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Implementation of a Learner Support System in Online Education: A Case Study

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Implementation of a Learner Support System in Online Education: A Case Study

by

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Dedication

This dissertation is dedicated to the memory of my parents and brother.

Thank you for teaching me that I can accomplish anything if I put my mind to it.

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Implementation of a Learner Support System in Online Education: A Case Study

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Abstract: Learner support systems that provide academic and non-academic supports, which are planned and strategically integrated into the online learning experience have been shown to have a positive impact on student's persistence and satisfaction in online environments. Insufficient research exists on how these systems are implemented, how support is provided, and how students perceive the support they receive, especially for adult learners. To address this gap in research, this descriptive case study analyzed the implementation of a learner support system in an online program in which three-quarters of the students are nontraditional. Through the use of qualitative methods, the study describes the experiences and perceptions of faculty, the academic advisor, and students who administered or received support through the system. This study contributes needed research to the field of education by exploring student support as a method of improving student persistence in online education.

This study found that learner support systems require oversight and management to ensure that they remain a working system. It was uncovered that the originally envisioned support system ultimately broke down as support became compartmentalized to those

providing support resulting in gaps in a learner support system that was envisioned to encircle students with assistance when needed. However, despite this breakdown, the results showed that learner support can help students feel encouraged and satisfied with their online experience. The majority of students found the support they received was helpful and that alerts about their academic standing motivated to continue in their course.

This research study also illuminated support strategies the faculty and the academic advisor used to optimize student interaction and persistence. The academic advisor, as a one-stop resource for providing nonacademic support, increased students' feelings of connectedness. This study also found that regular support interactions and timely responses from course faculty helped students' feel supported and reduced their perception of being isolated. This study also uncovered the faculty and advisors' perceptions and challenges in providing support to students.

Lastly, the study identified the types of support that students found most helpful to their learning in an online environment. The students found timely responses to their requests for assistance as most important to their learning and preferred easy methods to communicate with their professors. The support preferences between traditional and nontraditional students were also investigated.

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Chapter 1: Introduction

SIGNIFICANCE OF STUDY

Student success in postsecondary education is a priority for higher education institutions, but unfortunately, it is difficult to increase student retention. Despite decades of attempts to decrease attrition, student dropouts have remained one of the more complex problems facing postsecondary institutions, particularly in online learning (Allen & Seaman, 2014; Astin, 1984). Online education enrollment has increased substantially in the United States (Allen & Seaman, 2014) while overall enrollment in postsecondary education has decreased (National Student Clearinghouse Research Center, 2018; Synder, de Brey, & Dillow, 2019). Enrollment statistics indicate that more than 30% of college students (i.e., 6.4 million in total) took at least one online course during the 2015-2016 academic year, and over 14% of students (i.e., just over three million students) took online courses exclusively (Seaman, Allen, & Seaman, 2018). The demand for more online programs has evolved due to the expanded accessibility of the Internet, the flexibility of these learning environments, and the increase in enrollment by traditional and nontraditional students (Berger, Ramírez, & Lyons, 2012; Seaman et al., 2018). However, a consistent question facing institutions is how to increase students' persistence in their studies until their academic goal is achieved.

One method that has been shown to improve student persistence in online environments is offering strategic support opportunities (Habley & McClanahan, 2004). Support involves the interventions, interactions, and assistance provided to help students learn and build confidence as they progress in their courses (Simpson, 2000; Tait, 2003). This support has been shown to play a crucial role in students' contentment and satisfaction in their programs (Dowling & Ryan, 2007; Simpson, 2004; Tinto, 2017). While substantial

literature has addressed the development of online learning materials, resources, and instructional strategies, researchers have devoted less attention to the planning, administration, and perception of organized support systems (Tait, 2000). Learning in a virtual setting is inherently different from learning in a traditional learning environment, and it provides many different opportunities for both faculty and students (Konetes, 2011). As educators design and implement these programs, it is important for them to consider the context in which learning is taking place and identify the best strategies for supporting this learning. Multiple departments across higher education institutions share the responsibility to foster an environment that promotes success and engages the student (Tait, 2000). Online programs must be adaptable to the diversity of cultures, concerns, and needs of those enrolled. A problem of many online education programs is that they reflect a traditional pedagogical approach that was designed for a face-to-face classroom and lack an instructional plan designed for learning at a distance (Moore, 1991).

In recent years, institutions have begun implementing learner support systems in online environments. These systems comprise a network of individuals and services that provide academic and non-academic supports, which are planned and strategically embedded into the student's online experience (Britto & Rush, 2013; Daugherty, Davis, & Miller, 2015; Dowling & Ryan, 2007; Rainwater, 2016; Simpson, 2000; Tait, 2000; Tripp, 2008; Walters-Archie, 2018). Supports may include assistance with coursework from faculty and coaches, tracking students' progress, personal tutoring, and advisors who provide academic and relational support to increase perseverance (Jones-Schenk, 2014; Simpson, 2000). These systems have shown promise for increasing students' persistence and satisfaction by providing regular support interactions with institutional staff (Britto & Rush, 2013; Dowling & Ryan, 2007). While learner support systems have shown promise to increase persistence, they are still relatively new, and not much research has been

conducted. Therefore, this study investigated the implementation of a learner support system that was integrated into a new online program that was launched in the Fall 2017 semester. The study analyzed faculty and academic advisor's perceptions of the support they provided, as well as students' perceptions of the support they received.

LEARNER SUPPORT SYSTEMS

Students in online environments often feel overwhelmed with the demands of coursework and feeling alone in their struggles; these challenges present a common problem for online education. When developing online courses, it is essential to provide learning support that helps students overcome this barrier and cope with the demands of learning at a distance. As described above, one structured approach to this support is to implement a learner support system (Baker & Robnett, 2012; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). However, implementation of an online learning environment that includes a system of multi-departmental and cooperative supports can present many challenges. Research has shown that students benefit from the implementation of these systems in the areas of academic performance, satisfaction, and persistence (Arnold, 2010; Arnold & Pistilli, 2012; Britto & Rush, 2013; Haugabrook, 2016; Kuh et al., 2008; Neuhauser & Weber, 2011; Stephens & Myers, 2014). However, merely offering support opportunities in an online course is not enough to ensure the students' success. The implemented support system must be strategic and designed for the students whom it is intended to help (Tait, 2000). Kuh et al. (2008) further suggested that each member of the support system must have firm beliefs about their role in the operation.

Research indicates that developers of online programs often overlook the importance of organized support systems (Conceição & Lehman, 2016; Essa & Ayad, 2012; Yukselturk, Ozekes, & Türel, 2014). Insufficient research exists on the

implementation of learner support systems and how students perceive the support they receive, especially for adult learners. The limited empirical research that is available shows promise for the usage of these support methods. However, more research is needed to understand strategies for providing support through these systems and examine what kinds of support students find most useful.

Furthermore, there is much research on traditional students and on online education; however, less research has considered how to address the needs of a growing body of nontraditional students in online coursework. As the number of adult learners entering into post-secondary online education continues to increase, it is crucial to understand strategies to support these individuals and improve their persistence (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; Tait, 2014). Therefore, research is needed to investigate the support needs of the nontraditional student body and thereby increase their persistence and success in online education. Additionally, it is necessary for researchers to investigate students' perception of the support provided. This research will aid in the development of future online programs and the design of appropriate student support systems.

NONTRADITIONAL STUDENTS

The increase in online programs coincides with an increase in older adults, referred to as nontraditional students, returning to postsecondary education (NCES, 2018). In the literature, nontraditional students are characterized as individuals who are aged 25 or older, have full-time jobs, attend classes part-time, are single-family caregivers, or are former military personnel (Bean & Metzner, 1985; NCES, 2015). Over the past decade, students classified as nontraditional students based on age (i.e., those aged 25 or older) increased by 11% (Synder et al., 2019). This influx of nontraditional students requires that online

programs become adaptable to the growing diversity of students' cultures, concerns, and needs. Research has suggested that adult learners' needs for support differ from those of traditional aged students (Knowles, Holton, & Swanson, 2011; Thon, 1984). This distinction makes it challenging for colleges and universities to balance the support the needs of both student groups. Often, adult students are returning to the classroom after a long absence or are new to a virtual environment, so they may feel less uncomfortable adjusting to learning in an online setting (Cercone, 2008). Muench (1987) found that older learners often struggle with juggling their multiple life roles and have fears of failure and self-doubt thus impacting their performance in academic programs. Nontraditional students can also be more susceptible to external obstacles that result in a greater potential to withdraw from their studies (Giancola, Grawitch, & Borchert, 2009; Gregory & Lampley, 2016; Ishitani, 2006). Therefore, support should be carefully crafted to address these students' needs. Effective forms of support include providing orientations to online learning, the online environment, and what they should expect (Young & Norgard, 2006), as well as providing appropriate advising on courses and course load that will not overburden their busy lives (Bloom, Propst Cuevas, Hall, & Evans, 2007; Varney, 2009). Additionally, faculty and advisors need to understand the support needs of both nontraditional students and traditional students to create a learning space that meets all students' needs.

THE COMMUNITY OF CARE

The learner support system in this study, referred to as the "Community of Care," was implemented with the launch of a newly implemented online degree program for a Bachelor of Business Administration (BBA) in Cyber Security in the College of Business (CoB) at a public research university in the Southwest. The online degree program was

developed in partnership with the University System's Office of Innovative Education (OIE) (pseudonym). This program was the Cyber Security department's first endeavor to provide a fully online degree program. Historically, this degree program is an established residential degree program for many years and is a top-ranked program in the United States. The CoB elected to augment the existing program by developing a completely online version to extend its offering to a broader scope of students who would otherwise be unable to enroll. The partnership between the University and the OIE focused on developing the Cyber Security courses for the program. This process involved converting residential program courses to online courses and developing a learner support system that provided academic and non-academic supports integrated into the students' online experience.

The vision of the Community of Care maintained that students would be provided a "white-glove" approach from enrollment throughout their learning and until their academic goals were reached. This approach aimed to deliver a premium service of exceptional care and attention to the students' needs. The Community of Care was designed to prevent students from feeling isolated and to offer them assistance before they fall behind or withdraw from the program. This effort required the participants of the Community of Care to be proactive in supporting students' needs (rather than reactive when it was too late). The Community of Care comprised five roles: enrollment coaches, an academic advisor, course faculty, academic coaches, and an assessment specialist (also referred to as a grader and teaching assistant). All of these personnel worked to support students throughout their program trajectory.

This research focused on the implementation of the Community of Care in the Fall 2017 semester for the online Cyber Security program, in which three-quarters of the students were nontraditional. The study investigated the perspectives of the academic advisor and the course faculty regarding their experiences providing support to students,

including the challenges they faced in the process. The study also investigated students' perceptions of the support they received from these two departments and examined whether nontraditional and traditional students (identified by age) expressed different support preferences.

PURPOSE OF THE STUDY

The purpose of this qualitative, descriptive case study is to describe the experiences of participants in a learner support system implemented in a new online degree program that provided academic and nonacademic support to students. To address the study's purpose, qualitative semi-structured interviews were conducted with course faculty, the program advisor, and department administrators to understand the structure of the learner support system, what support strategies were administered, and the perspectives of those administering support. An online survey and qualitative semi-structured interviews were also used to investigate students' perceptions of the support they received and determine whether this support influenced their academic persistence. This study will advance the field of education by contributing needed research on the planning and implementation of learner support systems to increase the persistence of students in online environments, as well as by identifying specific support needs of nontraditional aged students. Postsecondary institutions and those that support students must understand the unique needs of these individuals to influence the success of those who enroll in online education. The findings of this study will aid academic administrators, student affairs professionals, instructional designers, academic advisors, and course faculty as they plan, implement, and administer online courses and support systems. It will also inform conversations about how institutions can implement support to students in online environments and increase persistence.

RESEARCH QUESTIONS

The following research questions guided this study:

1. How was the learner support system for the online Cyber Security program implemented in the Fall 2017 semester?
2. How did the academic advisor perceive their role in providing support to the enrolled students?
    a. What strategies did the advisor use to support the enrolled students?
    b. What challenges did the advisor face in supporting students in the online program?
3. How did the course faculty perceive their role in providing support to the enrolled students?
    a. What strategies did the course faculty use to support the enrolled students?
    b. What challenges did the faculty face in supporting students in the online program?
4. How did the enrolled students perceive the support provided in the online Cyber Security program?
    a. What obstacles impeded the students' ability to complete their coursework?
    b. Are there any reported differences between perceptions of support among traditional and nontraditional students?

KEY TERMS

Academic Support: The assistance that is provided to students to aid their learning (e.g., the organization of instructional content, engaging in interactions, eliciting responses, tutoring, or providing feedback on course activities (Lowe, 2005; Simpson, 2000; Tobias, 1976, 1982).

Attrition: A student who withdraws from their postsecondary institution. The withdrawal is either voluntary or involuntary on the part of the student.

Community of Care: The name of the learner support system implemented in the online Cyber Security program at the University under study.

Early alert system: A system that uses data to proactively identify students who are at-risk early on, before course completion. Faculty, academic advising, and support staff utilize this data to initiate interventions for students.

Learner Support System: A network of supporting staff (e.g., academic advising, faculty, coaches, or other support) who cooperatively deliver academic and nonacademic supports to students throughout the learning experience.

Nonacademic Support: Assistance for program needs (e.g., selecting and planning courses, major guidance, navigating the academic journey, or providing career advice) (Simpson, 2000) as well as the supporting the students' affective needs related to their enrollment and career trajectory (e.g., nurturing and encouragement) (Lowe, 2005).

Nontraditional Students: Undergraduate college students who are aged 25, have full-time jobs, attend classes part-time, are single-family caregivers, or are former military personnel (Bean & Metzner, 1985; NCES, 2015). In this study, nontraditional students are characterized as being aged 25 or older.

Persistence: A student's decision to continue with his or her educational program until they achieve course completion, graduation, or other academic goals.

Retention: Students who complete their degree program at their institution.

Intervention: Passive or intrusive actions that are taken to improve the student's outcomes or persistence in their program (Educause, 2015).

Student Support: Activities, interventions, or interactions that are outside the course content that help students to build confidence and progress in their programs (Simpson, 2000; Tait, 2003).

Traditional Students: A traditional student is aged between 18 and 24 and attends school full-time. In this study, traditional students are characterized as being aged 24 or younger.

Chapter 2: Literature Review

This chapter reviews relevant literature on online learning, learner support in distance education, and the implementation of learner support systems. This review illustrates an increasing need for organized systems of support that are designed for the enrolled student and aimed at increasing student persistence. The first section of this review discusses the current state of online education, including program enrollment, and reviews current research on relevant topics. The second section discusses learner support systems. It provides a description of these systems along with case examples with the impact they have had on their programs. Lastly, the review focuses on learner support in online education, particularly in the areas of academic advising, faculty, and students' perceptions and preferences for support.

INTRODUCTION

The past decade has seen a growing demand for flexible learning opportunities and an increase in online education programs to meet this demand (Allen, Seaman, Poulin, & Straut, 2016). This proliferation has been aided by the increased enrollment of adult, nontraditional students returning to postsecondary education; these students view online learning as a versatile, affordable solution to establish or advance in their careers (Lumina Foundation, 2013, 2016). Nationwide, enrollment of students classified as nontraditional based on age (i.e., those aged 25 or older) has increased by 16% and has shown a steady rise over the past decade, and students who have already obtained a degree (i.e., post-baccalaureate students) are returning for additional education (Synder et al., 2019). Yet, despite these trends of increasing enrollment, attrition continues to be a significant concern for postsecondary institutions. Despite decades of attempts to decrease attrition, student

dropouts have remained one of the more complex problems facing institutions of higher education (Allen et al., 2016).

As a result of this challenge, understanding how to increase student persistence in their studies until their academic goal is achieved has become a key focus for many colleges and universities (Delen, 2010). One method that has shown promise for improving student persistence is the implementation of strategic support systems integrated into the learning experience that support students in maintaining progress in their academic work (Britto & Rush, 2013; Daugherty et al., 2015; Dowling & Ryan, 2007; Rainwater, 2016; Simpson, 2000; Tait, 2000; Tripp, 2008; Walters-Archie, 2018). Providing proactive support and interactions to students during online learning, where they are typically isolated from others, has been shown to play an important role in the satisfaction and perseverance (Dowling & Ryan, 2007; Simpson, 2004; Tait, 2000). The aim of online student support is to assist students in learning successfully and to increase their feelings of confidence and self-esteem, thereby increasing their persistence and success (Tait, 2003). Support aimed at increasing persistence is an important consideration when building online programs.

