctoral candidates, it is an example of one of the tools used in technology-mediated advising.

Social Media. While advisors use a variety of software programs designed specifically for academic advising, they also use other generic forms of technology, such as social media. Amador and Amador (2017) investigated how students used Facebook to seek academic help. This year-long qualitative study included six undergraduates majoring in education. Data were obtained from a year of Facebook entries, with each study participant averaging 484 posts. Findings indicated that students used Facebook actively (15% of the time) and passively (85% of the time) to get help. Amador and Amador defined active posts as those students made to request assistance or asked a question about an academic matter. Passive posts included those that expressed an opinion about an academic matter. In addition to distinguishing between active and passive posts, the researchers identified other themes: emotional support, academic versus social support, task completion, and community. The posts were categorized into eight domains that represented the relationship between them. The most common type of post was passive, social, and informal, while the least common was active, academic, and

formal. From an academic perspective, Facebook can be used to reach students in need of assistance. However, as the researchers cautioned, it is important to remember the audience that would potentially read an advisor's post. Although this study did not consider nontraditional students, it indicates how social media can complement the academic advising process.

Advisors may use social media to encourage academic achievement. Pai et al. (2017) used Facebook to increase student engagement in a seminar biology class required for sophomores and seniors. The class established a closed Facebook group to promote scientific discussions, and the students were required to join. Participation rates more than the required level were an indication of engagement. In comparing Facebook activity by class level, 78% of the sophomores and 82% of the seniors' activity exceeded anticipated participation. In terms of comments, participation levels were at or exceeded by 67% of the sophomores and 75% of the seniors. Finally, in terms of *likes*, 73% of the sophomores and 90% of the seniors participated at or above anticipated levels. Although this study involved a campus-based curriculum, it demonstrated the use of social media to increase student engagement, which is an important part of persistence. As was the case with Amador and Amador (2017), the findings of Pai et al. demonstrated that technology can be a viable way to engage students.

Generational Differences in Technology Use

There is evidence of generational differences in the way students learn and use technology. Early in the study of differences among generations, Gibson and Slate (2010) found age and generational differences in the level of student engagement at community

colleges. Researchers collected data via the Community College Engagement Survey over three years from a survey of more than 40,000 first-year students attending community colleges in Texas. Gibson and Slate looked at students who were the first generation in their family to attend college as well as those 25 years of age or older. Researchers considered engagement in terms of relationships the students had with faculty, administrative personnel, and fellow students. The results of the survey indicated that nontraditional students had higher levels of engagement than the traditional student population. However, this research does not distinguish between learning formats. So, while it does provide an overall view of nontraditional students, it does not provide insight into the perception of engagement for a nontraditional online population.

Generational differences may reflect student background or prior exposure to technology. The qualitative study conducted by Costa et al. (2019) used focus groups to examine 21 adults in the United Kingdom, who were 60 years of age or older, about their use of technology. The study participants were attendees in a training session on digital literacy. The results showed that the participants were motivated to achieve digital literacy to participate fully in contemporary society, including family members from whom they may be separated. The participants in the study also felt anxiety about the fast pace of their digital environment but felt that the advantages of acquiring technical competency outweighed their anxiety. This study did not deal with post-secondary education, yet it offers insight into the opinions of older adults about their acquisition of technical skills as does the research of Sultan and Kanwal (2017). The purpose of their study was to explore the students' personal attributes that would contribute to their levels

of computer self-efficacy and anxiety. Data were obtained from 500 distance learning students in Thailand, who ranged in age from 24 to 46. Using a Computer Anxiety Rating Scale and a Computer Self-Efficacy Scale, they found that lower computer self-efficacy led to higher computer anxiety. While Sultan and Kanwal considered several attributes, their data suggested that age and gender were the most significant. Specially, findings showed that the older students (those over 41) experienced lower computer self-efficacy and, as a result, higher computer anxiety than the younger students. Similarly, women reported higher computer anxiety and lower computer self-efficacy than men. This study demonstrates that those who have confidence in their computer skills have less anxiety about using computers. Thus, having confidence in one's technology skills is an important attribute for online students.

Culp-Roche, et al. (2020) also conducted a study that explored generational differences with the facility of technology. This qualitative study was conducted with 206 nursing students and 100 nursing faculty to examine faculty integration of technology in the curriculum and the comfort of faculty and students with using technology. The demographic characteristics of the students reflected four generations: Baby Boomers (55-73), Generation X (40-54), Generation Y (25-39), and Generation Z (24 years and younger), while that of the faculty reflected three generations: Baby Boomers, Generation X, and Generation Y. Faculty attitudes and risk-taking behavior were measured with the Teacher Technology Integration Survey, and student comfort with technology was measured with the Technology Attitude Scale. The data gathered from faculty indicated there was little difference across generations in the way faculty used technology, which

Culp-Roche, et al. noted that indicated the faculty understood the importance of using technology. However, the Generation Y faculty noted a higher comfort level using technology than their older colleagues. Across generations, the students did not have significant differences in their attitudes about technology, but the data did reflect that the Generation Y and Z students had more positive attitudes about technology than the older students. This research demonstrates that while the use of technology is appreciated across generations, there may be subtle generational differences in the level of comfort people have using it.

It is important to note that just as there is conflicting research regarding attrition; not all research points to nontraditional students having more challenges with technology. Such was the case for the results of a study on student engagement with technology conducted by Hampton and Pearce (2016). This quantitative study evaluated 216 nursing students in online BSN, MSN, or DNP programs. The students, categorized by their year of birth, were either Baby Boomers (1946-1964), Generation X (1965-1980) or Millennial Generation (born after 1980). Hampton and Pearce considered both program level as well as age in their evaluation of online engagement. Their survey instrument measured engagement in terms of skills, emotions, participation, and performance. The results of their study showed that while there was little difference in online engagement between academic programs, there were differences by generation. Baby Boomers had the highest level of engagement. The next highest group was Generation X, followed by Millennials. Although this study did not focus on academic advising, it is noteworthy in that it provides evidence that learning styles may be shaped by generation.

Like the findings of Hampton and Pearce (2016), Bidian and Evans (2018) found few differences across generations in their study of technology preferences and knowledge sharing. In a quantitative study of U.S. and Canadian managers, Bidian and Evans examined participants' preferences for communication, knowledge sharing, and facility with technology. They collected data via an online survey, and the participants were grouped by age as either Baby Boomers, Generation X, or Millennials. The only area in which Baby Boomers were significantly less proficient was the technology subcategory of blog use. Bidian and Evans noted that because they obtained data from an online survey, the participants in their study may have been more technologically proficient than others.

Other studies, however, show that nontraditional students have more challenges with technology than traditional students. Darney and Larwin (2018) surveyed students enrolled in post-secondary vocational programs in the Appalachian section of Ohio. In this study, nontraditional students were identified as being 35 years of age or older. A total of 205 students, 130 traditional and 75 nontraditional, completed questionnaires. The students were asked about their level of comfort with technology, and this reflected a 32% difference between the traditional and nontraditional students. Seventy-nine percent of traditional students versus 47% of the nontraditional students reported ease with technology. Similarly, when asked to evaluate the effect of technology on their grades, 70% of the traditional students said it had a positive effect, while only 34% of the nontraditional students said it did. Although this study did not focus on academic

advising, it pertains to my research because it addressed students' level of comfort with technology.

Howlett and Waemusa's (2018) research provided evidence of generational differences in the use of technology in professional settings. Their research examined the receptivity of teachers to using cell phones in the classroom. They conducted this quantitative study in Thailand with 55 English as a Foreign Language teachers who were divided into two groups: digital immigrants (those over 35) and digital natives (those 35 and younger). Using a Likert-like scale, Howlett and Waemusa obtained data from the teachers regarding their practice and use of cell phones to promote learning. The results indicated that to varying levels, there was overall agreement about the benefit of cell phones to promote learning. However, digital natives reported a higher frequency of use and ability than their digital immigrant colleagues in promoting cell phones as an educational tool in classrooms. Although the focus of this study was on teachers, this study is important in that it highlights generational differences in the adoption of technology.

Shepherd (2020) conducted a quantitative study focusing on generational differences in learning styles. Data were obtained from 244 surveys, and the participants ranged in age from 18 to 73. They were categorized by generation: Baby Boomers, Millennials/Generation Y, and Generation X. An analysis of the learning styles revealed that the most common preferences for Baby Boomers were reflective, sensing, visual, and sequential. Millennials' preferences were similar to the Baby Boomers. Generation X study participants differed only slightly with active, sensing, visual, and sequential as

their preferred styles. While these research results are counter to other studies, it is important to consider that the research focused on learning preferences within a work, not an academic setting.

Another study examining technology in a professional setting was conducted by Urick (2017). Using qualitative grounded theory to conduct interviews, Urick gathered data from members of a chamber of commerce leadership development program: 28 professionals born between 1976 and 1987. He also obtained data from the same number of professionals born between 1934 and 1965. The study's participants discussed the use of technology in training initiatives. In both groups, the younger professionals were perceived to be more proficient with technology than their older colleagues. In discussing his findings, Urick noted that while there are commonalities within generations, there are also individual differences. What occurs in a workplace setting regarding technology can also occur in an academic setting.