ONLINE EDUCATION

The Integrated Postsecondary Education Data System (IPEDS) ("Glossary") defines distance education as "education that uses one or more technologies to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor synchronously or asynchronously." A course is considered "online" or "virtual" when 80% or more of the course content and instruction is delivered online using digital media and electronic devices and the assessment of learning is managed virtually in a web-based environment (Allen et al., 2016; Gedeon & Khalil, 2015). In this study, the terms online or distance education

would appropriately describe the Cyber Security implemented in the College of Business at the University. The entire program was conducted online using digital technology, and 100% of the communications to support students occurred virtually.

Learning Online

Most online programs require students to have a significant amount of autonomy to be successful. The virtual environment requires students to regulate their learning and reach out for support when needed. Research indicates that online learning requires students to be disciplined and able to direct their own learning in order to succeed (Baxter, 2012; Gregory & Lampley, 2016; Kenner & Weinerman, 2011; Person, Goble, & Bruch, 2014; Rainwater, 2016). Unfortunately, this also means that a struggling student may go unnoticed, which may result in withdrawal from their studies.

The 2017 National Student Satisfaction and Priorities Report presents the findings from a survey conducted with a national sample of undergraduate and graduate students enrolled in online education (Ruffalo Noel Levitz, 2017). The report found that students originally decided to enroll in their online program because it was convenient, fit with their work schedule, and enabled them to complete coursework at a flexible pace. The report further found that a majority of the students (74%) were satisfied with their online program, and the top areas for improvement included the quality of online instruction, clearly defined student assignments, responsiveness of faculty to student's needs, and timely feedback from faculty about the student's progress (Ruffalo Noel Levitz, 2016, 2017). These results indicate that there is room for improvement in terms of academic experience for online programs.

Increase in Nontraditional Students

The last decade has seen an increase in older, more experienced individuals, often referred to as adult learners or nontraditional students, entering or returning to postsecondary institutions. The definition of an "adult" student varies within literature and within higher education institutions. This study aligns with literature that identifies individuals that aged 25 or older as nontraditional students (Bean & Metzner, 1985; Cleveland-Innes, 1994; Jesnek, 2012). The National Center for Education Statistics (NCES) (2015) further expanded the scope of what establishes a student as nontraditional to also include those who have at one or more of the following characteristics: aged 25 or older, independent for financial aid purposes, having one or more dependents, a single caregiver, completing an alternative path to receive a high school diploma, delaying postsecondary enrollment, attending school part-time, or employed full-time. Many nontraditional students are military veterans returning to civilian life, single parents, or first-generation college students (NCES, 2015; U.S. Department of Education, 2017). The focus on this study is on adult students aged 25 and older, since more than three-quarters of the student population for the online program under study fell into this category.

These students are often returning to school to complete their degree, receive a certificate to advance in their career, or for personal achievement (Audant, 2016; Jesnek, 2012). They desire educational programs that can flexibly accommodate life's ever-changing demands, are cost-effective, and provide a quality education in which they will receive a degree or certification that is economically viable in an increasingly competitive job market (Audant, 2016). Therefore, distance education that is conducted online has become the leading means to achieve this goal. Research indicates that nontraditional students require different levels of support to succeed in the completion of their program (Giancola et al., 2009; Kenner & Weinerman, 2011).

Theories of Student Persistence

Many researchers have attempted to explain why some students do not persist in their degrees. One of the most popular theoretical perspectives is Tinto's theory of student departure (Tinto, 1975, 1988, 1993). The basis of this theory is that persistence is a product of the interactions between students and faculty, staff, and peers in academic and social settings that occur over time (Tinto, 1993). Tinto postulates that a student is more likely to stay enrolled in their academic program if they become connected to the academic and social life of the institution. Students who develop connections to other individuals, connect socially, or engage in academic activities are more likely to persist than those who are uninvolved. Students who feel that the institution cannot help them achieve their goals are unlikely to persist. Similarly, students who feel isolated or do not engage in social interactions within the institution are less likely to endure in their educational program. Negative experiences and circumstances that limit students' campus involvement weakens their intentions and commitments, increasing their likelihood of departure.

Tinto (2017) advanced his theory to include factors, within an institution's capacity to control, that shape a student's motivation. He suggests there are practices that institutions can put in place that will increase the students' motivation, thus improving their likelihood of persistence to program completion. Tinto posits that a student's belief in their ability to succeed (i.e., self-efficacy) must be built, reinforced, and maintained throughout their academic journey. Therefore, he suggests that colleges need to offer a range of academic support programs, especially for students in their first year, that include academic and social support aimed at helping students increase their self-efficacy. The most effective support programs are those directly related to the courses in which the students are enrolled. He suggests that early intervention is best, before the student's struggles undermine their

motivation and persistence. If left unaddressed, the student's academic struggles will undermine their self-efficacy and further derail their academic performance. Tinto further suggests that frequent formative assessment and feedback enable students to monitor and adjust their behaviors throughout their course enrollment. For some students, such as those who attend part-time or have other responsibilities outside of the classroom, social support is especially vital to their persistence. Furthermore, he suggests that support from advising and mentoring programs could be helpful to students that have difficulty managing tasks associated with college.

Criticisms of Tinto's theory are that it was developed primarily in relation to traditional-aged students in residential programs and that it is not generalizable to explain attrition among nontraditional students (Bean & Metzner, 1985; Cabrera, Nora, & Castaneda, 1993; Maxwell, 1998; Rendón, Jalomo, & Nora, 2000). Another significant model of persistence is Bean's model of student attrition, which has been validated on nontraditional student populations including adult learners (Bean & Metzner, 1985) and distance learners (Rovai, 2003). Bean's perspective addresses external factors that impact the persistence of nontraditional students, many of which are beyond the control of an institution. Conceptually, Bean's model is similar to Tinto's theory in that it emphasizes that background characteristics and interactions with an institution influence satisfaction, commitment to degree completion, and persistence (Bean, 1980, 1983). Bean's model suggests that students' interactions and participation in their learning, combined with their feelings about their educational experience, influence their satisfaction and indirectly affect their intentions to persist. Concurrently, external factors over which the institution has no control, such as family commitments or financial constraints, also influence the student's intentions to leave the institution and drop out. In Bean's model, external, attitudinal, and interaction factors jointly influence the student's departure or persistence.

Together, Tinto and Bean's two theoretical perspectives on student persistence provide key factors that profile students preparedness when they arrive at college and the meanings they make of their experiences (Kuh et al., 2006). The theories emphasize academic and nonacademic encounters and experiences that impact the students' persistence in their educational programs (Astin, 1985; Pascarella & Terenzini, 1983).

Students in Online Education

Most online programs require students to have a significant amount of autonomy to be successful. The virtual environment requires students to regulate their learning and reach out for support when needed. Research indicates that online learning requires students to be disciplined and self-directed in order to succeed (Baxter, 2012; Gregory & Lampley, 2016; Kenner & Weinerman, 2011; Person et al., 2014; Rainwater, 2016). Students often enroll in online education because its flexibility enables them to juggle responsibilities like work, family, and other life events. However, to persist in online programs, students must specifically manage academic responsibilities along with these other obligations (Rovai, 2003).

A number of impediments can impact the quality and vigor of student's learning in an online environment (Berge, 1998). Berge (1998) suggested that a lack of independent learning skills, lack of technical assistance, and feeling uncomfortable with "faceless" teaching could impact the student's learning in distance education and that providing a sense of community showed to have a positive influence on learning in online education. Research has also suggested that students in online courses are more likely to withdraw from a course compared to students in an equivalent traditional classroom (Gregory & Lampley, 2016; Jaggars, 2011; Smart & Saxon, 2016). Leading reasons why students do not complete their programs include lack of engagement in the learning environment

(Heublein, 2014), subpar feedback or support from faculty (Brinkworth, McCann, Matthews, & Nordström, 2009), lack of a social component within the program (Heublein, 2014; Tinto, 1993), lack of support from family (Conceição & Lehman, 2013), lack of motivation (Jung, Choi, Lim, & Leem, 2002), and lack of time to complete the work due to other competing responsibilities (Rovai, 2003).

Furthermore, Jung et al. (2002) found that high learning motivation is essential for remaining active in online education and relative to students in traditional programs, students enrolled in online programs may have a higher tendency to withdraw or fail due to feelings of social isolation or lack of interaction with other students and faculty. Isolation is often viewed as a consistent problem associated with online learning (Ali & Smith, 2015; McMahon, 2013). Isolation has been linked to attrition, instructional ineffectiveness, and overall dissatisfaction with the learning experience (McMahon, 2013). Feelings of isolation negatively impact the student's feelings of being connected to their University, their program, or their course (McInnerney & Roberts, 2004). Thus, feelings of isolation can adversely affect a student's persistence and retention (Bibeau, 2001)

Students' experiences as they enter postsecondary education, particularly during the first year, can have a significant influence on their persistence and retention (Baker & Robnett, 2012; Gilardi & Guglielmetti, 2011; Mah, 2016). This initial year can be especially challenging for students as they begin dealing with curricular demands and different faculty expectations (Brinkworth et al., 2009). Research shows that a majority of students withdraw during their first year due to difficulties balancing school requirements with demands in their personal lives (Delen, 2010; Rovai, 2003). Additionally, Conceição and Lehman (2016) found that online students may have trouble placing themselves in the virtual space; therefore, institutions can provide support that aids students with adapting to virtual teaching and learning. Further, Offir, Barth, Lev, and Shteinbok (2003) found that

when students felt challenged by the unfamiliarity of the online environment, they often felt uncertain about their academic abilities and underestimated their own acquired knowledge. Therefore, the researchers suggested that it is crucial that students be provided with a positive university experience, especially in their first year, to strengthen academic self-efficacy.

Faculty Perceptions of Online Education

The authors of the Online Report Card report found that throughout 14 years of evaluating trends in online education, despite the observed increases in institutional offerings and student enrollments, there was very little change in faculty members' perceptions of the value and legitimacy of online education (Allen et al., 2016). The researchers found that most faculty continued to express a high level of skepticism regarding the value of online instruction. The authors state, "A continuing failure of online education has been the inability to convince its most important audience – higher education faculty members – of its worth" (Allen et al., 2016, p. 26). This enduring skepticism may limit the effectiveness of online instruction, because teaching and learning are most effective when the course faculty, instructional staff, and students are all invested and engaged.

Unfortunately, research has suggested that online learning carries a stigma of low quality and low perceptions of validity among faculty and many other critical stakeholders (Allen, Seaman, Lederman, & Jaschik, 2012; Benson, 2003). Online learning had been plagued with untruthful institutions or diploma mills. Diploma mills are institutions that grant large numbers of higher education degrees based on inadequate or illegitimate education; these institutions generally lack proper standards for assessment and accreditation (U.S. Department of Education, 2009). Despite attempts to identify and rid

the online educational landscape of these institutions, it continues to be a problem and leads some faculty to associate online learning with a lack of rigor and inferiority to the traditional classroom (Columbaro & Monaghan, 2008; Osika, Johnson, & Buteau, 2009).

The sense of online education as inferior to traditional programs continues to linger in the minds of many faculty (Allen et al., 2016), despite continued research that has found no significant difference in the effectiveness of online compared to face-to-face courses (Brinson, 2015; Faulconer, Griffith, Wood, Acharyya, & Roberts, 2018; Kirtman, 2009; Ochs, 2017; Smith & Palm, 2007; Unal, 2005). However, Shea (2007) found that the number of times that a professor had taught online influenced their desire and perception of teaching in this environment. The author found that less experienced instructors were more concerned that offering online education might diminish the reputation of their institution. Further, in a 2017 survey of faculty at colleges and universities conducted by Gallup and *Inside Higher Ed*, Jaschik and Lederman (2017) found that most faculty were relatively unconvinced about whether their institution's online courses were achieving learning outcomes similar to those of face-to-face courses. However, the findings showed that faculty members who had firsthand experience teaching online were much more likely to believe in this similarity of outcomes compared to those who had not taught online before.

Faculty Workload

Research posits that online teaching places increased demands on faculty members' already limited time for course planning and preparation (Capra, 2011; Tomei, 2006). This disproportionate investment of time and effort by instructors remains largely unconsidered by administrators making decisions for faculty to teach an online course (Tomei, 2006). Special attention should be placed on a faculty member's workload before assigning them

to teach online, as an overburdened instructor could negatively impact the student's learning experience (Mupinga & Maughan, 2008; Tomei, 2006). Cavanaugh (2005) found that it takes faculty twice as long to prepare and teach online compared to an equivalent face-to-face course and that the additional time required by online teaching was primarily due to increased student contact and providing individualized instruction. Tomei (2006) compared the teaching load for faculty in both teaching online and in face-to-face courses. The researcher found that online teaching demanded a minimum of 20% more time than traditional instruction and that the teacher's workload varied significantly between the two formats. The workload for teaching in the traditional format remained stable, while the workload for online teaching fluctuated throughout the semester. Lack of time is often found to be a major issue faced by faculty regardless of teaching format. However, the time required for online class development, design, and facilitation may be a deterrent for faculty making the transition to teaching online (Kebritchi, Lipschuetz, & Santiague, 2017). Although faculty may find this investment of additional time challenging and inconvenient, it is necessary to teach online successfully (Li & Irby, 2008). Therefore, providing support to faculty through professional development and training is beneficial for improving the online teaching experience (Kyei-Blankson & Keengwe, 2013).

Faculty/Student Perceptions of Online Coursework

A problem of many online education programs is that they reflect a traditional pedagogical approach designed for a face-to-face classroom, rather than an instructional approach specifically designed for distance learning (Moore, 1991). Little research has explored the perception of online coursework difficulty, and the research that is available suggests that there is often a mismatch between faculty and student perceptions (Brinkworth et al., 2009; Wyatt, 2005).

Studies suggested that students perceive online coursework as more challenging than traditional courses (Dobbs, del Carmen, & Waid-Lindberg, 2017; Leonard & Guha, 2001; Wyatt, 2005). Leonard and Guha (2001) found that 60% of students in their study believed that taking an online course was more challenging than taking a traditional course. Dobbs et al. (2017) also found that students felt that the traditional classroom was easier, but offered a possible reason for the this disparity. The authors suggested that the students may feel that online courses are more difficult since it requires students to self-regulate their learning, thus taking more of an effort. Furthermore, there appears to be an association between students' perception of the difficulty of coursework and their perception of program quality and rigor (Dobbs et al., 2017; Wyatt, 2005). Wyatt (2005) found that some students felt that the demands of the coursework reflected the program's high degree of quality and rigor, while others believed that the online instructors purposely made the coursework more difficult in an effort to ward off criticism that the online courses were easy. The students felt that the online courses were more difficult than they needed to be and attributed these coursework demands to the perceived insecurity of the faculty. This finding suggests that coursework differs between traditional and online settings, and that students generally perceive the online coursework to be more difficult. One possible reason for this perception is that online learning requires an extra effort to self-regulate learning, including reading and understanding the course material; thus, online learning takes more effort and feels more difficult (Baxter, 2012; Rainwater, 2016). As suggested above, another possible reason is that faculty add more difficulty to the course due to their own negative perceptions of the value and rigor of online education (Allen et al., 2016).

LEARNER SUPPORT SYSTEMS

Learner support systems have shown promise for increasing student persistence and engagement in online learning. These systems provide a network of individuals and services to assist students through the administration of academic and nonacademic supports, which are embedded into the student's online experience (Britto & Rush, 2013; Daugherty et al., 2015; Dowling & Ryan, 2007; Rainwater, 2016; Simpson, 2000; Tait, 2000; Tripp, 2008; Walters-Archie, 2018). Simpson (2000) defined learner support as all activities beyond the production and delivery of course materials that help students to persist in their studies. One advantage to a learner support system is that it facilitates a cooperative effort among faculty, coaches, advisors, and services in the learning environment to create a support ecosystem that actively aids students throughout their academic lifecycle and helps maintain their momentum toward success (Tait, 2000).