Motivation plays a role in not only academic achievement but also participation. The motivation of nontraditional students was also a variable in Ellis' (2018) quantitative study about online classroom discussions. Study participants ranged in age from 19 to 60 years. Using data obtained from 69 undergraduates enrolled in an educational technology class, Ellis categorized students 24 and younger as traditional and those 25 and older as nontraditional. Ellis looked at the frequency and content of the students' discussion posts coding the content of the posts as either substantive or nonsubstantive. The results of Ellis' analysis showed that the nontraditional students posted more often than traditional students in both categories. In discussing these results, Ellis cited research (Tilley, 2014

as cited in Ellis, 2018) that identified nontraditional students as more motivated and goal-oriented than traditional students. Ellis posited that these characteristics as an explanation for the frequency of the nontraditional students' posts. Ellis noted that nontraditional students might have returned to school after a break or were first-generation college students. In either case, that these students might have needed guidance regarding appropriate content for online discussions. This study highlights the influence of motivation in the behavior of nontraditional students and how it manifests in distinguishing them from the traditional student population.

Just as motivation impacts academic success and differentiates nontraditional students from traditional students, so too does resilience. A quantitative study by Chung et al. (2017) compared the self-reported levels of resilience for 442 traditional and nontraditional students. Chung et al. considered resilience as the ability of the students to overcome a challenging or stressful situation. The authors relied on the students' self-assessment of their status as either traditional or nontraditional, and the most common reason students identified themselves as nontraditional was age. Those students who identified themselves as being nontraditional because of age, employment status, or parenting role had higher levels of resilience than traditional students. As an explanation for their results, Chung et al. noted that nontraditional students enrolled at a university-level had learned to overcome obstacles and, therefore, developed higher levels of resilience. Thus, while nontraditional students face challenges, these adverse experiences can help them develop an attribute that will positively impact their academic careers.

Resilience may be a factor in the course delivery mode. Hixon et al. (2016) examined how the perception of online coursework differed between nontraditional and traditional students. Using a Likert-type scale, Hixon et al. asked 3160 students from 31 colleges and universities in the United States to rate eight online class factors: course overview, learning objectives, assessment and measurement, resources, learner engagement, technology, support, and accessibility. While all the students considered information about assessment to be important, there was a difference in the perception of traditional and nontraditional students regarding what constitutes a quality online class. The nontraditional students placed a greater value on the factors that allowed them an efficient pathway to navigate through a course than did the traditional students. The authors speculated that this might reflect the varied responsibilities nontraditional students have that require efficient use of their study time. Findings underscore the impact of students' workforce experience and maturity which is correlated with a value of efficiency of time`.

Differences between traditional and nontraditional students may relate to course design. Hampton and Pearce (2016) examined nursing students' preferred methods for learning in a quantitative study with 217 students enrolled in either an RN to BSN, MSN, or DNP online program. Data were obtained via a Likert-type scale that asked students to indicate their preferences for different teaching and learning methods. Hampton and Pearce also obtained demographic information regarding age, race, and gender. The students were divided by generation into three groups: Baby Boomers (1946-1964), Generation X (1965- 1980), and Millennials (born after 1980). Overall, the teaching

methods most preferred were videos or PowerPoint presentations, and the methods least preferred were collaborative projects with other students. The students also rated instructor involvement as important. In a comparison of generations, Baby Boomers and Generation X students preferred discussion boards more than Millennials, who preferred simulations. Baby Boomers and Generation X students also preferred asynchronous learning, 84% and 78% respectively, compared to only 57% of Millennials. Hampton and Pearce speculated that this difference is attributed to the Millennials growing up in a culture that allows for total access to resources at all times. This study is included here because it confirms that there are generational influences in how students best learn.

The nature of distance in an online course is another aspect of preference or need that may differ between generations. Iloh (2019) examined online students' perceptions at a community college using Moore's (1993) transactional distance theory. Thirty-four students participated in the study, and their ages ranged from 25 to 51 years. Data gathered highlighted the challenges faced by students new to online study. For example, one student noted that while she was familiar with technology as it pertained to social media, using it in an academic setting was a different experience. Other students noted the importance of being mentally prepared for online study and the isolation of a virtual classroom. Iloh's findings support the need for schools to provide orientation and support for students new to the online platform.

Online students need fundamental technical skills, and this issue was examined in Rotar's 2017 qualitative pilot study of online adult learners, which also used Moore's (1989) theory of interaction. Its purpose was to explore international doctoral students'

perceptions of and readiness for UK- based online study. Semistructured interviews conducted with 22 students indicated that learners preferred clear direction and timely feedback from faculty. However, Rotar also noted that for some students, the student-student relationship was also important in providing a sense of support. Although this was a pilot study conducted with graduate students, it was reviewed because of its use of Moore, and it highlights the critical link between e-readiness and academic success.

Course structure that is supportive may reduce the need for e-readiness. Salazar-Márquez (2017) also examined the structure of the virtual classroom. Using a grounded theory method, Salazar-Márquez conducted eight semistructured interviews with university faculty who instructed digital immigrants (nontraditional students) at a university in Mexico to understand how successful teachers communicated with digital immigrants in the virtual environment and to identify the technical challenges faced by digital immigrants (faculty or students) in online or hybrid classes. Patterns included communication, motivation, and social networks. The faculty reported that even though digital immigrants faced challenges, once they mastered the procedures for managing the online platform, they produced work comparable to or even better than that produced by digital natives. Furthermore, the faculty noted that the maturity and discipline of the digital immigrants offset their initial lack of knowledge about the online platform. Like the findings of Hixon et al. (2016), the data from Salazar- Márquez's research indicate that the maturity of the nontraditional student can help to compensate for their initial lack of familiarity with technology.

Summary

The literature review for this study focused on two main areas: academic advising and nontraditional students. In terms of academic advising, much of the literature focused on attrition. Although the results of some research showed that online students have a greater persistence rate than campus-based students (James et al., 2016; Nadasen & List, 2016), most of the research shows that online students have a higher attrition rate (Gregory & Lampley, 2016). Technology offers academic advisors an efficient method for working with online students (Argüello & Méndez, 2019; Velasco et al., 2020), but few studies focus on nontraditional students who often have a break in their studies (Alschuler and Yarab, 2018) and may have a deficit in their skill with technology (Howlett & Waemusa, 2018).

To provide a context for this study, the literature review included research examining the typical characteristics of nontraditional students as well as some unique needs of some nontraditional populations. Some research indicated that not only do academic advisors play a critical role in student success (Schroeder et al., 2016), there may be generational differences in the use of technology (Darney & Larwin, 2018; Sultan & Kanwal, 2017) which may impede advising efforts. While research has documented that the use of technology-mediated advising generally produces favorable results (Argüello & Méndez, 2019; Fink, 2017; Marcal, 2019), this research has not considered nontraditional students. My study addressed this gap as it focused on the views of nontraditional students. Through a series of in-depth interviews, I explored the

perceptions of nontraditional students about technology-mediated advising. Chapter 3 provides details on the research approach for this study.

Chapter 3: Research Method

There are a variety of software programs available to facilitate technology-mediated academic advising. These programs all share one of four main functions: software used to remind students of a task, software used to plan classes, software that will send an early alert for academic challenges, and software that is capable of predictive analytics (Velasco et al., 2020). Nontraditional students are a fast-growing segment of the undergraduate population. The National Center for Educational Statistics estimated that between 2014 and 2025, there would be a 13% increase in the undergraduate population for students under 25 years old but 20% in the undergraduate population for students over 35 (Hussar & Bailey, 2017). Research shows that traditional students tend to appreciate technology-mediated advising (Fink, 2017; Marcal, 2019), but there is little information about the perceptions of nontraditional students. Therefore, the purpose of this study was to examine the perceptions of nontraditional students toward this approach to advising. Toward that end, Chapter 3 details the methodology. This chapter provides information about my role as the researcher, the approach and method for data collection, instrumentation, recruitment, and data analysis plan. The chapter ends with a discussion about trustworthiness and ethical considerations.

Research Design and Rationale

There were two main research questions for this study:

RQ1: How do nontraditional online undergraduate students over 40 describe their use of advising software as a tool to facilitate engagement and communication with academic advisors?

RQ2: How do nontraditional online undergraduate students over 40 describe the usefulness of advising software in supporting their academic decisions?

Based on Astin's (1999) theory of involvement and Moore's (1993) theory of transactional distance, in this study I examined the extent to which a technology-mediated advising approach impacts student perceptions of connectedness with the learning environment in general and academic advisors specifically. I used a qualitative approach, specifically a generic or basic approach. According to Caelli et al. (2003), the focus of a basic or qualitative inquiry is to understand an event or experience. Merriam (1998) noted that the basic qualitative approach is the most common methodology used in educational research. The basic inquiry worked because I wanted to focus on the perceptions of students regarding the usefulness of the software.

For this study I used a qualitative rather than a quantitative approach. Researchers use quantitative research to understand social phenomena, a process, or perspective (Merriam, 1998). Because the focus of this study was student perceptions of technology-mediated advising and presented no hypothesis, quantitative research was not an appropriate approach. Instead, I explored students' perceptions of engagement and persistence. A qualitative method was appropriate for this study because the focus of the inquiry was on student perceptions; the data collected was personal and thus unique to the individual. Because there is little knowledge of nontraditional students' perceptions about advising software, the goal of this study was to understand the attitudes of this population when they experience technology-mediated advising.