Simpson (2000) described the use of academic or nonacademic supports for students. Academic supports are defined in literature as assistance in organizing the instructional content, maintaining student attention, eliciting responses, or providing feedback on coursework (Simpson, 2000; Tobias, 1976, 1982). Academic support also includes mechanisms for supporting interactions with course faculty or others who provide assistance (Lowe, 2005). Nonacademic support comprises support services such as intrusive advising, help with navigating their academic endeavor, or providing career advice (Simpson, 2000). Nonacademic support may also include an affective dimension of encouraging and nurturing the student (Lowe, 2005). However, the need for nonacademic support is often overlooked when designing the educational environment (Tessmer, 1990). Both academic and nonacademic supports are crucial for the learner support system to have maximum effectiveness (Sim, Atan, & Idrus, 2006).

Tait's model for learner support systems provided the conceptual frame for this study. Tait (2000) proposed three functions of student support are cognitive, affective, and systemic. The cognitive function suggested that support should provide mediation of course materials and resources to support the student's learning. The affective function identifies that the learning environment is supportive and enhances self-esteem. Lastly, the systemic function recognizes the need for establishing administrative processes and information systems that are effective, transparent, and student friendly. Tait (1995, 2000) identifies a framework for the development of student support systems. The framework includes understanding the (1) student's characteristics, (2) course or program demands, (3) geography constraints of the institution and students, (4) management of support, (5) technological infrastructure, (6) the ability to scale.

Tait (2000) maintained that the student support needs to be understood in terms of the range of its services and also in terms of its functions. Tait suggested that institutions should recognize the student as the starting point for the conceptualization and development of learner support systems. The student body makeup and understanding the characteristics of those enrolled is essential for providing assistance that is effective and relates to the students' needs and their abilities (Dwyer, Thompson, & Thompson, 2013; Evans, 1994; Tait, 2000). This recognition would also help to identify how institutional systems might need to change to support the student (Tait, 2000). Therefore, the course structure, teaching methods, assessments, support strategies, and the overall online environment must all be considered with the student, and their learning, as the basis for all actions of the learner support system. However, Tait also noted that due to the variability in institutional cultures, the availability of technologies, the program of study, and the characteristics of the enrolled students, learner support systems should be built with a high degree of customization to align with the specific capabilities of the institution and the

requirements of the program under study. Therefore, the planning and development of learner support systems can be a substantial undertaking (Dowling & Ryan, 2007; Floyd & Casey-Powell, 2004; Hardy & Meyer-Griffith, 2012).

Learner support systems typically include a coordinated effort between departments and services such as admissions, advising, financial aid, career and academic counseling, and library and registration services. Therefore, the institution's priorities must be aligned with their commitment to the success of the online students to ensure that the learner support system meets the students' needs and receives sufficient funding and attention (Floyd & Casey-Powell, 2004). Dowling and Ryan (2007) found that while the development of learner support systems required a significant financial and time investment on the part of the institution, the subsequent high learner retention rates made these systems a worthwhile investment. The authors indicated that the quality of the learner support system was the most significant factor in strengthening the students' satisfaction. The support system included daily learner support (i.e., telephone inquiries, emails, and a drop-in service), timely feedback on activities and learner progress, study skills development, tutors, and an orientation program aimed to ease the student's transition into the online environment.

Britto and Rush (2013) suggested that a fully developed support system for online students can be just as effective as the face-to-face services provided to on-campus students. The authors implemented a learner support system in an online program on their campus. This support system aimed to increase completion and success rates and to provide online students with services comparable to those received by the residential students. The system's actions included monitoring for at-risk students, online advising, targeted case management for first-time college students, and the delivery of an online student electronic newsletter (Britto & Rush, 2013). The support also included an early

alert system through the commercial student retention tracking software, *Starfish*. This technology identified students who had not completed their online coursework. The inactive student would first receive an automated email, and if they did not respond, an advisor would contact the student via phone to follow up and encourage continued course persistence. Students could also contact their advisor via online chat, email, phone, and video/audio web conference (i.e., WebEx). The authors were unable to evaluate the impact the learner support systems had on the students' retention rates. However, the authors perceived students' positive feedback and increased usage of the support system as signs of success. The research found that the online students were highly satisfied with the quality of their interactions with their online advisors (91%) and the ease with which they were able to communicate (97%).

Support in a learner support system is typically both proactive and reactive (Simpson, 2004). Proactive contact involves taking the initiative to reach out to students to check in on their progress or providing support in real time during planned activities. Reactive support involves responding to the student's communication or requests for assistance. Proactive support enhances the student's feelings of being supported and demonstrates to the student that they matter (Simpson, 2000, 2004). Bettinger and Baker (2014) reinforced these findings in their study of the effectiveness of individualized student coaching. The researchers evaluated the use of the third-party vendor, InsideTrack, which is one of the largest providers of student coaching in the U.S. and employs hundreds of coaches to work with students nationwide. The company partners with universities to provide success coaching to students. In their model, InsideTrack assigns a coach to regularly engage with a student about personal and school success problems. The coach's goal is to encourage student persistence and success by helping the student to navigate any barriers that arise. Bettinger and Baker (2014) found that students who received coaching

had higher rates of retention and college completion than students who did not receive coaching. They also found that coaching was associated with a 5.3% increase in persistence after six months and an additional 3.4% increase after 24 months. The researchers concluded that this individualized student coaching model has great potential to aid student success.

SUPPORT IN ONLINE EDUCATION

Student support plays an important role in the satisfaction and persistence of students in online learning (Dowling & Ryan, 2007; Simpson, 2004; Tait, 2000). The aim of student support in the online environment is to help students learn successfully and to increase their feelings of confidence and self-esteem, thereby increasing their persistence (Tait, 2003). This section will review the literature on support systems in three areas: advising support, faculty support, and students' perceptions of receiving support in online education.

Advising Support

Institutional support services such as academic advising, counseling services, or other services that aid in student retention are largely provided by student affairs professionals and in most cases, require the student to seek out their service (LaPadula, 2003). In many cases, support services are limited in availability for distance education students, and the amount and type of services provided by the institution are mostly dependent upon their capabilities and the resources that are available (Salih, 2004; Simpson, 2000; Tait, 2000). Academic advisors are an essential element for students' success and are often overlooked in online education (Abelman & Molina, 2001; J. D. Jones & Williams, 2006; Rice et al., 2009). The advising role is central to students'

emotional well-being, and it plays an important part in their feelings of belonging and connection to the learning environment (Conceição & Lehman, 2016; Salih, 2004).

Support for students in online education, through regular communication and proactive outreach, has been shown to be a vital factor in academic advising (Bloom et al., 2007; Varney, 2009). According to Bloom et al. (2007), effective academic advisors care about students' success, are accessible, tailor guidance to each student, serve as a role models, help students adapt to the learning environment, and provide appropriate program guidance. Varney (2009) highlighted that academic advisors must communicate regularly with online students, beginning as soon as possible after the student is admitted to their program. The author theorized that by connecting with students during admission, advisors could begin to establish relationships with them. Students' relationships with their advisors can significantly influence their persistence and satisfaction in their academic program; the advisor relationship is one of the most important factors that influences students' success (Abelman & Molina, 2001; Jones & Williams, 2006; Rice et al., 2009).

Intrusive advising has emerged as an effective method of increasing student persistence (Earl, 1988; Molina & Abelman, 2000). Earl (1988) described intrusive advising as the act of getting to the cause of a student's difficulty and then recommending an appropriate intervention. Intrusive advising has mostly been used to target at-risk students, however, it has also shown promise for aiding all types of students by matching the level of support with the student's unique needs (Leonard, 2002). By using this method, advisors can assess the student's need and then tailor support to that need. Intrusive advising involves proactive interactions with students to engage with them before issues become unsolvable (Varney, 2007). It is the demonstration of concern for student's preparation, a willingness to help students in exploring services, and involves proactive

contact with the goal of forming a caring and helpful relationship to increase academic motivation and persistence (Varney, 2007, 2012).

There is growing evidence that the implementation of intrusive advising and the administration of interventions are effective in increasing student persistence in online learning environments (Conceição & Lehman, 2016; Dowling & Ryan, 2007; Molina & Abelman, 2000; Simpson, 2004). Educause (2015) defines an intervention as actions, ideally supported by analysis, that are taken with the intention of improving the student outcome. Abelman and Molina (2001) found that most intrusive interventions produced higher cumulative grade point averages and retention rates, regardless of the level of intrusion, and that some intrusion is better than no intrusion, especially for at-risk students. In an another study, the authors also found that intrusive advising is beneficial when it includes personal contact and assists students in resolving obstacles that lead to poor academic performance (Molina & Abelman, 2000).

Providing appropriate guidance on courses is a critical aspect of academic advising (Bloom et al., 2007; Varney, 2009) and is also vital for establishing the student's confidence in their advisor (Cross, 2018). Cross (2018) found that students expect and appreciate their academic advisors to respond promptly, know about the programs they represent and university policies, assist the students' progress in their program of study, and demonstrate positive behaviors. Cross also found that students want advisors to initiate contact proactively and expect advisors to take the first steps in advising them. Research has also shown that proactive advising, especially for new students, is necessary to provide support and encouragement that facilitates a successful transition into the college experience (Abelman & Molina, 2001; Rice et al., 2009; Thompson & Prieto, 2013).

An example of a learner support system that utilized intrusive advising was at Queensborough Community College (QCC). In Fall 2009, QCC launched an initiative to

provide greater academic and student support services for all first-year, full-time students (Corradetti, Cuomo, Fichera, & Madera, 2013). The initiative bridged academics and student affairs by providing a new advising and enrollment strategy aimed at reaching students early and providing individualized support to help them navigate their first year of college (AACU, 2011). In the program, students were assigned an advisor who guided them through their first year through regularly scheduled interactions and was a one-stop resource for their needs. The advisor also served as a liaison between the student and the faculty. The advisor notified the faculty if the student reported any areas they were struggling with during their communications. Additionally, the faculty reached out to the advisor to ask them to intervene with students they identified as at-risk. As a result of the program and their interaction with their advisor, students reported feeling connected to their college community (Lackner & Fichera, 2014). It was also found that students were more confident about their academic standing, felt better-prepared to deal with academic concerns, and felt more comfortable seeking help after receiving an intervention.

The goal of providing support and interventions is to increase student persistence. The challenge of these endeavors is to target the right kind of support to students at the right time. The use of multiple approaches that address both academic and nonacademic needs encourages and motivates students to persist. Personal supports that target the needs of students have been shown to bring about positive results by intervening when the student is in need (Lackner & Fichera, 2014).

Faculty Support

In an online environment, teaching faculty must play both a knowledgeable, academic role and a caring, nurturing role to balance exchanges with students about course topics with personal, social issues (Mason, 1992). These roles work to build relationships

with students and to foster a sense of community that is essential in virtual environments (Dede, 1995; Wiesenberg & Hutton, 1995). Faculty hold the role of being the subject matter expert, developing instructional content, answering questions, leading discussions and activities, and helping students learn (Britton, 2009; Connell, 2011; Jones-Schenk, 2014; Lorenzo, 2007; Oyugi, 2015).

Wang, Shannon, and Ross (2013) posited that it takes careful planning and consideration to foster an atmosphere of support in online education that includes active interactions among students and the instructor. Accordingly, the researchers stated that faculty should take an active stance in monitoring their students, encouraging them to participate and persist. In an extensive review of literature, Kebritchi et al. (2017) also found that faculty should help students to be self-motivated and self-directed as these skills are necessary to be successful in online education. The authors further suggested that instructors should provide students with tools and support for increasing their ability to self-direct their learning. Self-directed learning is the process of learners taking responsibility for their learning by diagnosing their own needs and goals and implementing strategies to achieve their desired learning outcomes (Knowles, 1975). Motivation to learn in virtual environments is vital to students' success (Kim, 2009). Methods of providing faculty support for students in online environments include faculty interaction, feedback on assignments, virtual office hours, or access to tutors or coaches who assist with learning course concepts.

Faculty Interaction

Student-instructor interaction is critically important for student satisfaction and retention in online education (Lewis & Abdul-Hamid, 2006). Faculty interactions through emails, announcements, video conferences, discussion boards, or other activities can have

a significant impact on the student's perception of the faculty and the online environment (Brinkworth et al., 2009; Conceição & Lehman, 2016). All of these technologies offer faculty efficient and meaningful ways to interact with online students (Chen, Lambert, & Guidry, 2010; Dumford & Miller, 2018). Conceição and Lehman (2016) found that support from instructors aided in clarifying course issues and in understanding course content. Further, the authors found that the feedback provided on course activities and the professor's quick responses to emails were reported by students as the most beneficial forms of support received. Additional studies reinforce the finding that faculty's timely responses to e-mails and feedback on assignments have a positive impact on students' engagement in their learning (Brinkworth et al., 2009; Howell, Laws, & Lindsay, 2004; Mah, 2016; Marks, Haug, & Huckabee, 2016).

Kearsley (2000) suggested that the most important role of the faculty in an online course is to engage in a high level of interactivity and involvement with their students. Irregular or infrequent interactions can be detrimental to the student's persistence (Wilkinson & Sherman, 1990). A sufficient level of interaction with the faculty helps students overcome feelings of isolation or being at a distance (Dwyer et al., 2013). Isolation is a concern for online environments; therefore, faculty must utilize creative methods to foster in-class interactions among students that provide a feeling of being integrated and connected to the program (Moore, 1989, 1993). One method of supporting meaningful peer interactions is to implement pre-planned activities that are directly connected to the course content and offer students the opportunity to learn from and with others in their cohort through a collaborative process (Lewis & Abdul-Hamid, 2006). Lewis and Abdul-Hamid (2006) found that online environments that revolve around interactivity do not occur naturally; rather, these environments require deliberate actions by the faculty to attend to their students' needs.

There is growing evidence that the implementation of intrusive, just-in-time interventions is effective in increasing student persistence in online learning environments. Meaningful interventions when the student is falling behind can create a sense of "mattering": a feeling that someone else regards the student as important and worthy of attention (Schlossberg, 1989). Some institutions have implemented early alert systems that programmatically assist in identifying at-risk students so that course faculty can administer personalized interventions (e.g., personalized email, text message, referral to academic advisor, or meeting with the faculty) (Arnold & Pistilli, 2012; Pistilli, Arnold, & Bethune, 2012). These faculty interventions have been shown to increase retention and course completion (Pistilli & Arnold, 2010; Yukselturk et al., 2014).

Feedback on Assignments

The benefits of timely and substantive feedback for postsecondary students are well-supported in the literature (Brown, 2001; Conceição & Lehman, 2016; Dwyer et al., 2013; Hattie & Timperley, 2007; Wolsey, 2008). Wolsey (2008) defined feedback as "interaction designed to promote learning between professor and student or between students" (p. 311). Forms of feedback include written responses, verbal remarks, telephone calls, or other comments. Wolsey also suggested that if instructors provide consistent feedback over time, students will gradually feel more encouraged to explore content without the instructor's prompting, thereby increasing self-regulation. Instructor interaction with students through feedback and communication can have a powerful influence on the students' success in online environments (Hattie & Timperley, 2007).

Research has found that students highly value receiving feedback on their assignments (Conceição & Lehman, 2016; Marks et al., 2016). Chickering and Gamson (1987) identified seven guidelines to improve quality in college teaching, including prompt

feedback to students. Furthermore, Brown (2001) found that timely and thorough instructor feedback, especially in online environments, is essential to cultivate an enriched learning experience and foster students' sense of connection with the institution.

Planar and Moya (2016) also suggested that faculty should optimize the resources that are available to them to provide personalized comments when possible and lead the student in the self-regulation of their learning. Hattie and Timperley (2007) suggested that effective feedback should answer three questions that correspond to notions of "feed up" (i.e., "Where am I going?" Informing the student of the learning goal), "feedback" (i.e., "How am I doing?" Informing the student of how well they are doing), and "feed forward" (i.e., "Where to next?" Informing the student of how to progress in their learning). A key goal of providing feedback is that it is targeted to the student's level to ensure it is useful and lessens the discrepancy between the student's current understanding and the desired understanding. Ebrahimi (2012) investigated how early feedback and communication changed the students' problem-solving abilities in an online programming course. The researcher found that with early feedback and regular interactions, student achievement increased, and students had a deeper understanding of the course concepts.