In the qualitative approach, there are a variety of possible research methods. Kahlke (2014) identified the most frequently used qualitative methods: phenomenology, ethnography, and grounded theory. Phenomenology focuses on the essence of individuals' experience about a phenomenon, while ethnology examines the cultural traits of a group, and grounded theory constructs theory from the views of the study participants (Creswell, 2009). Another method, basic qualitative, also called interpretive or generic qualitative (Kahlke, 2014), does not adhere to a specific philosophic assumption or a qualitative methodology (Caelli et al., 2003). Rather, a basic qualitative approach seeks to understand and discover the perspective and worldview of those involved (Merriam, 1998) in a situation or experience. In conducting a basic inquiry, Patton (2015) noted that the researcher uses qualitative methods, such as in-depth interviewing, to ask questions that are not based or framed within a specific philosophical tradition. The purpose of basic qualitative research was consistent with the goal of this research study: to examine online students' perceptions of the effectiveness of a technology-mediated advising platform. Therefore, I used a basic approach as the method to gather and analyze data for this study.

Role of the Researcher

Merriam (1998) stated that the researcher is the main instrument for data collection and analysis in qualitative research and, therefore, is in the position to take advantage of opportunities to capitalize on identifying meaningful information. Therefore, as the sole researcher, I identified participants for the study, gathered data, analyzed it, and articulated findings. Merriam further noted that because they are humans,

researchers can make errors and show bias. That being the case, it is imperative that researchers examine their biases, and it is in this vein that I engaged in self-evaluation.

My professional background is in higher education. I have been an academic advisor for both undergraduate and graduate students in both campus and online formats. It is this experience that was the impetus for my research idea. However, none of the students who volunteered for the study were former advisees; I gathered data from interviewees with whom I had no personal relationship. Instead, the study utilized participants from Walden University's participant pool, FindParticipants.com, and social media. As far as biases were concerned, I want to help students, so I was unaware of any negative biases in relation to the students' experience with advising. To monitor my objectivity and facilitate reflection, I kept a journal of my activities. The journal included procedural information as well as my thoughts and reactions to the research process. I kept in mind Merriam's (1998) advisement that researchers need to have a significant tolerance for ambiguity as the type of research in which I engaged did not follow a set structure. Merriam also noted the need to be sensitive, observant, and analytical. Keeping a journal to document my research facilitated my ability to do this.

Methodology

Participant Selection Logic

The target group of interest for my dissertation was online nontraditional students, male or female, 40 years or older, enrolled in an undergraduate program. I selected study participants for my research using a case sampling method. Patton (2015) describes this method as using research participants who fit a typical statistical or demographic profile.

Characteristics common to nontraditional students include being over 24 years old (Auguste et al., 2018; Ellis, 2019), working full-time, and having a family (Bourdeaux & Schoenack, 2016). Also, although nontraditional students are considered those over 24 years of age (Auguste et al., 2018; Ellis, 2019), I wanted to learn about the perspectives of students who did not grow up with exposure to the internet because research has shown that there are generational differences in facility with technology (Corbin, 2017; Hampton & Pearce, 2016). Therefore, I sought study participants 40 years of age or older, and I relied on their self-identification of age. I recruited participants from Walden's participant pool, FindParticipants.com, and social media.

In their discussion of sample size, Francis et al. (2010) noted that, in part, researchers should consider the complexity of the research questions when determining sample size. They further recommend that 10 participants should be a minimum sample size. After the researcher conducts the initial 10 interviews, they should then conduct three more, and if no new themes emerge, the researcher has reached saturation. Hunter-Johnson and Newton's (2016) research on nontraditional Bahamian students in the United States used 10 participants, and through a series of semistructured interviews, examined the experience of nontraditional students studying in another culture. Guest et al. (2006) also noted researchers should also consider factors, such as the homogeneity of the participant pool and the complexity of the research questions, when determining a research size. Based on this literature, I interviewed 14 people. Gender was not a consideration, nor was race or ethnicity.

Instrumentation

I collected data through synchronous interviews using questions that aligned with the research questions (see Table 1). I anticipated that interviewees would live far from my immediate geographic area, so I did not plan to conduct interviews face-to-face. Ideally, I would have conducted interviews via Skype or Zoom because they are popular applications that have wide-spread accessibility and allow both audio and visual communication. However, because an underlying issue for my research was comfort with technology, I gave interviewees a telephone option. I felt study participants might be more comfortable talking if no one was looking at them. With the consent of the study participants, I recorded interviews. Initially, I used Tape-A-Call when recording telephone interviews but switched to a password protected iPad for the majority of the interviews.

Table 1

*Research Questions, Interview Questions, Connection to Involvement Theory (Austin)
and Transactional Distance (Moore)*

Research question	Interview questions	Connection – involvement theory (Astin)	Connection -transactional distance (Moore)
RQ1	How did you assess your technical skills before starting online classes? And now?	Communication Engagement	Course design, Learner autonomy
RQ2	How would you describe the communication you receive from advisors?	Communication Engagement	
RQ2	When you receive an automated notice from advising, what is your first reaction?	Communication Engagement	Method of communication
RQ2	Which notices prompt a response? Which do you ignore? Why?	Communication Engagement	Interaction
RQ1	How do you interact with academic advisors?	Communication Dialogue Elicits action	Method of communication
RQ1	In what way does your advisor communicate with you?	Communication Dialogue Elicits action	Method of communication
RQ1	In general, what do you think about the responses you receive from your advisor?		Psyche
RQ1	How would you assess your advisor?		Student/advisor interaction
RQ2	Have you ever dropped a class? If so, tell me about that occasion, including communication with advisor	Student's active role in learning	
RQ2	To what extent has your advisor impacted your academic career?		Student/advisor interaction
RQ2	Is there anything you would do to improve the advising department at your school?	Student involvement	

Researcher-Developed Instruments

I asked interviewees open-ended, semistructured questions using an interview guide based on Patton's (2015) discussion of qualitative interviews. The theories guiding my research were engagement (Astin, 1999) and transactional distance (Moore, 1993). In gathering data about student perceptions, the two concepts I explored were: 1) the extent to which students considered the software useful or an annoyance and 2) the extent to which the software prompted students to respond and interact with their advisors.

The interview sessions began with an overview of my research and its purpose, including a brief discussion of consent and confidentiality. Interviews focused on general background questions and then moved to the questions specific to my research (Jacob & Furgerson, 2012). The main questions provided the framework for the initial interview, with follow-up questions used for clarification and to provide examples (Rubin & Rubin, 2012). I also used probing questions to keep the conversation moving and obtain further details. Merriam (1998) noted that interviews pose a complex interaction between the person conducting the interview and the interviewee as each party brings to the interaction their attitudes and biases. Therefore, as the researcher conducting the interview, I needed to portray a safe, nonjudgmental environment for my study participants. Although I used an interview guide (see Appendix) with a semistructured format, I wanted to make sure that the participants had an opportunity to express what was personally important. Accordingly, toward the conclusion of the interview, I asked each person if there was anything they wanted to add to their remarks. Finally, at the end

of the session, I arranged for follow-up contact with the students for any needed clarification of the data.

To ensure content validity, at the end of the interviews, I engaged in member checking by reviewing a summary of my notes with each participant. Patton (2015) discussed the importance of field notes to provide documentation. Therefore, I also made notes about each interview to clarify issues and noted the context in which each interview occurred.

Procedures for Recruitment, Participation, and Data Collection

Recruitment

The initial source of research participants was Walden University's participant pool. This was an appropriate resource because Walden University's undergraduate population is almost exclusively nontraditional students. However, there was an insufficient response from the pool, so I also used FindParticipants.com and Facebook.

Participation

Once I solicited study participants, I contacted volunteers via email. I sent volunteers follow-up contact information in an email that included the Walden University's Institutional Review Board (IRB) notice about participation in research studies. To prepare for the possibility of someone dropping out of the study, I intended to recruit more participants than I might need. Thus, over eight months, I recruited 14 nontraditional students.

Data collection Plan

Once I selected participants, I asked everyone about their preference for interview format: Skype, Zoom, or telephone. Then I collected data from synchronous, one-time interviews. The interviews averaged about 35 minutes. With the participants' permission, I recorded the interviews. To increase the likelihood of the participant giving consent for the recording and to maintain confidentiality, I emphasized how recorded data ensured the accuracy of the interview and that I would keep the person's name confidential and private. At the end of each interview, I informed the participant to expect to receive a summary of my notes as a form of member checking (Merriam & Tisdell, 2016). In addition, I informed each participant about the possibility of follow-up contact to clarify the meaning of any ambiguous comments.

Data Analysis Plan

Although I initially planned to use a transcription service, I opted to transcribe the interviews by listening to the audio recordings. Merriam and Tisdell (2016) noted that transcribing interviews increases one's familiarity with the data. Merriam also noted the option to re-speak the interview for transcription, a method referred to as parroting. Occasionally, I used this method with the dictation function in Microsoft Word. Once I transcribed the interviews, I analyzed them using initial precodes (see Table 1) and used open coding to determine recurrent themes. I organized data using a coding system suggested by Merriam (1998). That is, the coding occurred on two levels. For the first level, I identified themes illustrated with examples and quotes from the interviews and assigned a corresponding code to facilitate organization. As Merriam advised, I coded the

data as I collected it. For the second level, I also coded my thoughts and speculations that pertained to my analysis.

Rubin and Rubin (2012) suggest categories of data analysis, such as events, concepts, and themes. The first research question focused on online nontraditional students' perceptions about the usefulness of advising software in supporting their course completion, and possible thematic categories academic standing, motivation (does the software motivate the students to follow up on tasks), and connection (does the software encourage students to utilize advising services). These categories corresponded to Astin's (1999) involvement theory. The second research question focused on engagement with academic advisors, I organized the data in a format like the categories used by Cross (2018). That is, the categories reflected the range of responsibilities typically managed by advisors: timely communication, knowledge of services, and advisor behaviors. Cross noted that these key categories impact student persistence and satisfaction. These categories corresponded to Moore's (1993) transactional distance theory (see Table 2). I identified discrepant or ambiguous cases and then contacted a few of the participants via email for further clarification and inclusion in the analysis. After coding the data and conducting a preliminary analysis, I used NVivo software to further organize and analyze the data.

Table 2

Interview Questions, Connection to Involvement Theory (Astin) and Transactional Distance (Moore) and Initial Precodes

Research question	Interview questions	Connection - involvement theory (Astin)	Connection - transactional distance (Moore)	Initial precodes
RQ1	How did you assess your technical skills before starting online classes? And now?	Communication Engagement	Course design, Learner autonomy	Time management; technical support
RQ2	How would you describe the communication you receive from advisors?	Communication Engagement		Communication formats (email, voicemail, etc.)
RQ2	When you receive an automated notice from advising, what is your first reaction?	Communication Engagement	Method of communication	Communication styles; follow-up activities
RQ2	Which notices prompt a response? Which do you ignore? Why?	Communication Engagement	Interaction	Follow-up activity
RQ1	How do you interact with academic advisors?	Communication Dialogue Elicits action	Method of communication	Email, named a specific IPASS
RQ1	In what way does your advisor communicate with you?	Communication Dialogue Elicits action	Method of communication	One-way or two-way communication
RQ1	In general, what do you think about the responses you receive from your advisor?		Psyche	Useful/ not useful
RQ1	How would you assess your advisor?		Student/advisor interaction	Communication styles
RQ2	Have you ever dropped a class? If so, tell me about that occasion, including communication with advisor	Student's active role in learning		Consultation with advisor
RQ2	To what extent has your advisor impacted your academic career?		Student/advisor interaction	Knowledge of academic program
RQ2	Is there anything you would do to improve the advising department at your school?	Student involvement		Any suggestions

Issues of Trustworthiness

Trustworthiness is the umbrella term that addresses the overall adherence of a study to established research procedures. The various facets of trustworthiness include credibility, transferability, dependability, conformity, and ethics. In his discussion of trustworthiness for qualitative studies, Shenton (2004) noted the importance of following established research methods, which include helping to ensure the honesty of interviewees. Toward that end, as a supplement to recording the interviews, I took notes and assured interviewees that I would not reveal their identity. Shenton noted that it is appropriate to state the voluntary nature of participating in a research study. Therefore, I reminded interviewees that they may withdraw from the interview at any point. In writing Chapter 4, I also provide detailed information, including the context of the interviews. Shenton noted the importance of providing comprehensive descriptions of the research topic so that readers can understand it and make comparisons to similar situations.

Credibility

Credibility is the degree to which a study measures what it is supposed to measure. In discussing credibility, Shenton (2004) outlined several steps for establishing research credibility. These include developing familiarity with the culture studied, member checks, and triangulation. Because I used a basic qualitative method, I followed guidelines recommended by Merriam (1998), which included gathering data from interviews, observations, or documents. In the case of this study, the focus was on interviews. As both a former enrollment advisor and academic advisor to online nontraditional students, I have almost ten years of experience with this cohort and, as a

result, am familiar with many of the challenges these students face. At the end of each interview, to add assurance of trustworthiness, I engaged in member checking by reviewing the key points of my notes with the interviewee and explained that I would provide them with a copy of the interview notes for review and provide an opportunity to correct any misstatements. I also alerted the interviewee to the possibility of a follow-up interview if I needed further clarification about our conversation.

Transferability

The transferability of a study is the degree to which its findings are applicable to a wider population (Shenton, 2004). Strategies that establish transferability include providing detailed, thick descriptions of the research process, which includes data collection, and details about participant selection. My scope was narrow; thus, findings may have limited transferability to similar populations. There are more than 120 companies that produce advising software programs (Kalamkarian et al., 2018). Rather than focus on one brand or limit the study to students at one school, this study drew participants from different schools, using different systems, which provided a variety of student perspectives about different software programs.

Dependability

The dependability of a study is the extent to which, if another researcher followed the same procedure, results would be like the original findings. That is, the research design of the initial project is a prototype for a subsequent research project (Shenton, 2004). To provide dependability, Shenton stated that the research report should include detailed information about the design, procedure for gathering data, and an appraisal of

the procedure selected. To provide dependability, I kept very detailed notes for each phase of my research, including a log of all research activities. Thus, should another researcher wish to engage in a similar inquiry, my study is a framework or example for future studies.

Confirmability

In qualitative research, confirmability is the counterpart to objectivity. The results of a study must reflect the experiences and ideas of the research participants, not the characteristics and preferences of the researcher Shenton (2004). A critical step in achieving conformability is to maintain detailed notes on every aspect of the research. Following these notes would allow another researcher to repeat the original study. In addition, researchers must acknowledge their biases, and engage in strategies that allow them to maintain their objectivity, such as reflexivity. Toward that end, I acknowledged any biases that influenced the procedures I used in my research. In addition, I followed suggestions received from my committee.

Ethical Procedures

This study adhered to the procedures required by Walden University's IRB (approval number 11-11-19-0424938). I recruited study participants through Walden's participant pool and social media. They received a copy of the informed consent document, which included information about risks, possible benefits of the study findings, the voluntary nature of their participation, and the ability to cease participation at any time.

I attempted to minimize the chance of participant withdrawal by making sure participants knew they had a choice of interview formats: telephone or video (Skype or Zoom). By providing this choice, I hoped to create a non-threatening environment in which participants felt comfortable discussing their views. To compensate for the possibility that someone may decide to withdraw from the study, I conducted 18 interviews (see Appendix). However, during their interviews, I learned that three of the study participants did not meet the study's criteria, and the recording for one interview was flawed. Therefore, I have omitted data obtained from those students. I obtained electronic consent to record each interview via email and asked that the participant keep a copy of the consent. Before signing the agreement electronically, the participants had an opportunity to ask me questions about their participation in this study.

I also informed study participants that I would keep their identity confidential. I assigned a number to each participant to protect anonymity. To facilitate transcription of the interviews, I transcribed the interviews myself. I stored data electronically in a password-protected database to which only I will have access. I will store data for 5 years, after which time I will destroy it.

Summary

In Chapter 3, I discussed details about the research methodology. Highlights included the selection of a basic qualitative research method rationale. It also included a discussion of the procedure for documenting the data collection. Because the goal of this project was to explore the perceptions of nontraditional students toward technology-mediated advising, I used in-depth interviews to discover the extent to which technology

influences the relationship between students and advisors. In interacting with participants for this study, I provided a comfortable, non-threatening interview environment. Toward that end, participants had a choice of two interview formats: phone or video call.

As a researcher my objective was to conduct my inquiry in an ethical manner that adhered to established academic protocols. I was aware of personal biases and kept an audit log of my activities. As a former academic advisor, I have an established history of working with nontraditional students, and it is my background that was the motivation for this project. Chapter 3 ends with a discussion of the parts of established qualitative research procedures, including engaging in member checking to establish credibility and following an audit log to establish dependability. Table 1 provides an overview of the correlation of the research questions to involvement and transactional distance theories. I followed guidelines stipulated by Walden University's IRB. In Chapter 4, I provide details of the data collection results.

Chapter 4: Results

The purpose of this qualitative study was to explore the perceptions of nontraditional students about technology-mediated advising. The focus was students' perceptions of advising software's usefulness in facilitating engagement and communication with academic advisors and the extent to which they used it to make academic decisions. The goal was to answer the following research questions:

RQ1: How do nontraditional online undergraduate students over 40 describe their use of advising software as a tool to facilitate engagement and communication with academic advisors?

RQ2: How do nontraditional online undergraduate students over 40 describe the usefulness of advising software in supporting their academic decisions?

In this chapter, I restate the two research questions, provide information about demographics, discuss data collection, analyze the data, review the process for trustworthiness, and discuss the results.

Setting

The selection criteria required participants over 40, who were undergraduates in U.S. institutions, in any program of study, and taking online classes. I recruited them through three online services: Walden University's participant pool, Findparticipants.com, and Facebook. I conducted the interviews remotely from my home office. While I gave each participant the choice of Skype, Zoom, or telephone, all 14 chose telephone. To keep the participants' identities confidential, I used numbers rather

than their names. After the interviews were completed, I contacted a few of the study participants via email to clarify some of their comments.

While it is difficult to ascertain, there was one condition at the time of data collection that may have influenced participants or their experiences as a college student. I conducted interviews during the initial months of the COVID-19 pandemic; only two interviews were conducted prior to the in-person restrictions triggered by the pandemic. This may be significant because all the study participants completed their academic term in an online format. While most of the study participants were not impacted by this change because they were studying online to begin with, for some students, this was a new format.

Demographics

Data collections involved 14 interviews with college students. All met the study's inclusion criteria: 40 years of age or older and working on an associate or bachelor's degree in an online format. The participants varied in major area of study, degree objective, and type of institution they attended (see Table 3).