Virtual Office Hours

Holding office hours has been a long-standing practice in traditional education and is often a required part of a professor's teaching responsibilities. Typically, office hours are times that faculty set aside weekly to be available to confer with students who choose to attend. These hours provide students an opportunity for informal communication with their instructor outside of the classroom to seek additional help and ask questions about course material, progress, or assessments (McGrath, 2014). Establishing virtual office hours (VOH) in online education is a strategy for meeting the student's needs and

increasing interaction with course faculty (Kohorst & Cox, 2007; Myers, Bishop, Rajaman, & Kelly, 2004). The affordance of VOH is its flexibility in meeting with students (Li & Pitts, 2009). Faculty can schedule multiple VOH sessions throughout the week at times that are convenient for their students (Spencer & Hiltz, 2003). Another advantage is that VOH enable faculty to offer additional teaching and learning strategies. Many VOH platforms allow for technologies such as video conferencing and online chatting so that students can see, hear, and communicate with their professors (Johnson et al., 1998; Li & Pitts, 2009). During these sessions, faculty can address issues or concerns that the students may be having about the course content, or the student can request that the professor discuss topics that are relevant to their needs (Myers et al., 2004). The professor can also hold question and answer sessions to address the needs of multiple students at one time or provide a short lecture to address a topic that students are struggling to understand (Johnson et al., 1998).

Spencer and Hiltz (2003) found that students were most satisfied with their online course experience when they had the opportunity to communicate with their instructor through synchronous sessions, and they found the sessions to be "rewarding." The researchers also found that instructors reported positive views of the sessions as a way to bring the students closer to them. Johnson et al. (1998) utilized TechTalk, a web-based mathematical collaboration tool, to facilitate students' interaction in VOH sessions. These sessions allowed students to ask questions about the course and how to perform certain computations. The professor walked through the correct procedures and resolved the students' questions or difficulties. The results of this study found that both the students and the course faculty agreed that the transmission of knowledge would not have been possible if it were not for the VOH sessions; participants stated that this would not have been possible through any other means of communication, such as email or a phone call. It was

the live interactions that positively impacted the students' experience in the online environment.

Research further demonstrates that VOH sessions enhance students' online learning and increase their satisfaction with the learning experience (Edwards & Helvie-Mason, 2010; Johnson et al., 1998; Kohorst & Cox, 2007; Li & Pitts, 2009; Spencer & Hiltz, 2003). Edwards and Helvie-Mason (2010) found that students liked VOH sessions because these provided an opportunity to interact and communicate with their professor. Students felt it was easy and convenient to contact their professor and liked the immediate response to their questions. Research indicates that the reasons students attend office hours include the desire to receive clarification on course content, receive feedback on upcoming or prior course assignments or tests, or receive instruction from faculty (Barry, 2008; Griffin et al., 2014). However, research also shows that virtual office hours are generally not well-attended (Edwards & Helvie-Mason, 2010; Johnson et al., 1998; Li & Pitts, 2009). This may be because students feel lost and do not feel anything can be done to help, the VOH session is not held at a convenient time, students fear negative feedback from their professor, or they do not have any questions and do not need help (Edwards & Helvie-Mason, 2010; Johnson et al., 1998; Li & Pitts, 2009). Li and Pitts (2009) conducted research on students' perception of VOH. The researchers found that students did not attend VOH if they did not have any questions or problems with the course topics; if they did, they would email the professor. However, the students did report satisfaction with having the VOH as an option for interacting with their professor. Johnson et al. (1998) also found that in VOH sessions in which online chat was the only form of interaction, it was difficult to follow the conversation in the chat window when a large number of students attended the session.

The use of VOH serves to enhance teaching and learning by faculty. These sessions allow the faculty to set the tone for their course by sending a message that they are accessible, caring, approachable, and ready to help students learn (Barry, 2008). Therefore, ensuring that sessions are interactive and effective can impact the student's overall satisfaction level with online learning.

Virtual Tutoring

To aid students' learning, many colleges and universities have added academic coaches who provide virtual tutoring (Kalogiannakis & Touvlatzis, 2015; Neuhauser & Weber, 2011). These coaches support learning in online environments by providing additional opportunities for students to interact with a person who can assist them with course content and answer their questions. The coach is typically a passionate advocate for the course content and provides timely, positive, and supportive services to students. The coach interacts closely with students and faculty to provide prompt feedback and support on course content (Neuhauser & Weber, 2011). This interaction fosters active student engagement in learning and works to assist students in overcoming challenging topics.

There are a variety of strategies for implementing virtual tutoring sessions. They may be tied to a specific course and directed by the course faculty or they may be offered at the program level in which students can receive assistance on any topic (Britto & Rush, 2013; Neuhauser & Weber, 2011). In this study, virtual tutoring was administered by academic coaches at the direction of the course faculty. The faculty made the decision to implement the virtual tutoring sessions due to the complexity of the course topic and directed the work of the academic coaches. Therefore, in this study virtual tutoring was considered a faculty support strategy.

Literature indicates students appreciate virtual tutoring in online learning environments, and this tutoring increases their satisfaction with the overall online experience (Britto & Rush, 2013; Keen, 2014; Neuhauser & Weber, 2011). For example, Lone Star College implemented an online tutoring service with their distance education students (Britto & Rush, 2013). Students expressed favorable views of the service, with 95% of students indicating they would recommend using it. In these sessions, students scheduled a private session with the tutor or submitted questions online to receive feedback. Furthermore, Neuhauser and Weber (2011) found that the students strongly valued the interaction and support they received from their coach. The students often built relationships with their coaches through both formal and informal interactions.

While virtual tutoring has shown to be favorably perceived by students, research also indicates that it is not always well-attended (Keen, 2014). Kalogiannakis and Touvlatzis (2015) found that students were motivated by negative emotions, primarily stress and despair, to contact a tutor for support. In their study, the tutor contacted students during the academic year via email or telephone to clarify or discuss issues related to their course content or specific assignments. The authors also found that when the students had positive emotions about their studies, they were less likely to reach out for support, which is in alignment with the previous literature.

Student Perception of Online Learning Support

Student success depends not only on the quality and scope of the academic courses, but also on the supports that are provided. Providing a supportive learning environment is a crucial consideration when developing an online course, as limited student support has been shown to have a negative impact on student retention (Conceição & Lehman, 2016). Lee, Srinivasan, Trail, Lewis, and Lopez (2011) suggested that developers of online

programs provide multiple options of support for students and ensure that this support is easy to access. The authors suggested that the same type of support is not suitable for all types of learners and that providing varied support approaches would help to promote the students' learning and course satisfaction.

Timely feedback from faculty and support staff was found to have a positive impact on students' engagement in their learning (Brinkworth et al., 2009; Howell et al., 2004; Mah, 2016). Hajibayova (2017) found that students valued regular interaction with their instructor through various modes of communication. The researcher found that students preferred weekly or semi-weekly communication through email, course management tools, and virtual or face-to-face office hours. The students felt that communications with their professor regarding course content and feedback on assignments were an important aspect of their learning. Kuo and Belland (2016) found that learners' interaction with the content was the most important predictor of student satisfaction, followed by interaction with their professor. The authors suggested integrating appropriate multimedia to enhance interactions with course materials. Varying the course through multimedia content (such as videos, recorded lectures, and interactive assignments) was found to be the most effective strategy to support learning. The authors also found that the course content should be organized and easy to navigate or access and that an introduction or training on the course technology should be provided.

Research further suggested that students prefer faculty interaction in online environments and expect clear instructional direction and clearly articulated goals for the course (Chyung & Vachon, 2013; Wolsey, 2008). Kebritchi et al. (2017) stated that to minimize the students' confusion, course rules, policies, due dates, and instructions should be noticeably detailed. Lack of these elements can cause confusion and unnecessary frustrations with the learning environment. Wolsey (2008) found that students value and

seek out guidance from their course instructors. The author suggested providing rubrics for course assignments and providing direct and insightful feedback. The use of rubrics encouraged students to focus on exploration and improvement. However, the author also warned that overly specific feedback can drive an overemphasis on grades and scores, rather than deep learning of course concepts.

Nontraditional Student Support

The increase in enrollment of nontraditional students creates new opportunities and challenges for providing support for all students. Research has suggested that the support needs of traditional students largely differ from that of the nontraditional student (Benshoff, 1991; Giancola et al., 2009; Kenner & Weinerman, 2011; Knowles et al., 2011; Thon, 1984). Nontraditional students often face additional obstacles that the traditional student does not face. Therefore, understanding the characteristics of the nontraditional student is important in order to provide appropriate supports that contribute to the student's success in attaining their desired credential (Ishitani, 2006).

Research has shown that nontraditional students typically have high attrition rates (Kenner & Weinerman, 2011). Muench (1987) found that adult learners often have trouble juggling the roles of student, employee, and family member; they also struggle with fears of failure and self-doubt. These challenges impact their performance in academic programs. Nontraditional students can also be more vulnerable to external obstacles that result in a greater risk of withdrawing from their studies (Giancola et al., 2009; Gregory & Lampley, 2016; Ishitani, 2006).

Research has also found that when adult students were able to overcome their obstacles they tend to have higher completion rates than traditional students once they are invested and committed to their education. Gregory and Lampley (2016) found that

nontraditional adult students tended to succeed in online courses at higher rates than other students in their study. Similarly, Wright, Marsh, and Miller (2000) found that when nontraditional students become comfortable in an environment, they were more likely to have long-lasting learning. Nontraditional students often enter into postsecondary education for personal growth; therefore, they generally have a goal to accomplish. Consequently, research has found that nontraditional students tend to have higher motivation levels compared to traditional students (Arjomandi, Seufert, O'Brien, & Anwar, 2018; Kasworm, 2008; Quiggins et al., 2016; Stoessel, Ihme, Barbarino, Fisseler, & Stürmer, 2015; Woods & Frogge, 2017).

Research has identified steps that can be done on part of institutions to assist nontraditional students in overcoming obstacles so they may flourish in their academic programs. Ryder (1994) suggested that nontraditional students need practical guidance and advising that allows them to plan for scheduling constraints that traditional students do not face. The author further found in his study, that 66% of nontraditional students complained their programs lacked clear and specific information on which they could make accommodations for their schedules. Furthering this idea, Roberts (2011) found that nontraditional students struggle with what to expect and what is expected of them as students. He also found that how the students were taught was incongruent with what the students' expected leading students to consider dropping out. The students wanted more direction and guidance on their course lessons. These studies highlight the need for clear instructions at the program and the course level. However, more research is needed to further identify how institutions can support nontraditional students.

It is a challenge for colleges and universities to balance support for the needs of traditional and nontraditional students. Online programs must be adaptable to the diversity of concerns and needs of those enrolled. Furthermore, program administrators and faculty

need to understand nontraditional students' distinctive learning needs to create a learning space that ensures that all students feel supported. This begins with building a program and course design that is developed with the student's needs in mind (Tait, 2000). There is a need for further research on how to manage the support needs of the growing body of nontraditional students in online coursework. As the number of adult learners entering into postsecondary education continues to increase, it is important to understand strategies to support these individuals and increase their persistence.

SUMMARY

A major question that institutions of higher education are attempting to answer is how to keep students enrolled and persisting in their programs. One method for addressing this question is the implementation of services, initiatives, and technologies to support students in maintaining their progress in academic work. Learning support systems that provide both academic and nonacademic support have tremendous potential to aid students' learning and improve student persistence in online education environments. The design and structure of these systems aims to improve student persistence by proactively engaging with students throughout their learning experience. Student success depends not only on the quality and scope of the academic courses, but also on the supports available; limited student support has shown to have a negative impact on student retention. Thus, providing a supportive learning environment is crucial for the development of online programs as.

This review of the literature further focused on three areas related to online learning support systems: advising support, faculty support, and students' perceptions of support. Academic advisors are an essential element for student's success and are often overlooked in the design of online learning programs. The advisor role is central to students' emotional

experience of education; advising helps students feel a sense of belonging and connection to the learning environment. In addition, there is growing evidence that intrusive interventions are effective in increasing student persistence in online learning. Timely personal supports that target students' specific needs have been shown to yield positive results.

Faculty must balance both a knowledgeable, academic role and a caring, nurturing role in their interactions with students. Feedback on course activities and a quick response to email are often found to be the most beneficial forms of faculty support for students and can have a positive impact on student's engagement in their learning. Methods of faculty support for students in online environments include faculty interaction, feedback on assignments, virtual office hours, or access to virtual tutoring for additional assistance. Research further suggested that students prefer faculty interaction in online environments and expect clear instructional direction and clearly articulated goals for the course.

The increase in enrollment of nontraditional students creates new opportunities and challenges for educators to provide support for both traditional and nontraditional students. This increase also requires institutions to re-think the focus of academic and support programs that are offered. Nontraditional students can be more vulnerable to external obstacles that result in a greater potential to withdraw from their studies. However, research has also found that adult students have been shown to have higher completion rates once they feel committed to and invested in their learning.

Chapter 3: Methods

The complex problem of student attrition continues to be a significant concern for higher education institutions (Allen & Seaman, 2014; Astin, 1984). Accordingly, understanding how to increase student persistence is a high priority for many institutions. Research has shown that student support plays an essential role in students' satisfaction and persistence in online learning (Dowling & Ryan, 2007; Simpson, 2004; Tinto, 2017). Interaction with instructors, peers, and learning resources has been identified as a critical factor in students' success and satisfaction (Artino, 2007; Bolliger, 2004). Providing learning support that helps students overcome barriers and cope with the demands of learning online is a critical consideration for online course development. Learner support systems that provide appropriate assistance and coaching to improve students' persistence have been shown to have a positive impact on the student's success (Baker & Robnett, 2012; Kuh et al., 2008). Insufficient research exists on the implementation of learner support systems and how students perceive the support they receive, especially for adult learners (Tait, 2000).

To address this gap in research, this descriptive case study analyzed the implementation of a learner support system in an online program in which three-quarters of the students are nontraditional. Through the use of qualitative methods, the study described the experiences and perceptions of faculty, academic advisors, and students who administered or received support through a learner support system. The study is a common case in that it explored the first semester of the launch of a new online degree program that was developed in partnership with a centralized innovation unit at the campuses' university system. The focus of this research study was to also understand and illuminate support strategies that faculty and academic advisors used to optimize student interaction and persistence. This study sought to uncover faculty and advisors' perceptions of the

complexities and challenges they face as they provide support to students. This study contributes needed research to the field of education by exploring the planning and implementation of student support as a method of improving student persistence in online education. Lastly, the study sought to identify the types of support that students find most helpful to their learning in an online environment in order to ensure that the support provided is useful and meaningful. The study analyzed the perceived efficacy of support strategies designed to promote student persistence in online learning environments. The study findings offer insights related to faculty and advisors' methods for supporting students and creating a cooperative system of support in an online learning environment.

This chapter describes the research method and theoretical framing for this study. It also describes the research design, the study participants, the research protocol, the approach to data analysis, and the trustworthiness of the results.

RESEARCH QUESTIONS

The following research questions guided this study:

1. How was the learner support system for the online Cyber Security program implemented in the Fall 2017 semester?
2. How did the academic advisor perceive their role in providing support to the enrolled students?
    a. What strategies did the advisor use to support the enrolled students?
    b. What challenges did the advisor face in supporting students in the online program?
3. How did the course faculty perceive their role in providing support to the enrolled students?
    a. What strategies did the course faculty use to support the enrolled students?

b. What challenges did the faculty face in supporting students in the online program?

4. How did the enrolled students perceive the support provided in the online Cyber Security program?
    a. What obstacles impeded the students' ability to complete their coursework?
    b. Are there any reported differences between perceptions of support among traditional and nontraditional students?

POSITIONING

During the recession in the late 2000s, I worked in the training department for one of the few companies that were hiring during a time of mass layoffs. My role was to educate new employees on their job duties and about the company's policies and procedures. During this time, I observed many individuals who were forced to step into new job roles in which they had little previous experience. These individuals were typically adults with families who looked to them for financial support or individuals who had left long-standing jobs for one industry only to find work in a new company with vastly different technology and product lines. These individuals faced external pressures that only compounded the stress of learning their new job duties. It was a struggle for many to adapt to the new environment and the new responsibilities required to do their job.