Table 3*Participant Demographics*

Participant	Age	Gender	Major	Year	Degree	School type	Reported use of software
S1	40	F	Business	2	AA	For-profit	Reminders
S2	57	F	Behavioral Science	4	BA	State university	Reminders
S3	42	F	Forensic Psychology	3	BA	Public college	Reminders & Degree Planning
S4	41	M	Business	1	BA	For-profit	Reminders
S5	64	F	Gerontology	2	AA	Community college	Reminders
S6	50	F	Communications	4	BA	State university	Reminders
S7	47	M	Psychology	2	AA	Community college	Reminders
S8	43	F	Nursing	2	AA	Community college	Reminders
S9	44	M	Architecture	1	BA	State university	Reminders
S10	40	F	Music	1	BA	State university	Reminders & Degree Planning
S11	43	F	Social Work	3	BA	For-profit	Reminders
S12	43	F	Criminal Justice	4	BA	For-profit	Reminders
S13	56	F	Human Services	2	AA	Community college	Reminders & Degree Planning
S14	41	F	Accounting	1	BA	For-profit	Reminders

Data Collection

Data collection took place over 8 months, longer than initially anticipated. I planned to recruit from the Walden University participant pool, the Facebook page of nontraditional student groups at various colleges, and FindParticipants.com. However, only five participants volunteered from these resources. To increase interest in the study, I sought and received IRB approval to offer an electronic gift card to those who completed the interview process and to advertise nationally via Facebook. Combining these strategies resulted in nine more volunteers.

Data collection involved interviews with 14 participants via telephone. With the study participants' permission, an audio recording was made of each interview using Tape-A-Call. Although not initially proposed, to ensure a viable recording, I used a backup recording system with a password-protected iPad. A few interviews were also recorded on a Sony stereo recorder. Having a backup system was a prudent option as Tape-A-Call often cut off before an interview was completed.

Data Analysis

Data analysis followed the process described by Merriam (1998). That is, coding occurred on two levels. In the first level, I analyzed using precodes (see Table 4), and in the second level, I considered my thoughts and speculations that pertained to my analysis. I developed precodes to align with the research questions, frameworks, and critical attributes or activities integral to advising activities, such as communication formats and styles. I transcribed each interview verbatim. After transcribing the interviews, I compared the dialog to the precodes to move from coded units to themes. Initially, I did this electronically, but per the recommendation of Saldana (2016), I switched to printed copies. The initial review of data focused on identifying precodes, and subsequent reviews revealed emergent codes that pertained to activities common to the advising process.

The following emergent codes were identified from the data: technical self-assessment, course registration system, LMS, references to age, students' confidence in advisors' knowledge, other behaviors, and suggestions for change. Although these codes did not pertain to all study participants' data, they reflected a pattern across many

participants and, therefore, warranted being coded. Table 4 illustrates the codes, themes, and their relationship to the research questions.

Table 4

Precodes, Codes, and Themes: Relationship to Research Questions

Precodes	Codes	Themes	Research question
Technical support, Time management	Before/after online study Self-awareness of age Time-management: Work/school/life Balance	Self-assessment of technology skills	RQ1
One-way or two-way communication	Ease of use Mode or channel	Communication	RQ1
Follow-up activity	Going above and beyond Disconnect	Confidence in advisors' knowledge Other advisor Behaviors	RQ1
Knowledge of academic program	Registration/add drops	Academic planning	RQ2
Communication formats	Email, phone, Zoom, bot Timeliness	Communication formats Types of notices Response times	RQ2 RQ2

Evidence of Trustworthiness

As noted in Chapter 3, trustworthiness is a broad term referencing a study's overall adherence to established research procedures. It encompasses the subcategories of credibility, transferability, dependability, and conformability. In this study I adhered to research guidelines by following the general structure for conducting the interviews, as discussed in Chapter 3. Each study participant was assured in writing as part of the consent process and verbally at the start of the interview that their identity would be kept confidential.

Credibility

To ensure credibility, I audio recorded each interview and transcribed them verbatim. Although I obtained each study participant's written authorization to record the interviews, I also reminded them at the start of the interview that they were being recorded. Conducting member checks was a significant part of my establishing credibility. At the conclusion of each interview, I gave a verbal summary of my notes, and asked the students to let me know if I had made any mistakes. Each study participant also received a written summary of my notes, along with a request to inform me of any discrepancies. Another part of establishing credibility is being familiar with the subject matter being researched and being aware of biases. Toward that end, I took notes about my thoughts on the interviews, practicing what Merriam and Tisdell (2016) called reflexivity.

Transferability

This study had a small sample, which limits the degree to which the findings can be generalized to a larger population. However, I sought to examine the perspectives of a diverse group of nontraditional students by soliciting study participants nationwide from the Northeast, Midwest, Rocky Mountain, Northwest, and Southwest regions of the United States. The Facebook advertisement targeted students in the following states: California, Colorado, Illinois, Massachusetts, New Jersey, New York, Texas, and Washington. In addition, the study participants attended different types of higher learning institutions: community colleges, city and state universities, and private schools. I intended to solicit opinions about three categories of student success software: reminders,

degree planning, and early warning. However, I did not find any study participants who reported that their school used an early warning system. So, there are no findings for that category subject to transferability.

Dependability

I maintained a log of my research activities to document the research process and any changes made. This is particularly significant because my initial plans for recruiting study participants were not as successful as anticipated. Per Shenton (2004), my notes do contain an appraisal of each of my recruitment plans. However, once I did find study participants, I used the same procedure to gather and document the data.

Confirmability

To uphold the idea of confirmability, qualitative research findings need to reflect the study participants' perspective, not the researcher's. Shenton (2004) noted that the acknowledgement of researcher bias could help to foster objectivity. Prior to starting the interview process, I did not think I had any biases, but the act of documenting my thoughts about the research process as well as individual research participants helped me to understand that I did. Acknowledging my biases contributed to my objectivity in the analysis of the data.

Results

The purpose of this research study was to examine the perspectives of nontraditional undergraduate students about the software used to communicate with academic advisors and to explore if those students felt the software helped them make academic decisions.

Several themes were developed from the precodes and emergent codes. I identified self-assessment of technology skills, confidence in advisors' knowledge, and LMS as themes for the first research question. For the second research questions, I identified communication formats, response times, and academic planning as the themes. In this section, I will review the codes that support each theme and relate the theme to the corresponding research question.

Research Question 1

The first research question focused on how nontraditional online undergraduate students over 40 described their use of advising software as a tool to facilitate engagement and communication with academic advisors. Four themes answered this question: self-assessment of technology skills, confidence in advisors' knowledge, communication with advisors, and LMS.

Theme: Self-Assessment of Technology Skills

Because basic facility with technology is a prerequisite for successful online study, each student was asked to assess their computer skills before beginning their online studies and as current online students. This discussion revealed not only what the students thought of themselves, but it also showed that as a group, their computer skills ranged significantly. Furthermore, in discussing online education, some of the students discussed how they felt their age affected their interface with technology. The students' assessment of their technical skills is germane to the research question because it influenced the extent to which they used their school's software to communicate with their advisors.

The Range of Skills. The role of technology in fostering communication with advisors is the cornerstone of this research study. Accordingly, I asked each study participant to discuss their technology skills before attempting online study as well as their current facility with technology. The students' skills before attempting online study ranged considerably. Five of the students considered themselves proficient, using words such as "savvy" and "real good" to describe their computer skills. Four of the students considered themselves at an intermediate level, using words such as "moderate" and "comfortable" to describe their skills. The remaining five students were neophytes. All but three of the students noted that online education affected their technical skills, but they differed in the way and the degree to which they were affected. For example, before starting her online program, S1 described herself as "pretty tech savvy." Although, she noted that she had to re-learn Excel. Similarly, S10 described herself as being "more than proficient" but noted that online study required her to learn web-conferencing tools. The most significant impact of online study was described by the five students with beginner-level skills. Before studying online S2 said, "I did not know a lot of stuff on how to do stuff on the computer," and while she is still challenged by computers, she is now "a lot more confident." Similarly, S5 stated, "In the beginning, I had no computer skills at all," but after studying online, "I feel good." After five months of online study, S7 stated, "what used to take me an hour, takes me about five minutes to do." Thus, for these students who had little or no technical background, learning in an online format improved their computer skills.

Awareness of Age. In discussing their self-assessment of technology skills, a few students described how their age distinguished them from the traditional 18 to 24-year-old undergraduate population. S13 said, “Being an adult learner, I think the whole technology thing is new because when I went to school, everything was manual.” S7 shared the same sentiment as he felt that his younger classmates had a basic understanding of technology that he lacked. He acknowledged his school had an online system set up for advising, but he did not know how to use it and preferred to make in-person appointments for assistance. When speaking of his school’s website, S7 said, “Their web page is pretty complicated for me, it is.” Although not for all nontraditional students, becoming comfortable with using technology can influence how some students choose to contact advisors and, thus, influence the student-advisor relationship.

Theme: Confidence in Advisors’ Knowledge

This theme focuses on the extent to which the study participants felt their advisors are knowledgeable about degree requirements. The degree to which the students felt their advisor could help them achieve their goals influenced their willingness to consult them, although they did vary in terms of their use of software to communicate with advisors.