Further, the department in which I worked had limited staff, time, and resources available to assist the new employees. The training staff, myself included, worked within the parameters that were afforded to us and supported the new employees as best we could. However, unfortunately, some of the new individuals quit or were let go because they could not learn the job duties or perform to the required metrics. As a result of my experience teaching these struggling individuals, I became interested in ways to improve support

strategies for students. Also, I believe there are two sides to every story. In addition to exploring students' perspectives on academic support, I feel it is also important to understand the perspectives of the educators and staff who provide that support. These individuals are often working within their own constraints, whether these are limitations on what they can offer, their workload, or their own philosophy. Therefore, my prior experience shaped my interest in educational support strategies, as well as my commitment to examining the full picture of faculty, staff, and student perspectives.

Innovations and emerging technologies have propelled an increasing demand for individuals to develop knowledge skills and advanced abilities in order to be successful in the twenty-first century. Technology has had an influence on every facet of society, from the way we communicate, work, and commute to the way we learn. New avenues to receiving an education, such as online or distance learning, have increased in recent years, and there has been an influx of individuals seeking educational options that can flexibly accommodate their already-demanding lives (Synder et al., 2019). Online learning provides flexible opportunities for receiving an education and offers many affordances that the traditional model of education does not allow (Willcox, Sarma, & Lippel, 2016). The shifting characteristics of the student population in postsecondary institutions are challenging traditional norms and conceptions of who is a "college student." Therefore, widened access to education at all levels is needed and for all age groups. By understanding who is being served, institutions of higher education can improve support for all individuals that are striving for better lives through education.

Technology also provides innovative ways to support and aid students in order to increase their persistence. This support can make a significant difference for students (Jones-Schenk, 2014, Tinto, 2006). Therefore, this study aimed to understand and illuminate support strategies that faculty and academic advisors used to optimize student

persistence and success. The study also sought to understand the students' preferences and the obstacles they face, as well as their perceptions of the interventions administered, in order to optimize support strategies in future programs.

THEORETICAL FRAMEWORK

Tait's model for learner support systems provided the conceptual frame for this study. This framework was used during the data analysis to understand the functions of the Community of Care. Tait (2000) maintained that student support needs to be understood in terms of the range of its services and also in terms of its functions. He posited that support is pragmatically distinguished by the totality of the activities that are provided. In using Tait's conceptual frame in this study, the learner support system was reviewed from a macro and micro level to gain an awareness of the entire system and its activities. First, at the macro level, the system's functions as a whole were reviewed to understand the intent of the Community of Care and its support roles. Then, at the micro level, the perspectives of those providing and receiving support were investigated to understand the inner workings of the system. By looking at the learner support system from these two vantage points, I was able to make recommendations for providing support to students that are based on the evidence presented.

Tait (2000) identifies three functions of student support: cognitive, affective, and systemic. The cognitive function suggests that support should provide mediation of course materials and resources to support the student's learning. The affective function states that the learning environment is supportive and enhances self-esteem. Lastly, the systemic function recognizes that administrative processes and information systems should be effective, transparent, and student-friendly. Tait (1995, 2000) also offers a framework for the development of student support systems. The framework includes understanding the

(1) student's characteristics, (2) course or program demands, (3) geography constraints of the institution and students, (4) management of support, (5) technological infrastructure, (6) the ability to scale. The student body makeup and understanding the characteristics of the students that need support is an essential element to the development of a learner support system (Dwyer et al., 2013; Evans, 1994; Tait, 2000). The elements of support provided must relate to the students' needs and abilities. Furthermore, it is essential that the technology that is used to provide support be accessible to all students. Students who do not have access or are unable to use the technology may feel excluded and not participate.

Support should be specific and aid in the demands of the course or degree program (Tait, 2000). The complexity of the course content may require tutoring or peer support to help students with learning the content. Considerations should be made by carefully reviewing the course materials and assessments to ensure that support is provided when needed. Student support encompasses a broad range of activities that complement the course resources to aid the student's learning such as tutoring, correspondence, telephone calls, counseling, advisors or coaches, supplemental instruction, or interactive online conferences (Jacklin & Le Riche, 2009; Tait, 1995, 2014). Tait also suggested that the support system should be scalable and designed with consideration for the number of students enrolled in the program. If the number of students enrolled exceeds the support structures in place, this mismatch will significantly impact the quality of the support provided and the students' satisfaction with their program. When designing support systems, the geography of the students and the institution must also be taken into consideration (Tait, 2000). While online learning diminishes the distance between the learner and the institution, considerations must be made when developing supports such as synchronous learning. Efforts should be made to provide multiple opportunities that

account for students' different geographical locations and time zones. Lastly, the institution should have a management system in place to track the students' progress and intervene with appropriate support before a student falls significantly behind. Utilizing student data to identify students who may need assistance is central to the effective delivery of quality services.

RESEARCH CONTEXT

The university of interest in this study is part of one of the largest systems of public universities in the United States. The system comprises 14 institutions with a total enrollment of more than 217,000 students. In 2015, the System Chancellor laid out a series of nine missions. One of those missions tasked the university system and its campuses with increasing efforts to employ innovative partnerships, initiatives, and technology that help students stay on the path to graduation. The aim of this effort was to increase graduation rates and prepare career-ready graduates who can immediately contribute to society and their communities. The university system implemented the Office of Innovative Education (OIE) (pseudonym) to foster innovation and transformation in higher education throughout the State. This department was charged with advancing the missions laid out by the System Chancellor by working in partnership with universities throughout the system. The OIE worked to develop online programs that increase accessibility and affordability, improve student learning outcomes, and increase the number of state residents who hold a college degree or other advanced educational credentials. The department also worked to advance innovative educational pathways to student success and to design and deploy a forward-looking educational infrastructure throughout the University System.

To accomplish these objectives, the OIE sought proposals from regional campuses to develop degree programs that leverage innovation and assist universities in embracing modern and emerging teaching strategies and technologies. The College of Business (CoB) at the university of this study submitted a proposal and received a grant from the OIE to develop the online degree program for a Bachelor of Business Administration (BBA) in Cyber Security. The online program was the department's first endeavor to provide a fully online degree. Historically, this program has been an established residential degree program for many years and is a top-ranked program in the United States. The CoB elected to augment the residential program by developing a completely online version to extend its offering to a broader scope of students who would otherwise be unable to enroll. The online degree program was developed in partnership with the OIE.

Partnership between the OIE and the University

The partnership between the CoB and the OIE focused on three main areas. The first area encompassed the development of the Cyber Security courses for the program, which involved converting the residential program courses to online courses. The second area envisioned the development of a learner support system that provided students with academic and non-academic supports enfolded into their online experience. The OIE named this support system the "Community of Care." The Community of Care was designed to oversee the student's lifecycle from the moment they become a prospect for enrolling in the program throughout their course completion and ultimately graduation (or the achievement of other academic goals). The last focus area included the development of technology that would support the Community of Care. This technology included the development of an early alert dashboard that would make it easy for the advisor, course faculty, and support staff to communicate with students and view their progress and

performance. This technology would have provided alerts to the advisor and course faculty of students who were falling behind or at risk of failing, so that support interventions could be administered to aid their persistence.

Community of Care Development

To begin the development of the Community of Care, leadership from the OIE held a series of discovery and planning meetings with program administrators and representatives from the university and the CoB Cyber Security department. In addition to meetings with the CoB representatives, the OIE convened meetings with various agencies across the university to define the student's lifecycle in the online program and determine how it would be managed. This lifecycle outlined the students' interactions and the support they would receive from enrollment through graduation. These meetings involved the registrar, admissions, career services, financial aid, and the advising departments. The OIE leadership brought findings from those meetings to the CoB administrators to further define an exemplary support strategy and specify which roles would be included to support the student's trajectory in the online Cyber Security program.

Furthermore, the OIE brought in an external, third-party agency that specialized in reimagining products and services for higher education to develop a new strategy for the online program. The company worked with the OIE and the CoB representatives to understand the current student experience and then reimagine it by building a new conceptual model. In the cross-functional meetings, the CoB leaders discussed the current established processes and benchmarks for the residential program, while the OIE presented potential strategies for meeting those benchmarks in the online environment. By the end of the meeting series, all groups had agreed upon a baseline for what would be implemented into the Cyber Security online degree program.

Online Course Development

As part of the partnership between the two entities, the OIE provided dedicated instructional designers, learning experience architects, and software developers who were committed to designing a best in class online Cyber Security educational experience. These individuals worked with the program administration and faculty to design the online learning experience. The development encompassed the entire program, which included the core courses required by the university (42 hours), courses required by the business school (referred to as the "common body of knowledge" (CBK)) (45 hours), and the Cyber Security major courses (33 hours). The development occurred in phases. In the first phase, OIE leadership met with CoB Administrators and selected staff and faculty to understand the needs of the online program and overall structure of what would be offered. This structure included the features and components that would be required to administer an online Cyber Security program successfully (e.g., proctoring services, technology requirements). The second and third phases included dedicated instructional designers and learning experience architects, who worked with the course faculty to design and develop the online version of their residential course.

In the course design and development phase, the instructional designers and course faculty worked together to establish learning outcome statements, course flow, activities, assessment strategies, and course modules. Then, the OIE instructional designers developed the course content from the direction of the course faculty. The course instructors provided guidance and feedback throughout the entire process. The OIE Learning Architect oversaw the design and development, providing input throughout to ensure that the learning experience was engaging and interactive.

Early Alert System

The OIE envisioned the development of an early alert system that was designed for the academic advisor, course faculty, and support staff to monitor the student's progress and performance and to help students stay connected within the program. An algorithm was in process of being developed that would have utilized student historical, performance, and log data to identify at-risk students and then displayed it in a dashboard. Upon logging into their respective dashboards, faculty and the advisor would have been able to keep abreast of the current status of their students. The display would have given the advisor and faculty the ability to easily view at-risk students so that support interventions could be provided. Another advancement envisioned by the OIE is that students would have had their own dashboard, in which they would have had the ability to view their academic standing as well as any upcoming, overdue, or successfully completed assignments. However, before the development of the algorithm and dashboard was completed, the OIE office was closed. The following section describes the effects of this closure on the online Cyber Security program.

OIE Closing and Impact

During the planning of the online Cyber Security program for the Fall semester, and a few months before the start of the semester, the Board of Regents for the university system made the decision to close the OIE due to a system-wide reorganization and budget reallocation. As a result, the CoB made the decision not to implement the early alert system that would have prompted course faculty and advisors to reach out to at-risk students. This decision was made because the CoB no longer had adequate technological support for the infrastructure or system developers to complete the development of the early alert system. However, the University moved forward with implementing the Community of Care and

the support strategies that were promoted by the OIE with some adjustments. The dashboard developed by the OIE would have benefited the Community of Care and provided automated early alert triggers to the teaching faculty and academic advisor. However, this dashboard was not a pre-requisite for Community of Care to function.

This study focuses on the implemented version of the Community of Care in the Fall semester. There are elements of the original design that influenced the actions of the study participants, even though they were not implemented. These elements will be discussed.

ROLE OF RESEARCHER

My research interests have focused on learning in virtual environments and how to help students excel and persist. I have conducted several research studies on strategies to aid learning and student's perception of virtual environments. As a graduate student, I accepted the opportunity to work in the OIE office, which focused on elevating student success in online education. I worked as a graduate student worker at the OIE prior to the start of this study but was no longer employed with the office during the time that data was collected. As a graduate worker, I assisted in the development of the online courses but did not work with the student lifecycle management group that developed the Community of Care. However, I was aware of the learner support system and the experience it created to support students. The Chief Innovation Officer (CIO) at the OIE, who was not a study participant, granted authorization for the study to be conducted at this office. I gained access to the OIE and the staff who developed the Community of Care through being familiar with those in the office. Working in the OIE office as a graduate student worker allowed for a level of access to the OIE staff that otherwise may not have been possible. It also allowed for deeper knowledge about the Community of Care design and the work done

by the OIE. This study focused on the work and perceptions of those affiliated with the College of Business, which was not in my purview before the start of the study. The CIO also advised me to contact the university's CoB Associate Dean for online Cyber Security program to gain access to the university. Site approval was obtained for both the OIE and the University CoB Cyber Security program, and the study was approved by the Institutional Review Board (IRB).

RESEARCH DESIGN

Qualitative research entails a focus on process, understanding, and the meaning of a phenomenon (Merriam, 2009). Understanding a phenomenon from a study participant's perspective, including the meanings they derive from a situation, requires asking important questions; thus necessitating qualitative inquiry (Merriam, 2002). This study described the implementation of a learner support system and the strategies used by faculty and academic advisors to support students. Additionally, the study described the students' perception of the support provided. A qualitative method was chosen because it provides smore evidence for studying the research questions, and it also provides a practical perspective. Denzin and Lincoln (2011) defined qualitative research as a "situated activity that locates the observer in the world" (p. 3). Investigating multiple perspectives throughout the online program launch enabled me to describe the human experience of delivering and receiving support strategies and being a part of an organized system. Through the use qualitative research, the participants' world became visible (Denzin & Lincoln, 2011)

Understanding the study phenomenon required an investigation into the realities and experiences of the study participants (Creswell, 2014). I employed a constructionist epistemology, which asserts that "meanings are constructed by human beings as they interact with the world they are interpreting" (Crotty, 1998, p. 43). As an interpretive

qualitative researcher, I investigated how the faculty, academic advisor, and students interpreted their social world and how they constructed their reality (Creswell, 2014; Denzin & Lincoln, 2011; Merriam, 2002). Merriam (2002) posited that the qualitative researcher is interested in understanding the multiple interpretations and constructions of reality at a particular point in time and in a particular context. Also, Stake (1995) posited that qualitative researchers do not confine interpretation to the identification of variables and instruments, but rather "emphasize placing an interpreter in the field to observe the workings of the case, one who records objectively what is happening but simultaneously examines its meaning and redirects observation to refine or substantiate those meanings" (p. 8). The goal of this research was to understand the multiple realities from the perspectives of the study participants using a descriptive qualitative case study methodology as outlined by Yin (2014). To accomplish this understanding, I became involved in the realities of the study participants and interacted with them in meaningful ways (Denzin & Lincoln, 2011; Yin, 2014). In doing so, I identified strategies to implement a learner support system and support students in an online program.

Qualitative case study research provides rich description and analysis of a bounded system (Merriam & Tisdell, 2016). Case study research designs originate from the desire to understand a complex social phenomenon (Yin, 2014). Yin (2014) describes case study research as an investigation of a contemporary phenomenon (i.e., the case) that allows investigators to retain a holistic and real-world perspective. A strength of case study is its ability to deal with multiple types of evidence (e.g., interviews, observations, and surveys) to investigate the unit of analysis (Yin, 2014). Flyvbjerg (2011) suggested that case study research is important "for the development of a nuanced view of reality, including the view that human behavior cannot be meaningfully understood as simply rule-governed acts"

(p.303) and that case studies provides an in-depth understanding of the phenomenon under investigation.

The purpose of a descriptive case study is to describe the case in its real-world context (Yin, 2014). This case study shows how a learning support system that was implemented in an online degree program can increase student's engagement and persistence in their coursework. It also describes how the faculty and advisor understood and interpreted their responsibility in supporting students in this online environment. The study also describes the student's perspective of receiving support in this setting. The next section describes the case under investigation in this study.

The Case

The identifying characteristics of a case study are the case (or unit of analysis) under study and the boundaries that surround the case (Merriam & Tisdell, 2016; Stake, 1995; Yin, 2014). Stake (1995) described a bounded system as the boundaries of the case that are constrained by time and place. The online Cyber Security online degree program and its offering for the Fall 2017 semester provided the boundary for this study. This program was chosen because of its innovative strategies and its emphasis on providing multiple levels of proactive support to students in online education. The case in this study was the online program's learner support system, the Community of Care, which aimed to strengthen students' learning and persistence through the administration of academic and nonacademic support. The study identified and described the components of the Community of Care that were implemented by the CoB in the Fall semester and the role that faculty, advisors, and other personnel had in providing support.

The research followed an embedded single-case study research design. An embedded design involves studying the case at more than one level, which facilitates a

more in-depth analysis of the case (Yin, 2014, 2018). Utilizing an embedded design allowed for a deeper understanding of the roles and perspectives of each subunit in the case. The embedded subunits included (1) academic advisor, (2) the course faculty, and (3) the students. Figure 1 illustrates the embedded single case study research design employed in this study. The academic advisor and the course faculty had the role of delivering support, and the students received the support. The study investigated faculty and staff members' perceptions of the learning support system, as well as the challenges they faced in delivering support to students. These practitioners' perspectives are key, since they are the front line and the face of support to students. The study also investigated the perspectives of the students enrolled in the online Cyber Security program. By examining these three perspectives, a holistic vantage point for analyzing the learner support system was obtained.