Academic Requirements. A key component in the advisor/advisee relationship is the student’s confidence in the advisor’s knowledge about academic requirements. In this study, 11 of the 14 students commented to some degree on their advisor’s knowledge about program requirements. Most felt that their advisors were knowledgeable. As S12 put it, “They know their stuff.” S13 discussed how her advisor took extra steps to allow her to take a capstone class out of sequence, thus saving her time in completing her

degree requirements. Similarly, S2 noted how her advisor's degree audit early in the school year revealed that she lacked a class. Thanks to the advisor's action, S2 was able to add the class and keep on schedule for graduation. Several students noted how their advisor exceeded their expectations to be helpful. The COVID-19 pandemic impacted S11's fieldwork requirements, but she noted that her advisor did a great job keeping her informed about program changes. The same student stated that her advisor was also instrumental in helping with a financial aid issue. Email was the most common way students communicated with their advisors, either via the school's portal or independently through their school email address.

Other Behaviors. Most students cited examples of instances when advisors provided assistance beyond what would be considered their regular responsibilities. For example, S6 noted that when her advisor went on maternity leave, she provided her personal cellular number before doing so. S7 and S13 noted how their community college advisors researched four-year schools to which they might transfer. In these instances, although they were taking classes online, the students felt their advisors went beyond their typical responsibilities to help them.

Not all students felt that their advisors were advocates for them, however. When asked to assess the extent to which her advisors had affected her academic experience, S5 said on a scale of one to 100, she rated her advisors at 20. She further noted, "...I sought help, but I didn't feel that, um, I didn't feel that they really put much effort into it." S9 provided another example of a disconnect between an advisor and an advisee. He was a campus-based student before the pandemic. When he contemplated dropping a class, he

had a web conference meeting with his advisor. In the meeting, S9 reported that he asked his advisor if the course in question would need to be repeated and was told it would not. Later, after he dropped the class, S9 found out that he would have to retake the class. Ultimately, S9 dropped two classes, but it is important to note that in his overall assessment of the advising department at this school, he stated, “they are a bright, energetic group of individuals...they absolutely do care about the program that they advise with.”

Theme: Communication with Advisors

The first research question of this study focused on the extent to which advising software facilitates student contact with advisors. Therefore, the students were asked to discuss how they initiated contact with advisors and their chosen methods for doing so. The data obtained from their comments focused on communication formats.

Technology influenced the speed, mode, and ease of use by which students and advisors communicated. Students who gave favorable assessments of their academic advisors typically noted the speed with which their advisors responded to questions. Ten of the students specifically praised their advisor for being responsive to inquiries, typically within 24 hours, and this speed was facilitated by technology. In discussing her advisor’s response time, S11’s response was typical of others, “If I was using email, it was always within 24 hours.” The most common method for communicating was email. However, other forms of communication included web-conferencing, instant messaging, and text. The speed with which her advisors responded to her inquiries influenced how S10 communicated with her advisors. She sent text messages to two of her advisors, but

she sent emails to her third advisor. Students reported valuing timely responses and expected quick responses, perhaps because of their own technology use.

In other institutions, students determined how they communicated with advisors. In contrast to S10's school, where the speed of an advisor's response dictated the method of communication, at S4's school, the student's preference determined the method by which they were contacted. Although S4's school sent reminder notices to its students, students also had an opportunity to select their method of direct contact from advisors: telephone, email, or web-conferencing. S4 requested that his primary mode of communication with advisors be via telephone because advisors reached out to students as late as 9:00 PM, which did not conflict with his work schedule. The other communication formats his school offered required students to make appointments earlier in the day. Besides offering students a choice for their primary mode of contact, S4's school also used a smartphone application that facilitated communication with advisors.

Theme: Learning Management Systems

Interwoven into the students' discussion of the student success software was mention of their school's LMS because it often provided a portal that students could use to communicate with their advisors. In addition, at some schools, the software available to students included a smartphone application that provided additional options for students to contact their advisors.

An Online Classroom Foundation. An integral piece of attending school online is the LMS, which provides a portal for the decimation of information about a class, including the syllabus, instructor's contact information, and general announcements. The

LMS may also provide a link to other school resources, such as the library, school email accounts, and academic advisors. Thus, the LMS affected the overall learning environment for online students, and for many, the LMS was a factor in supporting student outreach to advisors via the advising software.

Eleven of the 14 students discussed the ways in which the LMS affected their academic experience. Students reported how using the LMS helped them assess their facility with technology as they learned how to use the system and what it could do. However, they varied in their evaluation of their institution's LMS. S7 said it took a month for him to figure it out, and S8 similarly assessed it as "a little confusing." Initially, S12 thought her school's LMS was "overwhelming" but noted that the system also provided instructional videos of how to use it that she could access during her first year of enrollment, an important option because she did not use all the system's features right away. Other students, however, used the words "straightforward," "simple," and "convenient" to describe the LMS. Thus, through experience with the LMS, students acquired technical skills.

Smartphone Applications. Five of the 14 students noted that their school used a smartphone application. S6 noted, "There's a link within the app that takes you straight to advisors." She considered the application "very helpful." Similarly, S13 also noted that having the application made it convenient to be in contact with her school when she was away from home. The students in this study wanted contact with advisors to be timely and convenient.

Summary of Results for Research Question 1

The first research question explored student opinion of software used to contact advisors. Student-reported data reflected that the type or brand of software varied by school, but all the schools provided students with an option to send email through the school's student portal. Student opinions about the use of their school's platform varied considerably.

Four of the 14 students, S4, S5, S7, and S13, did not use their school's software platform to contact their advisors, although their reasons for not doing so differed. S4 attended a for-profit university, and as a new student, the school's advising team contacted him regularly. At the time of our interview, he had not attempted to reach out to his advisors. S5 was unaware that she could consult with academic advisors. S7 was aware that his school had a platform for students to use when contacting advisors, but he did not know how to use it. He stated, "I really don't know how to contact them other than to just go to the school." S13's school has a link through her student portal, but she did not use it because her advisor did not use it; they communicated via email independently of the link. S13 explained that she thought it took too many steps to get to the link, which led to the same email if she were to use the link. Logging in directly to her email account was more convenient. Because these students did not reach out to their advisors via software platforms, they did not express their opinions about it.

The other ten students used their school's options for communicating with advisors to varying degrees. S3 had used her school's portal only on an occasional basis because she did not consult advisors often; she had not seen an advisor during the last

year. Although her school, a large urban university, offered a dedicated platform that students could use to contact advisors, as mentioned earlier, S3 did not like her school's policy of using multiple advisors; she preferred to work with one specific advisor. S3 said, "Every time I go there, I spoke to somebody else- I have to tell my story over and over again, and they will not know what I need." Instead, although an online student, S3 (before the COVID-19 pandemic) would go to her campus and try to see the same advisor each time. S11 said her school offered an option to use instant messaging for advisor contact. She stated, "I like having those different options, depending on my time." However, she went on to say, "I find those helpful, but just out of my own comfort level, email is the easiest and most effective for me." S10's school offered its students multiple options for contacting advisors, which she said had made her learning experience "so much easier" she continued, "Back in the old days, you would actually have to phone the advisor or go meet them and work around your schedule." Although new to online learning, when asked for her opinion of the LMS to communicate with her advisor, S14 said, "I think it is user-friendly and quite easy to use for a first-timer like me."

One type of student success software is the kind that identifies students at risk for failure, an early warning system. None of the study participants reported receiving any alerts about their academic performance. However, one student, S14, used her school's LMS to communicate with her advisor to request tutorial assistance. S14, an accounting major, described using the school's platform as a convenient way to contact the advisor. Thus, the opinion about using a dedicated software platform for communicating with

advisors was on a continuum. The convenience of accessing advisors through a platform, and the way students were assigned to advisors, affected the extent to which students used their options.

Research Question 2

The second research question focused on how nontraditional online undergraduate students over 40 described the usefulness of advising software in supporting their academic decisions. As was the case for Research Question 1, several themes also emerged for the second research question: formats for communicating with students, response times, and academic planning.

Theme: Formats for Communicating with Students

As noted in Table 3, all the students attended schools that used software that sent reminder notices, and these were sent via student email. Although not specific to student success software, the telephone was also an option available at all the schools. Eight of the 14 students noted at least one occasion when they contacted an advisor by telephone, and six of the students indicated that their advisors reached out to them via telephone. Three students noted their school had an option for web-conferencing, but only one, S9, had met with an advisor via Zoom. Two students noted the use of a chatbot as part of the software. S11 did not find it useful because, "It just never seems to know what I'm trying to find." However, in contrast, S12 found a chatbot useful.

Types of Notices. As noted above, when advisors reached out to students, it was to send reminder notices. The most common type of reminder notice pertained to course registration, followed by notices about important deadlines, such as the last day to drop

classes. S1 and S4 attended schools that would send reminder notices about homework assignments. S7 received notices about tutoring sessions at the student center. Although she is an undergraduate, S11 said, "...sometimes I'll get information about masters. I don't necessarily think that's bad because, you know, I may continue on to a masters." She went on to add that she followed up on these notices by attending information sessions.

Theme: Response Times

The speed with which advisors responded to student inquiries was an important part of the students' satisfaction with the advising system. As S2 stated, "When you've got a problem, you don't want to wait two or three days stressing about it." Again, email was used at all the schools to communicate with students. S2, S8, S12, and S10 noted that their advisors usually responded to emails in less than 24 hours, while S6 noted that her school asked students to give advisors at least 24 hours to respond. S12 said, "They are busy, but they still respond in a timely manner." Similarly, S2 said her advisor was "...very good about getting back to me." However, S3, who was generally critical about the way her school structured their advising program, said responses to student inquiries typically took one to two weeks.