The unit of analysis is a common case in which the objective is to "capture the circumstances and conditions of an everyday situation" (Yin, 2014, p. 52). The aim is to analyze the strategies and perspectives of each subunit to identify approaches to support students in online education. An embedded design allowed for the investigation of each perspective separately, thereby allowing for recommendations based on the multiple perspectives.

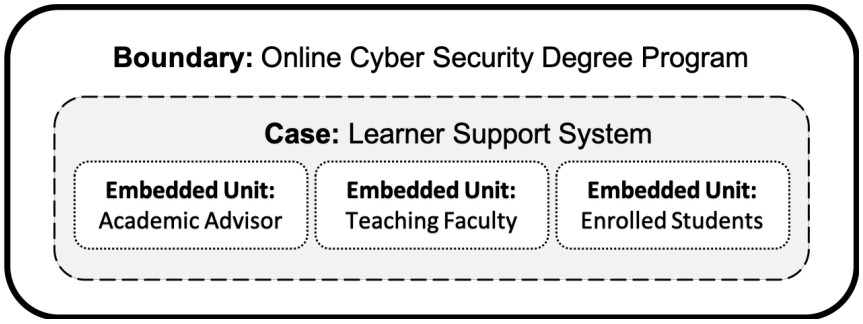

Figure 1: Embedded Single Case Study Research Design

The study focused only on the courses that were implemented in the Fall 2017 semester. The online courses included three courses that were required for the Cyber Security major and three that were required by the business school, referred to as the "common body of knowledge" (CBK). The CBK courses are required of all students in the business school, regardless of their concentration. The Cyber Security courses offered in the Fall semester were foundational courses for the program. The courses included: an introduction to the field of Cyber Security, an introduction to programming concepts course in which the students learned the basics of Java programming, and an introduction to the principles of information systems for management. The three CBK courses included an introduction to microeconomics; a study of legal, social, and ethical issues in business; and an introduction to the principles of marketing. Table 1 describes each course implemented in the Fall 2017 semester.

Table 1: Courses Implemented in the Fall 2017 Semester

Course Name	Description
*Inside Cyber	The course introduces the discipline of cyber security with an emphasis on the security, business, and technology as well as the Cyber Security career field. The course is a high-level overview of the benefits of information systems and technology in addition to the associated challenges and risks.
Introduction to Programming Concepts + Lab (JAVA 1)	The course introduces programming concepts with object-oriented language. Addresses basic elements of programming concepts and object-oriented programming principles.
*Principles of Information Systems Management	The course provides systematic procedures for developing information systems and includes coverage of hardware and software tools, information structures, and formal problem-solving techniques. The course also covers issues related to organizational controls, security, and globalization as a result of changing technologies.
*Principles of Marketing	The course introduces basic principles of marketing. This includes an examination of market analysis methods and the integration of communication, distribution, and pricing strategies to achieve goals.
Introductory Microeconomics	The course introduces the economic theory of decision making by consumers and business firms. The course also introduces the student to domestic and international market systems including their roles in allocating goods and services, how to analyze the markets, and problems that occur when the market fails.
Legal, Social, and Ethical Issues in Business	The course provides a study of the legal, social, and ethical responsibilities of business organizations and the people who work in those organizations.

*The courses explored in this study

STUDY PARTICIPANTS

The participants of this study were identified because of their role in the Community of Care and the online degree program. Only data from individuals who agreed and signed a consent form approved by the IRB were included in the study results. Interviews were requested with four groups of individuals who were identified due to their involvement with the Community of Care, whether in a leadership capacity, in development and implementation, or in delivering or receiving support. These groups included (1) the OIE staff that was responsible for development, implementation, and support for faculty, (2) University administrators, the academic advisor, faculty, academic coaches, and assessment specialists, (3) students who responded to a survey regarding their perceptions, and (4) students who agreed to an optional interview. Table 2 lists the study participants, their direct or ancillary involvement with the Community of Care, and their contribution to the research study.

Table 2: Study Participants

Study Participant Title	Pseudonym Name	Involvement with the Community of Care	Contribution to the study
OIE Participants			
Director of Academic Experience	Audrey	Lead the development and the implementation of the Community of Care at the University	Interviewed once at the beginning of the semester
Assistant Director of Faculty Development	Natalie	• Lead the training for faculty, academic coaches, and assessment specialist in preparation for the launch of the online courses • Provided support to faculty, academic coaches, and assessment specialist throughout the semester	Interviewed once mid-semester
Learning Architect	Maya	• Oversaw the development and production of the online courses • Provided support to faculty as needed throughout the semester	Interviewed once mid-semester
University Participants			
College of Business, Associate Dean of Undergraduate Studies	Dr. Wilson	Dean of the online Cyber Security program	Interviewed three times throughout the semester: once at the beginning, once at mid-semester, and again at the end of the semester.
Administrative Program Director for Online Programs, University Office of Online Learning	Jack	Oversees academic advising for the online Cyber Security degree program	Interviewed once at the beginning of the semester.
Academic Advising Coordinator for Online Programs	Cynthia	Dedicated academic advisor to the online Cyber Security students	Interviewed twice – once at the beginning of the semester and again at the end of the semester.

Table 2: Study Participants (continued)

Study Participant Title	Pseudonym Name	Involvement with the Community of Care	Contribution to the study
Faculty • Inside Cyber • Principles of Information Systems Management • Principles of Marketing	• **Inside Cyber:** Dr. Anderson • **Principles of Information Systems Management:** Dr. Perkins • **Principles of Marketing:** Dr. Clark	Instructor for the online course	Interviewed mid-semester with a short follow-up interview occurring at the end of the semester.
Assessment Specialist for the course Legal, Social, and Ethical Issues in Business	Noah	Grader for the Legal, Social, and Ethical Issues in Business course	Interviewed once at the end of the semester.
Student survey respondents	n/a	33 students enrolled in the online Cyber Security program	Survey distributed at the end of the semester.
Student interview participants	n/a	Seven students that agreed to participate in an optional interview.	Interviewed once each at the end of the semester.

OIE Participants

A semi-structured interview was conducted with four individuals at the OIE who were involved with either the development of the Community of Care, the development and training of the advisor, faculty, and supporting staff roles, or the development of the courses and learning experiences. The interview participants included the Director of Academic Experience, the Assistant Director of Faculty Development, and one of the program's Learning Architects. The Director of Academic Experience and the Assistant Director of Faculty Development were highly involved in the design and implementation of the Community of Care at the university. They both also worked directly with the course

faculty to provide training and support for teaching online. The Learning Architect led the instructional design process, working directly with the course faculty and OIE instructional designers to develop the online courses. These individuals were chosen due to their intimate knowledge of the Community of Care's development or their direct involvement with the faculty and support staff. They contributed background knowledge on how the Community of Care originated and provided insight into the vision of the learner support system. They also provided insight into the development of the course faculty and advisors, describing how these individuals were trained or prepared for the Community of Care.

University Participants

Individuals from the University's CoB Cyber Security online degree program were identified as study participants. I contacted the Associate Dean of Undergraduate studies to gain approval to conduct research at the University. The Associate Dean then identified the additional study participants who worked directly or indirectly with the online Cyber Security program at the University. These participants included two individuals from the online program's institutional support services department, the Administrative Program Director for Online Programs and the academic advisor for the online students. The Administrative Program Director oversaw the administration of academic advising and support for the online program. He made decisions about the direction of advising and the responsibilities of the academic advisor. Three faculty members who led online courses were also interviewed. Interviews were requested of all six course instructors, but three declined to participate. Therefore, the study findings focused on the three courses and faculty members that chose to participate in the study. Interviews were also requested of the assessment specialist and the academic coaches. These two roles were identified as a

part of the Community of Care that assisted faculty in supporting students. One assessment specialist was interviewed, but the academic coaches declined to participate.

These participants from the University were chosen because of their direct involvement with the Community of Care. Interviewing individuals from multiple angles of administration, advising, faculty, and supporting staff allowed for a holistic view of the learner support system and the perspectives of those who were providing care to the students.

Enrolled Students

For the Fall 2017 semester, there were 181 program applicants, and 149 were admitted to the program. At the time of Fall census, there were 97 students enrolled. Census day is the 12th day of class and reflects the day the student is counted as enrolled for the Fall semester by the university. After this day, students that drop a course are considered withdrawn and receive a "W" on their transcript. A survey was distributed to the enrolled students to investigate their perceptions of the support they received in their online program. At the time of the survey's distribution, seven students had withdrawn from the program. Therefore, the survey was administered to the 90 students who remained enrolled. The university provided the enrolled students' email addresses for survey dissemination. The survey was distributed to students at the end of the semester, and four follow-up attempts were made to maximize participation.

Table 3 reflects the demographic data of the 90 students enrolled in the online program at the time of the survey's distribution. The online Cyber Security students consisted of primarily nontraditional students. Analysis revealed that three-quarters (76%, $n = 68$) of the students were aged 25 and older. The number of nontraditional students by age group included 21 students (23%) who were aged 25-29, 28 students (31%) who were

aged 30 to 39, 13 students (14%) who were aged 40 to 49, and six (7%) who were aged 50 to 59. Of the total traditional aged students enrolled (24%, *n* = 22), 17 (19%) were aged 20 to 24, and five (6%) were aged 19 or younger.

Over half of the students enrolled in the online program were transfer students (63%, *n* = 57). The university defines this classification as a student who transfers either from another higher education institution or from another major at the same university. Twenty-eight percent (*n* = 25) of students were post-baccalaureate students (i.e., already held a college degree), and 9% (*n* = 8) were freshmen. Furthermore, a majority of the online students were enrolled part-time (72%, *n* = 65) (i.e., enrolled in 11 hours of courses or less), and 28% (*n* = 25) were enrolled full-time (i.e., enrolled in 12 hours or more). The data further revealed there were 64 males (71%) and 26 females (29%) enrolled. Review of the student's ethnicity revealed that 42% (*n* = 38) were Hispanic, 39% (*n* = 35) were Caucasian, 7% (*n* = 6) were Asian, 7% (*n* = 6) were African American, and 2% (*n* = 2) were Native American or Native Alaskan. Ethnicity was unknown or not reported for 3% (*n* = 3) of participants.

Table 3: Enrolled Student Demographic Data for Fall 2017

Student Characteristic (n = 90)	Number of Students enrolled
Classification	
Freshman	8
Transfers (Sophomore through Senior)	57
Post-baccalaureate (Previously obtained a college degree)	25
Ethnicity	
Native American or Native Alaskan	2
Asian	6
African American	6
Hispanic	38
Caucasian	35
Unknown or not reported	3
Gender	
Male	64
Female	26
Age Range	
19 and under	5
20 to 24	17
25 to 29	21
30 to 39	28
40 to 49	13
50 to 59	6
Enrollment Status	
Full-time (enrolled in 12 hours or more)	25
Part-time (enrolled in 11 hours or less)	65

Survey Respondents

A total of 33 students responded to the student perception survey. Table 4 provides the demographics and characteristics of the 33 students who participated. The data revealed that for 9% (n = 3) of students, the Fall semester was their first time in college, 15% (n = 5) students were continuing their undergraduate studies, 48% (n = 16) students transferred from another college or University, and 27% (n = 9) were post-baccalaureate students who already obtained a college degree. Additionally, there were 20 male (61%) and 12 female (36%) respondents and one who chose not to report gender (3%). Analysis of the age ranges of the respondents showed that 76% (n = 25) of the respondents were nontraditional students (i.e., 25 and older) and 24% (n = 8) of respondents were traditional students (i.e., 24 and younger). Further breakdown of the ages revealed that 9% (n = 3) of students were aged 19 and under, and 15% (n = 5) were aged 20-24. Six percent (n = 2) of students were aged 25-29, 45% (n = 15) of students were aged 30-44, and 24% (n = 8) of students were aged 45-64. Analysis showed that most of the respondents worked full-time (73%, n = 24),12% (n = 4) worked part-time, and 15% (n = 5) were not employed. The ethnicities identified by the respondents included Hispanic (52%, n = 17), Caucasian (30%, n = 10), Asian (3%, n = 1), and other (6%, n = 2); three participants preferred not to indicate their ethnicity (9%, n = 3). None of the survey respondents identified their ethnicity as Native American or African American.

Table 4: Student Survey Participants' Demographic Data

Student Characteristic (n = 33)	Response
Classification	
First time in college	3
Continuing undergraduate student [University student]	5
Transfer from another college or university	16
Post-baccalaureate (Previously obtained a college degree)	9
Other	0
Ethnicity	
Native American or Native Alaskan	0
Asian	1
African American	0
Hispanic	17
Caucasian	10
Other	2
Prefer not to respond	3
Gender	
Male	20
Female	12
Prefer not to respond	1
Age Range	
19 and Under	3
20-24	5
25-29	2
30-44	15
45-64	8
Enrollment Status	
Full-time (enrolled in 12 hours or more)	16
Part-time (enrolled in 11 hours or less)	17
Employment Status	
Part-time	4
Full-time	24
Not employed	5

Student Interview Participants

A total of seven students agreed to an optional follow-up interview about their experience. Table 5 summarizes the demographics and characteristics of the seven students interviewed. Of the interviewed participants, five were male and two were female. Six students were enrolled full-time and one was enrolled part-time. Additionally, three students were aged from 30 to 44 and four students were aged 45 to 64 and six students were employed full-time and one employed part-time. Four students transferred from another University and the remaining three were post-baccalaureate students.

Table 5: Student Interview Participants' Demographic Data

Student Characteristic (n = 7)	Response
Gender	
Male	5
Female	2
School Enrollment Status	
Full-time	6
Part-time	1
Age Range	
30 to 44	3
45 to 64	4
Employment Status	
Part-time	1
Full-time	6
Enrollment Classification	
Transferred from another college	4
Post-baccalaureate	3

DATA COLLECTION

Data collection for this study occurred from August 2017 to January 2018, approximately six months. The data collected in this study included semi-structured interviews with staff from the OIE, the online Cyber Security program administrators, the academic advisor, the course faculty, and enrolled students. A survey was also administered to students to capture their perceptions of the support strategies provided by academic advising and faculty.

Semi-Structured Interviews

Qualitative research includes understanding a phenomenon from a study participant's perspective and exploring the meanings they derive from the phenomenon. Thus, it requires asking important questions (Merriam, 2002). Therefore, semi-structured interviews were conducted with the study participants. Appendix A lists the interview questions. Interviews with the 10 study participants from the University and OIE were conducted throughout the semester at various intervals. These interviews aimed to understand the vision for the Community of Care, what support roles were established, and the functions of each role. Additionally, interviews with the course faculty and academic advisor were focused on the support strategies used and the experiences of these individuals in providing support in the learner support system. The seven student interviews aimed to further understand the results of the student survey by investigating the students' experiences receiving support from those in the Community of Care, what kinds of support they found most helpful, and what obstacles they faced. This information was essential to provide recommendations on how to support students, particularly nontraditional students, in online learning environments.

To begin, the Community of Care was investigated to understand how it worked and the support roles that were established. To accomplish this, interviews were first held with those who had intimate knowledge of the design and development of the Community of Care. An interview was conducted with the Director of Academic Experience at the OIE to gain an understanding of how the learner support system was envisioned and how the development of the system originated. This individual was chosen due to her direct involvement with these aspects. The Director of Academic Experience originally designed the roles that were included in the Community of Care and introduced the concept to the CoB program administrators. The OIE originally conceived the idea of the learner support system in another online degree program that it had developed at another University. This original model was then customized for the online Cyber Security program.

Second, an interview was conducted with the Associate Dean of Undergraduate Studies for the CoB Cyber Security program. The Associate Dean was closely involved in the development of the online program. He had recently moved into the role of Associate Dean from that of a faculty member but was involved in the program development from the beginning (first as a faculty member, then as the Associate Dean). During this initial interview, the Associate Dean directed me to the additional participants in the study. The two participants from the institutional support services were interviewed next to understand how the Community of Care was implemented in the Cyber Security program. These interviews included semi-structured discussions with the Administrative Program Director for Online Programs and the academic advisor. The Administrative Program Director oversaw the administration of academic advising and support for the online program. He made decisions about the direction of student advising and the responsibilities of the academic advisor. He was directly involved with the administration of the Community of Care roles which included enrollment, success coaching, and advising. Next, an interview

was conducted with the academic advisor that was dedicated to the online students. This interview focused on how students were advised in the online program and the role of the academic advisor in providing support at the beginning of the semester.