While student success software facilitates communication with students, the students in this study noted that there is a need to have a measured flow of information. S4 described the reminder notices he received as 90% effective. When I inquired why the notices were not 100% effective, he said, "... sometimes they send 10 in a day, and it's easy to get confused- you have so much stuff to do sometimes." Similarly, when his

advisor called him, S4 said, "We talked for almost two hours, which was way too long!" When speaking favorably of her school's advising system, S8 noted, "I don't get bombarded with useless information." S9 and S11 also express similar sentiments about not having an excessive number of notices from their advisors.

Theme: Academic Planning

Student responses to the usefulness of advising software included a broad range of academic planning activities, such as registering for classes, determining degree requirements, and submitting assignments. In some instances, the technology complemented input from academic advisors, while in others, students used it independently of an advisor. From their discussion of how the software supported their academic decisions emerged the subthemes of registration, degree planning, and tutorial assistance.

Strategies for Registration and Add/Drop. Course registration is a common activity for academic advisors. Many of the students in this study, despite their online status, met with advisors in a face-to-face setting to determine the class or classes they should take for an upcoming term. S7 said, "It's a little confusing picking my classes because that is online," suggesting that a face-to-face advising session was preferred. Despite his full-time work schedule, he opted to make an appointment on campus to see an advisor. Similarly, the school attended by S8 had a designated day during which all students were required to come to school (before the COVID-19 pandemic) and meet with an advisor to register for classes. S8 stated, "I love advising day! I like the fact that I can go in and physically sit down and talk to a person to make sure that I am on the

straightest route to my end game." Although she was an online student, S13 also had an annual face-to-face meeting with her advisor to plan her course schedule. In these situations, the student sat with an advisor logged into a school database to register students. So, although there were platforms that allowed students to use technology to interact with their advisors, face-to-face interaction was preferred by some students.

Four of the 14 students interviewed noted that they had dropped at least one class. Of this group, three, S1, S3, and S9, did consult with an advisor before withdrawing from their classes. However, the other student, S13, indicated that she could drop her class directly from the student portal. Although they had not withdrawn from any classes, S4 and S8 noted that they were aware of the procedure for doing so. Their respective schools allowed students to drop classes via the student portal independently of consultation with an academic advisor.

Degree Planning Software. One of the main types of student success software is designed to help students determine the timing and order for enrolling in classes, an activity typically managed by academic advisors. Three of the students in this study, S3, S10, and S13, reported that their school used degree planning software. However, each student used it differently.

As a transfer student who consulted with her academic advisor very infrequently, S3 found degree planning software helpful for keeping track of the classes she had taken, her grade point average, and the classes she still needed to complete her bachelor's degree. She found it simple to use, and because she did not like the way her school structured advising appointments, it helped her avoid contact with advisors. In contrast,

S10, who had frequent contact with her advisors when discussing the software, said, "it took a lot of the guesswork out of it for me." However, she noted that the software would not allow her to plan all the classes needed for her anticipated triple major, although she added, "but that's what the academic advisors are for." So, she used the software to complement her communication with her advisors. Finally, S13's school had a field in the school's LMS that allowed students to determine their remaining classes. Still, she preferred to use a hard copy of the curriculum that she obtained from the advising department and consult face to face with her advisor because she is "old school." Thus, these nontraditional students varied in the way they interacted with advisors and the software available to them.

Summary of Results for Research Question 2

This question addressed the students' thoughts about the usefulness of student success software in supporting their academic decisions. All the study participants reported that their school used software that generated reminder notices, and a few attended schools that also used degree planning software. Overall, students found reminders about academic resources, important dates, such as deadlines for registering for an upcoming term or dropping a class, helpful in supporting their academic decisions. For example, S7 noted that he received notices about the availability of tutors at his school's study center, which prompted him to use that resource. Similarly, S4 and S1 noted their school's practice of sending reminders about upcoming due dates for assignments. They both felt the reminder notices helped them stay current with their homework assignments, a challenge given their busy schedules. S1 noted that sometimes

she is so busy, she will forget due dates. She noted, "... there's weeks where I'm a mom, a wife, a full-time worker- so it comes in handy." S4 noted that when he initially started his program, he forgot to submit an assignment and as a result lost points off his grade. He found the reminders to submit his assignments useful.

The reminder notices also helped students in planning ahead. S11 noted that she would often receive reminder notices about graduate degree seminars, which she found "very helpful" because it encouraged her to think about furthering her education. S14 noted her school's system of reaching out to students helped her to plan. She said, "OK, they will tell me about time for tests, if there are any updates on the courses that I'm taking...It allows me to plan ahead. Because I love planning for activities early in advance, so this is encouraging me to work hard and finish the course." In describing the efficacy of reminder software, students often used the words, "helpful," and "very helpful." Thus, the consensus was that reminder software supported the students' academic decisions. The responses from the students in this study showed that the software helped students make decisions about submitting assignments on time, encouraging them to seek assistance, think about furthering their education, and it facilitated academic planning.

Summary

The use of student success software by academic advising departments facilitated contact with students, although student use and opinion of the software did vary. Research Question 1 focused on how students felt about the software used to contact their advisors. While the majority did find their school's resources, such as through the LMS or

smartphone applications, useful, some students did not use these resources, either because they lacked the technical know-how or because they felt other methods were more convenient. Research Question 2 focused on student opinion of the software used by advisors to contact them. Again, there was variation of opinion, but overall, students found reminder notices useful in helping them stay current on assignments and encouraging them to use available academic resources. In Chapter 5, I interpret these findings, discuss the study's limitations, make recommendations, and note the implications of this study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this study was to explore the perceptions of online nontraditional students over 40 years of age about the software used for technology-mediated advising. In the study I examined how students perceived the use of software to contact their advisors and their opinion of the software in supporting their academic decisions. I conducted this study because, as the literature review showed, most research about student success software focused on the traditional student populations (Junco et al., 2016; Williams & Whiting, 2016). However, given the growing nontraditional student population (Hussar & Bailey, 2017), exploration of this group, whose formative years took place before the introduction of the internet, was warranted.

Findings for this basic qualitative study came from 14 nontraditional undergraduate students over 40 years of age through semistructured telephone interviews. The students attended different postsecondary institutions throughout the United States, and they were pursuing degrees in various subjects. Student use of advising software to contact academic advisors varied, as did the students' initial facility with the internet itself. As noted in Chapter 4, a thematic analysis of the data revealed that the students' use of software to contact advisors was influenced by their facility with technology and convenience. LMS and smartphone applications influenced the students' assessment of the software. For those students who had access to software that enabled them to plan the order in which they should take their classes, there was also variation. However, the students were more consistent in their opinions of the software advisors used to contact them, and they were generally favorable. The format of communication as well as the

timing of it were important factors in the students' assessment of their advisors' outreach. In this chapter, I provide an interpretation of my findings, discuss the limitations of the study, make recommendations, discuss the implications, and state my conclusions.

Interpretation of the Findings

The characteristics, behaviors, and opinions of the 14 students in this study reflected prior research discussed in Chapter 2. They fit the definition of nontraditional students in age and because they had a gap between high school graduation or the equivalent and start of postsecondary education. As in prior studies (Woods & Frogge, 2017), most participants had employment obligations, and some had parental or caregiving responsibilities (see Gregory & Lampley, 2016). The desire to either change careers or advance in their current career was a motivating factor shared by all the students (Bohl et al., 2017; Marrero & Milacci, 2018). Although military veterans are a subgroup of nontraditional students (Osborne, 2016; Southwell et al., 2018), this group differed from prior research studies because none of the students noted that they had a military background.

Different criteria can be used to distinguish between students who dropped out of school or just briefly stepped away from their education. Consistent with Steele and Erisman's (2016) findings, the students in this study followed a circuitous path to pursue their education. The combination of school, work, and familial responsibilities require planning and discipline. Time management has consistently been identified as a factor in a nontraditional student's persistence (Conceição & Lehman, 2016; Su & Waugh, 2018), and it was also cited by students in this study. The combination of working and school

was cited as a challenge by most of the students in this study. The data obtained from the research participants corroborated findings of similar previous studies (Bourdeaux & Schoenack, 2016; Rabourn et al., 2018).

Nontraditional students' facility with technology was a critical factor in their use of it. As in previous research studies (Culp-Roche et al., 2020; Darney & Larwin, 2018), these students ranged in their technical abilities, but all acknowledged the advantages of convenience and flexibility of online learning (Gregory & Lampley, 2016; Su & Waugh, 2018). Like the participants in the Culp-Roche et al. (2020) study, the students in this study appreciated the advantages of technology, but they varied in their comfort level using it. Unlike McClendon's (2017) and Iloh's (2019) studies, only one student noted the challenges of isolation as an online student. The main challenge was a facility with technology. The findings indicated that students varied in their technical abilities, and this variation affected the extent to which they used the software to contact their advisors.

Academic advisors' critical role in student success is well documented (Bohl et al., 2017; Schroeder et al., 2016; Steele & Erisman, 2016; Vianden, 2016). Consistent with these studies, the majority opinion of the students in this study was that their advisors were influential in promoting academic success, and software tools, such as reminder notices, were helpful. However, results for this study also reflected a self-directed perspective the students had regarding their education, which was also referenced in the studies conducted by Bourdeaux and Schoenack (2016) and Rabourn et al. (2018). For many students, academic decisions were framed by the combination of advisor support and their drive to achieve.

Moore's (1993) theory of transactional distance served as one framework guiding the interpretation of my results. This theory considers both the physical and emotional distance between students and instructors or, in this study, the distance between students and advisors. While most students in this study were online students, two students were campus-based. The COVID-19 pandemic affected both students, and they worked closely with advisors to minimize the challenges of being off-campus. For one student, the transactional distance was minimized by frequent two-way communication. For the other student, there was also two-way communication via web-conferencing, but miscommunication did occur, thus indicating a higher transactional distance. Although it is also significant that the student felt that overall, his advisor was professional and wanted him to succeed.

Institutional policies also created high transactional distance and challenging interactions. An example of this type of high transactional distance interaction occurred because of the way advising appointments were scheduled at some schools. Some students were frustrated that they were not assigned one advisor but had to work with multiple staff, often resulting in extra effort to communicate and get answers. Other institutions mandated time limits on advisor appointments. Student dislike of these scheduling practices supports the finding of Schroeder et al. (2016), in which graduate students experienced and desired their highest level of connectivity with academic advisors. Fortunately, for most students, the student support software facilitated communication with their advisors, and transactional distance was low.

Astin's (1999) theory of engagement was evident in the communication between students and advisors. Astin noted the effectiveness of a program is related to its facility to increase involvement. Findings indicated that the more responsive an advisor was, the more engagement a student reported. The students whose advisors checked in on them regularly welcomed the contact, which corroborated the results of Schroeder et al. (2016), and it helped them stay on track as in the findings of Bohl et al. (2017).

Convenience also facilitated engagement. The students whose schools offered smartphone applications appreciated the convenience of being able to contact their advisors quickly. In turn, the rapid response most students received from their advisors fostered a sense of engagement. Rapid response to students is an example of advisors, facilitated by technology, engaging students. Although one student reported that her advisors took too long to respond, the majority were pleased with the timely responses they received. The students' desire for prompt responses from advisors was consistent with the findings of Cross (2018).

The nontraditional students in this study were motivated to attend school by their desire to advance in their careers. Academic advisors, facilitated by technology, played a pivotal role in supporting their goals. Consistent with Schroeder et al. (2016), they valued contact from their advisors. In those few instances when contact was limited, it resulted in transactional distance.

Limitations of the Study

There were three limitations in this study. First was the small number of study participants. Interviewing a larger number of students may have revealed additional

issues pertaining to technology-mediated advising and student success software. A second limitation was that the data gathered was not triangulated; the data was self-reported, and I assumed that it was accurate. Adding another data source, such as advisor interviews or a focus group, would have provided triangulation. A third limitation was the narrow focus of participant selection. I had intended to sample students who had used one or more of the three types of student success software that directly involved students: reminder notices, degree maps, and early alert notices. None of the participants reported receiving an early alert notice. It may be that students who have academic challenges are reticent to discuss them. A broader population might have revealed nuances between students who have experience with different systems. However, it may also be that institutions are not using the alert system as intended.

Recommendations

Given the growing number of nontraditional students (Rotar, 2017) and the continued use of student success software by postsecondary institutions (Argüello & Méndez, 2019), further study is warranted in different areas. First, more information is needed about early warning systems. None of the students in this study reported receiving an early warning, a study targeting nontraditional students would potentially reveal how, if at all, this population responds to such alerts.

A second research recommendation is to analyze differences among age and experiences of students. Students in this study ranged in age from 40 to 64 years of age, a span of 24 years. Thus, the oldest students were introduced to the internet in their late 30s. The younger students were in their late teens when the internet became available to

the public and in their 20s when smartphones were developed. To get a more comprehensive perspective of how digital immigrants view student success software, further studies should raise the age limit, such as 45 and older. As the length of time that our society using internet increases, the issue of digital immigrants will no longer be relevant.

To get the maximum use of student success software, advisors and students need to know how to use it. Therefore, a third recommendation is to include information about using the software in an orientation for new students, and the information should be available for the student's first year of enrollment because it is unlikely the student will need to use all features of the software immediately. Institutions may assume all students enter college technologically competent, but this study revealed that is not the case for some older students who need just-in-time help. A virtual advising hub (Argüello & Méndez, 2019) would provide a resource for students after traditional work hours and complement the activities of advisors.

Nontraditional students are a diverse group. The small size of this study precluded an in-depth examination of the demographic variations within this group. However, future studies should examine how nontraditional students balance their professional and academic responsibilities and the methods by which nontraditional students compensate for their lack of facility with technology. Exploring how nontraditional students develop the skills needed to become competent online learners can provide decision makers with information about learning design, support services, and prerequisite skills needed to succeed and reduce attrition.

Implications

The results of this study have implications for advising practices and school policies. Regardless of the various software programs available to schools, it is important to remember that the software does not replace academic advisors; it complements their activities and allows them to work more efficiently to reach a large caseload of students. Fostering a relationship between students and advisors can help increase student persistence, regardless of age. The students in this study articulated their preference for having a relationship with their advisors, as was the case in previous studies (Donaldson, et al., 2016; Walker, et al., 2017). Decreasing attrition is good for students who will earn degrees faster and enter a job market that requires post-secondary more quickly. At a familial level, nontraditional student-parents often cite pursuit of higher education to better support their family in the future as well as being a role model for their children (van Rhijn et al., 2016). From an organizational perspective, schools also benefit by maintaining and improving standards; completion rates are typically part of accreditation reviews (Schuetz et al., 2016). At a societal level, the U.S. labor force needs more college-educated workers. Thus, degree completion, particularly through the flexibility of online programs, benefits the individual, the marketplace, and society.

Given the numbers of nontraditional students returning to school (Rotar, 2017), higher education institutions must consider their unique needs. Because most nontraditional students are more likely to work, services such as academic advisors and technical support should be available after traditional work hours. They also balance more activities than do traditional students. Therefore, schools should give students an

opportunity to select a preferred mode of communication. Consistent with the discussion offered by Hall et al. (2017), in order not to overwhelm students, advisors need to balance between proactively reaching out to students through the various software options and pacing the frequency of contact to avoid overwhelming them. Knowing a student's preferences for contact could help an advisor stay engaged with a student in a meaningful way.

Conclusion

Between the COVID 19 pandemic requiring students to learn remotely and the increasing number of nontraditional students (Hussar & Bailey, 2017), the demands on advisors to serve large numbers of students will increase. Student success software allows advisors to work more efficiently, and findings from this study indicate that overall nontraditional students had a favorable view of the software. However, the use of software alone will not promote student persistence. Schools need to use software strategically to engage students and keep transactional distance at a low level. Without engagement and with a high transactional distance, attrition rates will likely continue to grow.

Advisors can encourage engagement by introducing students to advising resources and providing orientation to show them how to perform important tasks, such as scheduling an appointment with an advisor. As Ellis (2019) noted, a “front-end” approach to supporting nontraditional students could help to decrease attrition. Academic advisors aided by student success software are strategically positioned to provide this support.

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Appendix: Interview Protocol and Questions

Opening Dialog

Hello, (interviewee's name), thank you for agreeing to participate in my research study. As I previously explained, I will use the data from this interview in my dissertation, which is a part of the requirement for my Ph.D. I am interested in learning more about student perceptions of the software many schools use to contact and advise students. Typically, that software can be used to send reminders about important deadlines, facilitate planning the order in which you take your classes or encourage you to seek assistance for certain classes. I am focusing on nontraditional students because they are a fast-growing undergraduate population, and many enroll in online classes. My interest in this topic stems from my experience as an academic advisor for online graduate students.

While your responses will be part of my research, I will not use your name will in my dissertation. You will not receive any direct benefit from participating in my research, but the results of the study have the potential to assist advisors to enhance their communication with nontraditional students and decrease attrition.

Although you have already signed a consent form, please know that you may withdraw from the interview at any time. Also, although you have consented to being recorded during this interview, I would also like to take a few notes to clarify or emphasize topics that may need further clarification or exploration. This interview should take 30- 60 minutes. Before we start do you have any questions about my research or your participation in it?

Introductory Questions

- Tell me a little bit about your background
 - If age is not given, I will ask (not an open-ended question but needed information for this study)
- What is your grade level and major?
 - How long have you been working on earning a degree?
 - When do you anticipate graduating?
- What has prompted you to pursue a degree?
 - What school do you attend?
 - Why did you select this school?
- What has been the most challenging aspect of going to school?
- If you work, about how many hours a week?

Research Questions

- How would you assess your technical skills before starting your online classes?
 - How would you assess your skills now?
- Tell me about your interaction with the academic advising department/ your advisor
 - How would you assess your advisor? Specifically, I'd like to hear how you describe the level of helpfulness you receive (If the response is not in-depth, they will be asked to comment on the following)
- Communication style? Is the communication timely?
- Program knowledge and procedures?

- General demeanor?
- How would you describe the communication (emails, voicemail, texts or social media posts) you receive from the advising department/ your advisor (if the response is not in-depth, the following will be asked)
- When you receive an automated notice from advising, what is your first reaction?
 - How often do you receive notices? How quickly do you respond?
 - What is your opinion of the notices- i.e., how would you assess the usefulness of the notices?
 - Which messages do you ignore, if any? Why?
- If you were in charge of the of the advising department, what would you do to enhance communication with students?
- Have you thought about dropping a class/ Have you dropped a class? If yes, tell me about that occasion
- Describe the interaction, including any communication you had with the advising department/ your advisor during that time
- To what extent has your advisor impacted your academic career?
- What would you change, if anything, about the method of communication the advising department/ your advisor uses to reach out to students?
- What else should I know about your opinion of the advising department/ your advisor or the format of communication you receive?