When it was determined that the OIE would be closing, an additional interview was conducted with the Associate Dean of the CoB to determine the impact that the closing of this office would have on the online program and the Community of Care. The OIE closing required the Cyber Security program administrators to move some of the operations (e.g., course development) that were being conducted at the OIE to the University. Also, shortly after the start of the semester, OIE staff began to be laid off or left as they found new job opportunities. Therefore, this left gaps in some development areas that the CoB administrators had to fill in and placed unanticipated burdens on the administrators to make decisions in a short amount of time. However, even with these unforeseen problems, they were able to make adjustments with no disruptions to the students' learning.

Next, interviews were conducted with three faculty members mid-way through the semester. This timing allowed the faculty time to experience teaching the online courses and to have experience interacting with their students. After faculty interviews were complete, the OIE's Assistant Director of Faculty Development and one of the online program's Learning Architects both of which worked closely with the course faculty were interviewed. These two were identified after interviews with the faculty as providing support to this role. The Assistant Director of Faculty Development was highly involved in the development of the course faculty to ensure they were trained and ready to teach online. She was in charge of providing the faculty training and assisted them when needed after the start of the semester. The Learning Architect worked with faculty on the course design and assisted with any issues that were found after launch. These two individuals were chosen to better understand the course design and support that was given to faculty

and to determine whether and how this had any influence over the faculty's support decisions.

At the end of the semester, a second interview was conducted with the program's academic advisor to discuss her experience in the Fall semester further. Of all the study participants, the Advisor was impacted the most by the OIE closing. Her role shifted due to disappearing support and the elimination of support strategies that would have been given to students. Therefore, I felt that it was relevant to conduct a follow-up interview to determine how the changes impacted her role throughout the semester, how she had adjusted her support strategies as a result of the changes, and the challenges that she faced. Additionally, a third and final interview was also conducted with the Associate Dean at the end of the semester to investigate his overall perspective of the semester.

Interviewing individuals from multiple angles of the administration, advising, and faculty allowed for a holistic view of the learner support system and the perspectives of those who provided the care.

Student Perception Survey

A survey was administered to students to understand their perception of the support they received in their courses for the Fall semester. The survey was administered using Qualtrics to the entire cohort of students currently enrolled in the online Cyber Security program at the time of dissemination ($n = 90$). Appendix A provides a list of the questions asked in the survey. The survey was distributed to students at the end of the semester with four follow-up attempts. The survey consisted of 23 Likert and open-ended questions adapted from a previously administered survey instrument by Queensborough Community College (QCC, 2013). The original survey instrument developed by QCC provided a 29-item survey that assessed students' perceptions of the administered support interventions

implemented on their campus. The survey was adapted to align with the support strategies that were implemented in the online Cyber Security program.

Student Interviews

Students were asked to participate in a voluntary phone interview to further discuss their experience in the online Cyber Security program. To recruit interview participants, students were asked in a survey question if they would be willing to partake in an optional phone interview. If they agreed they were prompted to provide an email address to be contacted. After the semester ended, an email was sent to those students who provided their addresses in the survey. Those who responded to the email agreeing to participate were contacted via phone to discuss their experience in the Fall semester and the support they received. A total of eleven students responded to the survey question, indicating they were willing to participate. However, only seven of those students responded to the recruitment email and were subsequently contacted via phone for an interview. All interview participants signed a consent form approved by the IRB.

Data Analysis

This section describes the procedures that were taken to analyze the collected data.

Interview Analysis

All interviews were recorded and transcribed for analysis. Each transcription was coded using the software application, NVIVO. Miles, Huberman, and Saldaña (2013) identify a code as a label that is attached to "chunks" of data that assigns symbolic meaning to descriptive or inferential information collected. This study applied coding in two stages

as identified by Saldaña. Saldaña (2013) divided coding into a first cycle and second cycle. The first cycle of coding is the initial process of assigning codes to the data, and the second cycle allows for a way of conducting more focused coding, identifying patterns or categories. In this study, descriptive coding was conducted in the first cycle of coding. During this cycle, data "chunks" were assigned a code (label) to summarize in a keyword or short phrase the essential topic or description of the data (Saldaña, 2013). It is during the first cycle of coding that a codebook was established. Appendix C provides the codebook used in this study. A total of 49 codes were established. Codes were refined as multiple sources of data were coded, and analysis was conducted. For example, after each interview, additional codes were added that reflected new insights from the new perspectives (e.g., OIE, faculty, the academic advisor, and students).

The second cycle of coding utilized pattern coding to group the identified codes into a smaller number of categories or themes. This second cycle allowed for an organized approach to condense a large number of codes into smaller more meaningful analytic units and assisted in surfacing common themes and relationships (Miles et al., 2013). Pattern coding allowed me to view themes that surfaced and to compare and contrast participants' views. The codes were analyzed by the three perspectives that are the focus of this study— the advisor, course faculty, and the students— and that of the Community of Care structure and implementation. Each were reviewed individually and then across participants. The themes that emerged were then organized by research question. Reports were also generated to cross-analyze codes for a role and then a theme that emerged from the pattern coding. For example, the code for "Academic Advisor" and the code for "Challenges" were analyzed to view the challenges faced by the academic advisor. This level of coding allowed for more focused analysis of the data.

Student Survey Analysis

The survey data was extracted from Qualtrics and imported into SPSS for analysis. Frequency counts of survey data were analyzed and reported. Further, a qualitative analysis was conducted on the open-ended and free-text data that was entered by the students. The open-ended responses were exported into NVIVO and then coded, following the same process of first- and second-level coding used for the interviews. The data was reviewed along with the student interview data to determine the students' perception of the support they received in the Fall 2017 semester.

TRUSTWORTHINESS

Qualitative inquiry is often scrutinized for its reliability and trustworthiness (Jones, Torres, & Arminio, 2013; Miles et al., 2013). Trustworthiness is associated with the reader's confidence in the findings and conclusions or its credibility (Denzin & Lincoln, 2011). Qualitative researchers must obtain a deep understanding of the research phenomenon to present findings that are reliable and genuine and avoid drawing erroneous conclusions (Denzin & Lincoln, 2005; Lincoln & Guba, 1985; Merriam & Tisdell, 2016). Therefore, careful considerations were made in the data analysis, and steps were taken to increase this study's trustworthiness.

Credibility

To establish credibility, I spent an extended engagement with individuals from the College of Business at the University and the OIE. I spent a great deal of time on the University campus and in the OIE office collecting data from multiple participants. Lincoln and Guba (1985) posit that "prolonged engagement is the investment of sufficient time to achieve a certain purpose" (p. 301). Multiple participants who had direct involvement with the

Community of Care were interviewed. This substantial involvement enabled me to gain a more in-depth understanding of the phenomenon, which allowed for greater detail in study findings. Furthermore, the study also utilized triangulation to analyze the multiple sources of data, enhance credibility, and corroborate the study's conclusions. Denzin (1970/1978) defined triangulation as using a combination of sources and methods to study the same phenomenon. This study investigated how the learner support system was implemented and the perspectives of those administering support from multiple sources. The study also utilized multiple methods to investigate the student's perspective of receiving support.

Transferability

This study aims to provide a thick description that enables those who are interested in implementing a learner support system on their campus or in an online program to make informed decisions about system development (Lincoln & Guba, 1985). The findings for this study are not generalizable to another program, but they provide a reference for researchers to conduct future research that advances the conclusions of this study.

Dependability

All interviews were audio-recorded and transcribed for analysis. The transcriptions were then loaded into NVIVO for coding. The codes were then refined with each data source. By applying the codebook to multiple transcripts and comparing codes across multiple sources, it increased the dependability of the coding. This process also created an audit trail. Common themes were identified with pattern coding to highlight shared themes across the data sets. Furthermore, to avoid bias and strengthen the dependability of the results, thick descriptions that clearly articulate the steps taken are provided.

Chapter 4: Findings

This research focused on the implementation of a learner support system, referred to as the "Community of Care," in the Fall 2017 semester for the online Cyber Security program. The study investigated the experiences of the academic advisor and course faculty as they supported students in an online environment, including the support strategies they utilized and the challenges they faced. The study also examined the students' perspectives on the support received and their preferences for receiving support during online learning. Lastly, the study explored whether any differences existed between the support preferences of traditional and nontraditional students. By exploring the perspectives of each role, a holistic view of the learner support system was attained.

This chapter is organized into four sections that align with the four research questions. The first section discusses the Community of Care, including the design of the learner support system and the roles that were implemented. The next two sections discuss the roles of the academic advisor and the course faculty respectively. Lastly, the students' perception of support is presented.

LEARNER SUPPORT SYSTEM

The Community of Care was initially envisioned by the Office of Innovative Education (OIE), a department of the institution's University System. The philosophy behind the development of the Community of Care maintained that students would be provided a high level of support from enrollment throughout their learning trajectory, until their academic goal was reached. This was facilitated through what was referred to as a "white-glove approach," in which students were provided a premium service of special care and attention to their needs through the administration of both academic and non-

academic supports enfolded into the learning experience. The OIE and the administrators of the Cyber Security program designed the Community of Care to support students so that they would not feel isolated during their learning and to identify and assist students before they could fall behind or withdraw from the program. Jack (pseudonym), the Administrative Program Director for academic advising in the online Cyber Security program, described the Community of Care in an interview.

> The community of care, from my perspective, is there to make sure that students are on the path that's appropriate for them, that… someone is there clearing obstacles that are truly just obstacles… To make sure that they are graduating on time, that they're staying in the program and they're supported.

Audrey, the Director of Academic Experience with the OIE, stated, "The big benefit is that it is a support system to students. Not at the end of the term when it's too late to make an adjustment for that term, but in real time." Audrey added that this system of support would allow students to make "adjustment[s] in their current behaviors or in their practices, or just not to fall through the cracks." The purpose of the learner support system was to help students as soon as they became at-risk, instead of waiting until the student had withdrawn or failed. This would also help to improve graduation and retention rates, which were very important to the department. Dr. Wilson, the Associate Dean for the College of Business (CoB), stated in regard to the opportunities afforded by the learner support system, "Instead of someone falling off the train and watching it head down the track, we kind of catch them while they're leaning out the back and keep them on board." The aim of the Community of Care was for students to have the support they need to make informed decisions during their learning and to have access to help when they needed it. An additional purpose was to support students in completing their coursework and thereby attaining academic success, whether this meant earning a degree or achieving other personal academic goals.

Unfortunately, during the planning of the online Cyber Security program and a few months before the start of the Fall 2017 semester, the Board of Regents for the University System decided to close the OIE due to a system-wide reorganization and budget reallocation. This decision left the University's Cyber Security program administrators to implement the online program and the learner support system without the aid of the OIE. As a result, the version of the Community of Care that was implemented differed from the system's original design. The changes that occurred, and the impact of these changes on the study participants' ability to support students, are discussed in the study findings.

Community of Care Support Roles

The OIE identified support roles that were needed in the Community of Care based on their ability to aid the students that were enrolling in the online Cyber Security program; Making the student the focal point of the design. However, once it was determined that OIE would be closing, the CoB Cyber Security program administrators made the final decision about how the Community of Care was implemented. In the Fall semester, five support roles were implemented in the Community of Care, and all roles involved direct interactions with students. These included enrollment coaches, the academic advisor, course faculty, academic coaches, and the assessment specialist. The following describes the five roles.

Enrollment Coaching

Enrollment coaching was provided by InsideTrack, a third-party entity with which the OIE had contracted previously in another program. InsideTrack is one of the largest providers of student coaching services in the U.S. The company partners with universities

to provide remote student support services by employing hundreds of coaches nationwide. The enrollment coaches fielded all questions made by individuals that inquired through various marketing strategies that were aimed at recruiting students to the program (e.g., toll-free phone number, website). Any questions regarding admission status or financial aid were referred to the program's academic advisor for specific information and not handled by the enrollment coach. The coach identified prospective students using pre-admission criteria established by the CoB to identify potential successful candidates for the program. Then, the coach followed the prospect through the application process to their eventual admission into the program. The coach also worked with the academic advisor to ensure that students made a successful transition into the program. Dr. Wilson described this enrollment coaching as successful:

> It's the yield. It's going from people who are admitted to people who are actually enrolling and registering, and they did that very well. We're going to, I think, we hope to continue that path because we learned from them and they were very effective. We hope to continue that.

Dr. Wilson felt that providing the enrollment coaching service contributed to high enrollment in the online program. He hoped that the program would continue to use this service going forward but had not committed to this plan at the time of the interview.

Academic Advisor

The academic advisor was a University employee who was dedicated to the online Cyber Security program. The advisor was a one-stop resource for the enrolled students and provided nonacademic support that included assistance with degree or program requirements, registration, financial aid assistance, and any other inquiries about the online program. She also provided strategic, proactive contacts and communications to increase

student persistence. The advisor's support strategies are further discussed in the Advisor Support section of this paper.

Faculty

The course faculty determined the course structure, learning objectives, and strategies for supporting students. Each faculty member signed a contract with CoB to teach online and support students. The faculty administered a variety of support methods by establishing communication and collaboration strategies for students during their learning. These support strategies are described in the Faculty Support section of this paper.

Academic Coaches (Tutors)

The academic coaches provided virtual tutoring sessions to students. For the Fall semester, two coaches were assigned to the Introduction to Programming Concepts course to provide tutoring on the JAVA programming language. The original vision for this role included actively facilitating learning and supporting students in understanding the course topics. The vision also included monitoring the students' pace, progress, and performance data to assist faculty in identifying students who were at risk of falling behind. However, in the Fall semester, the academic coaches were limited to only holding tutoring sessions for students. The Associate Dean indicated that they would reevaluate this role after its implementation to determine how it would be used in future semesters.

Assessment Specialist

Study participants also referred to the assessment specialist as a grader or as a teaching assistant. This role was less defined than the previous roles, and it varied by course. However, the assessment specialists' primary responsibilities were to grade all assignments or exams that required manual grading and were not automated through a system (i.e., Blackboard or a third-party assessment tool such as one provided by the course's book publisher). Assessment specialists were assigned to a course when it was deemed necessary due to the complexity of the course content or at the request of the faculty due to a large amount of manual grading. When a grader was allocated, the faculty worked closely with the individual to review their work and in some cases held calibration sessions to ensure that their scores met the faculty's quality standards or guidelines (e.g., rubric) for the assignment. The grader provided the students with their scores on course activities and, in some cases, feedback on their submissions. They typically had very little communication with students, and if a student did contact them for questions about their score, their questions were directed to the course faculty to respond.

OIE Closing and Impact

During the final two months of preparation for the launch of the online Cyber Security program for the Fall semester, it became apparent that the OIE would be closing. The OIE staff was heavily involved in the launch up to this point. However, once the news of the closing spread, numerous staff members were let go or resigned to seek new job opportunities. Therefore, as a result of the closing, some of the planned services and technology that would have helped to support the students were not implemented. For example, the original design for the online Cyber Security program included the development of an early alert system that would have included automatic triggers generated

from student historical and performance data; these triggers would alert the course faculty, the advisor, or other identified support staff that a student was falling behind. This system would have improved the ability of professors and the academic advisor to administer support when a student was falling behind. However, when the OIE closed, it left the program administrators and staff without support, and there was not enough time before the start of the semester to garner the technical assistance that was needed to complete the development and appropriately test the system before launch. Therefore, it was decided not to implement the early alert system.

As a result of these organizational and program changes, the Cyber Security administrators shifted the direction of the Community of Care to a cooperative effort between the program's dedicated academic advisor and the course faculty. Each role was given the responsibility to support students in their coursework and engage with them to encourage persistence. This resulted in the support becoming localized to the individuals providing the support, their support philosophy, and the time they had available to monitor the students' performance.

ACADEMIC ADVISOR SUPPORT

For the Fall semester, the academic advisor role was filled by Cynthia (pseudonym), the Academic Advising Coordinator for the online Cyber Security program. She was hired specifically for this function and was the sole advisor for the enrolled students. The department's management envisioned that the number of academic advisors would grow as student enrollment increased. Prior to taking on this role, Cynthia spent ten years in academic advising, but the Cyber Security program was her first time advising students in a fully online program. The academic advisor role was envisioned to facilitate the "white glove" approach as detailed by the OIE. Cynthia interpreted this as proactively

assisting students by taking extra steps to ensure they were set up for success in their courses. To accomplish this, she became the student's one-stop resource, modeled after the University's One Stop Enrollment Center that provides on-campus students a one-stop solution for resolving questions related to financial aid, undergraduate admissions, and registration. After she came on board, Cynthia and Jack, her manager, discussed the implementation of the one-stop resource. She described this conversation in the following comment.

> We have an office on campus called One Stop, which is our enrollment services center and they handle everything from financial aid to admissions to fiscal stuff to enrollment management stuff and whatever. But he really wanted someone on board, or a department eventually, that could be that one stop for our online students that would be the person who could field the majority of the questions but then could also find out answers to things that we didn't know without having to send those students to all of these different offices kind of on their own. In our opinion, it's difficult enough to try to navigate the university as a face to face student much less if you're a student living across the country in an online program. So, I'm that on the ground person but then I'm also kind of the program manager for advising for online programs, so I'm developing training manuals and writing best practices and researching what other folks are doing as far as online advising goes to try to think about scaling and moving forward.

Cynthia was dedicated to helping students and wanted them to succeed. In taking on the responsibility to be a one-stop resource, she sought to field the majority of the student's questions, and if she was unable to answer them, she would find out the answer so that transferring the student to a different department was the last resort. Cynthia wanted the online students to have a pleasant experience and realized that being at a distance would not allow for some of the affordances that on-campus students would have. Therefore, she provided extra effort when possible to get the student's questions answered. For the fall semester, Cynthia's duties included assisting students with degree and program requirements, major and minor guidance, specifics about adding or dropping courses, credit

or non-degree credit requirements, financial aid assistance, and any other program inquiries. Cynthia handled both the degree-seeking and non-degree-seeking learner populations and managed the students' academic plans.

Advisor Support Philosophy

The original design of the Community of Care included an additional supporting role, the journey coach; this individual would have worked closely with Cynthia. This role would have provided success coaching services through the third-party entity, Inside Track. When the OIE closed, the service was not implemented. This supporting role influenced Cynthia's support philosophy and strategy for supporting students in the online program. The journey coach would have provided support by engaging students in weekly or bi-weekly scripted telephone calls to build a relationship and encourage their persistence. These calls would have addressed predetermined topics such as the student's personal goals and school progress and helped students overcome barriers by developing strategies to empower them to succeed. After the OIE's closure, Cynthia and her manager, Jack, considered adding the journey coach role as part of their plan for advising and communicating with students. Cynthia stated, "The biggest difference between journey coaching and advising is [being] proactive versus reactive." She described the advising role as one that is typically reactive to student's needs, rather than proactive about assisting students before they reach out. Both Cynthia and Jack felt that the service of "journey coaching" would have brought much value to the students by identifying problems before they manifested into the student detrimentally falling behind or withdrawing altogether. Cynthia also felt that journey coaching would have had a positive impact on student retention from semester to semester.

Cynthia saw journey coaching as an opportunity to enhance the support provided by academic advising and believed that it would allow her to build a personal relationship with the students, which she found more challenging in advising the online students. In her time as an advisor for residential students, Cynthia would often work with the same students from the time they were a freshman through the time they graduated. By interacting with these students face-to-face, Cynthia could see nonverbal cues such as facial expressions and gestures that revealed the student's temperament (such as whether they were feeling happy or sad). With the online student, these attributes are not communicated or not readily identifiable in a phone call or email. Cynthia offered Skype, which could help identify these cues, but students rarely used this mode of communication.

In advising the residential students, the amount of time that Cynthia spent with the students in her office allowed her to build relationships and become familiar with student's nonacademic problems or issues, such as family or work demands that may be impeding their performance in their coursework. This understanding provided her with the opportunity to advise or counsel the student, understanding how much they could take on. Therefore, journey coaching was appealing to Cynthia, and she wanted to take on some of the journey coaching responsibilities when it was determined that this service would not be implemented through Inside Track. Cynthia saw journey coaching as a strategy for building a personal relationship with students, which was an important aspect of her job as an advisor. She stated, "Journey coaching, it's more about helping you along, not just the academic journey but making sure that everything else is going okay at the same time." She added, "It's something that I'm really kind of excited about because it's not something that I'm familiar with in-depth at all." She felt that journey coaching was a great model for student support and was disappointed that the service was not implemented.

Cynthia and Jack met to discuss the impact that not implementing journey coaching would have on their communication plan for students and consider whether this coaching was something that Cynthia could take on, at least in some form. It was decided that Cynthia's current workload was too great and would not allow her to offer the same level of support that the journey coaches would have provided. She stated, "because I'm handling admissions and current students and future students, and all these things wrapped in… I didn't have time for that kind of thing [Journey coaching] …. [So] I kind of took a little more active role in doing a little more intrusive advising." Cynthia took a proactive approach to reaching out to students who were not doing well. She contacted students who were falling behind based on their grades at midterms to provide additional care to those students and determine whether they needed additional help. She also reached out to students that the faculty would bring to her attention. Cynthia felt that she did what she could to support students based on her availability, but she still wanted to do more.

Advisor Support Strategies

Cynthia communicated with students via the phone, email, and occasionally Skype. She commented on the order in which students most often communicated with her, "It's phone and email [primarily], and I would say email first, so email, and then phone, and then Skype." She said that she offered Skype as a communication method in all of her emails to students, but only a few students took her up on the offer to use the technology. The day of the interview, she had completed a Skype call that morning but ended up having to switch to a phone call due to technical difficulties.

Cynthia strived to reach out to students proactively during the semester. Being more proactive was a new endeavor for her. At the beginning of the semester, she monitored students' Blackboard activity data and reached out to those who were inactive

or had not started their courses in the first week and a half. Some students were impacted by Harvey, a major hurricane that hit the State in the second week of classes. Cynthia indicated that a couple of students had to withdraw from the program due to the unexpected natural disaster; others were able to stay enrolled, but the hurricane impacted their ability to complete their coursework on time. Cynthia reached out to all students, not only because of the hurricane but also to ensure that students were actively completing their coursework. She felt that this type of "intrusive advising" was a good exercise for her to complete and helped her gain comfort in being more proactive. She commented, "that's kind of where advising is set – being reactive, right, so after they go through orientation, it's more about, okay, when do you need me for something, and then you reach out rather than me reaching out to check in." She felt that it would be a learning curve for her to adopt a proactive stance. Throughout the Fall semester, Cynthia used various strategies for initiating contact with students, in addition to assisting those who reached out to her for assistance. These strategies included bi-weekly newsletters, a mid-term outreach to at-risk students, and advising for the Spring semester.

Bi-Weekly Newsletter

Cynthia communicated bi-weekly with students via a newsletter that was sent via email. The idea for sending the email originated from the OIE and was initiated by an OIE employee. The newsletter contained academic advising announcements and strategies for success in online education. The newsletter included an "Advising Corner" section that allowed her the option to add tips and reminders about things that were happening throughout the semester. She stated, "I have an advising corner, so I took that opportunity to throw in some tips and pointers and just reminders about things that were happening and give some ideas about how to get through things a little better." She found the email to be

helpful because it reminded students about her presence and her availability as a source of support. Figure 2 provides an example of a student newsletter.

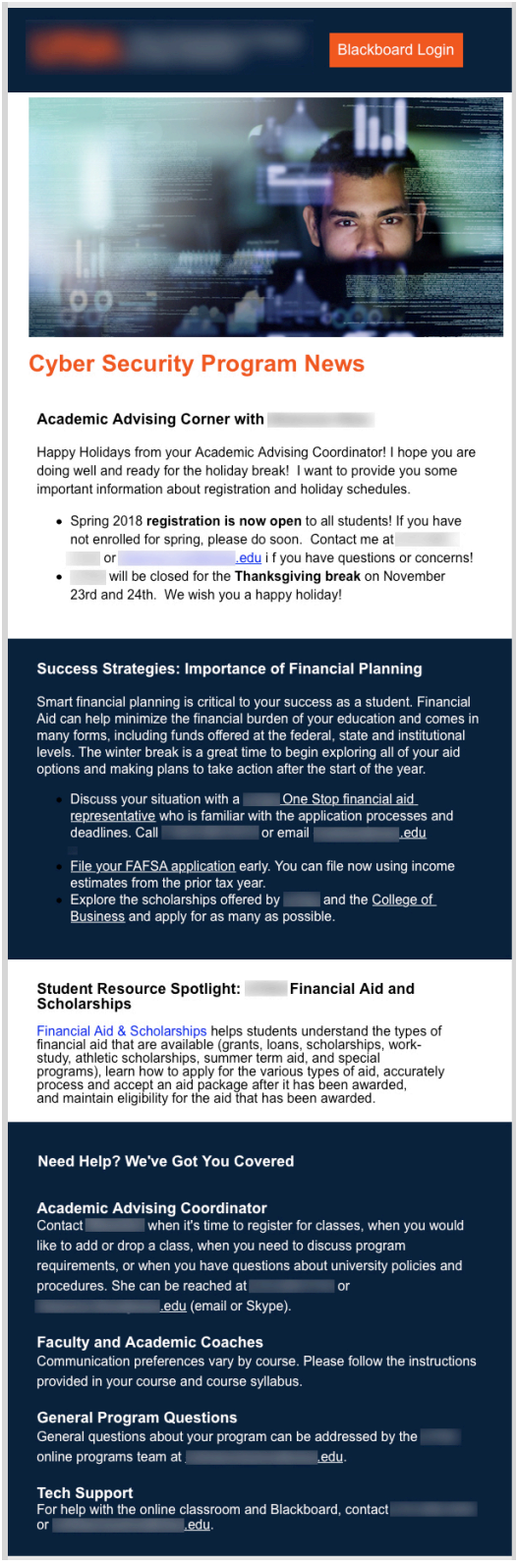

Figure 2: Example Student Newsletter

Mid-term Outreach to At-Risk Students

Cynthia conducted a mid-term outreach to students who were falling behind based on their performance scores. Cynthia found that students' performance data was a better indicator of student status than their log data (e.g., log-ins, actions taken, time spent in the course). She found that the log data was not very helpful because it was pulled in real time. She stated.

> A student could log in and complete an assignment in 10 minutes and log back out but if we look at that and see, oh, they were only logged in for 10 minutes when the rest of the cohort was logged in for 45, that's not necessarily as indicative of course progress and of potential success than seeing actual grades and assessments, and are they completing the modules on time, are they participating in discussion boards and things like that. The performance data would provide us that information.

Cynthia also noted a hindrance to her being proactive: the students' performance data at the course level was only available in Blackboard, which the course faculty managed. Therefore, for Cynthia to have a vantage point to observe student performance data, the faculty would need to generate reports and provide the information to her. According to Cynthia, "What we really needed was performance information, like how are they performing on their assessments, and that information we can't get access to." She was advised to not request the data from the faculty since they were already overburdened that Fall by the workload of teaching the online course. She stated:

> The instructors are teaching on overload this semester, and… we don't really have a solid plan right now of how often do we ask for that information…. There has to be some strategy there, so we're not just randomly asking professors for that kind of information.

The department was working on a plan for communication between the advisor and faculty and developing additional reporting tools that would be used in the future. However, for

the Fall semester, Cynthia settled for the mid-term grades, which were an already established practice for the faculty to provide. She stated, “Midterm grades were available, and midterm grades are basically what's used across the rest of the campus as far as judging or evaluating course progress.” The mid-term data was the only student performance indicator that was made available to her. She used this data to reach out to students who had failing grades. She also reached out to the professors to see whether they had identified any students who may be falling behind so that she could contact them as well.

Cynthia indicated that she did not calculate the grade point average (GPA) for the students at the mid-term, but rather reviewed the students’ grades on activities and contacted students who were at a certain level. Cynthia stated, "I pulled grades and students who had any amount of D’s or F’s, whether it was just one or multiple, they got a phone call, and an email, and then students who had multiple C’s got an email." Cynthia felt that if a student was doing well in the course with either an A or a B, then they did not need to be contacted. She stated:

> My philosophy has always been that I'm not going to bombard you with things because you are busy, you have a family, you have a job, you have this, may have kids, you have whatever. I'm not going to bombard you once a month with an email that says, "Hey, hope you're doing well." If you're doing well and I don't hear from you, that tells me that you're doing well.

She further indicated that this stance was informed by her previous role, in which she worked with nontraditional, post-baccalaureate, and non-degree seeking students. However, she felt that if the student had demonstrated a poor performance, then they should be contacted so that she could talk through any issues and to assist where possible before they fell behind or had to withdraw. She hoped that by contacting the student if any problems were identified, she could help to find a solution so that the student was not negatively impacted.

Course Advising

Cynthia indicated that all of her advising appointments were conducted over the phone, except for a few students who completed their appointments via Skype. Cynthia did not hold in-person meetings for the students, though she commented, "We have a lot of students that are local that could very well come in." She set up a stringent policy for the online students that all of their communications would be online, even for local students. She felt that if she did allow in-person appointments, the students who were not in the region would not be provided the same care as those who took advantage of the face-to-face meetings. She stated:

> So, if I'm going to set a standard that I will allow in-person appointments, my student that's currently in Virginia or my student that's in Flushing, New York, is never going to be able to take advantage of that. And so, that kind of makes that standard of care a little lopsided in my opinion.

She felt that the care and support that the students received should be equal, and all students should have the same opportunity. Furthermore, Cynthia's office was not set up to allow these appointments. Her desk was set up in a cubicle in the middle of an office and did not provide the privacy needed for meeting with a student.

Advising for the Fall Semester

For the Fall semester, a total of 17 course hours were open for students to enroll in which the average course load for students was between 10 and 11 hours, which was generally three courses plus a lab. Students enrolled in twelve hours of coursework or more are considered full-time. According to Cynthia, a little under a third of the students were full-time in the Fall semester. She had three students take all 17 hours; however, at

the end of the semester, only one remained enrolled in the full 17 hours. The other two students had dropped down to either 14 or 11 hours.

Cynthia indicated that in advising students, she took the type of course and the student's situation, when it was provided to her, into consideration. However, she felt that it was also up to the student to provide this information to her and that being intrusive could only go so far before it became a nuisance. If the student did not inform her of any external obstacles, then there was nothing she could do but to advise them about the classes that were available. Cynthia also felt that the twelve-day withdrawal period allowed students to review a course and to determine if it would work for them. She stated, "You've got the first 12 days of class to figure out if that's going to work for you or not because that's what census is for, is to allow students to make those changes to their schedule; to make things easier on them." Cynthia indicated that she does not meddle or pry into the student's life, but as she builds rapport with them and the student shares details of their life, she will consider those details in her advising. She described her approach to advising as follows;

> I'm not intrusive like that. I'm not going to [say], do you have any kids, or what are you doing, what do you do for a living? In the conversation as we're building a rapport, if those things come out, then I definitely will wrap my advising around those things, but my standard line is I'm going to give you everything that's available… everything that you should be taking that you haven't already taken that's required in the degree. You get to decide with your work-life, education balance, what's going to work for you. And then they usually come back with questions about, well, does this entail this kind of stuff? Is this going to be a lot of work? Then we delve into the intricacies of advising with work-life balance.

She felt that it was important for the student to decide on what worked best for them. She stated that advising is complex, especially for nontraditional students, who have more demands such as family and work to manage in addition to their coursework. Therefore,

Cynthia provided the student with all the information they needed to decide on their work, life, and education balance.

For the Spring semester advising, Cynthia did not require students to schedule an appointment with her. She emailed the students with the course schedule for the Spring and notified the students that they could schedule an appointment to talk if they chose. She commented, “They were appreciative of the offer to schedule an appointment, but knowing that they could if they wanted to, but they didn't have to.” She felt that the students were busy, and she had spoken with the at-risk students at mid-term, so she felt that they should not be required to speak with her again before registering. Only a third of the students scheduled an advising appointment to discuss their courses for the Spring semester.

Cooperation with Faculty

Cynthia stayed in regular contact with the course faculty and felt there was reciprocal communication between herself and the instructors. She commented, “There's great rapport I think between myself and the faculty at this point, even if it's virtual.” She indicated that although she had not met all of the faculty in person, she felt they all had a good connection and were all driven by a common thread of supporting the students. Cynthia would reach out to the faculty if a student informed her of a concern or issue, and the faculty would also reach out to her if they had a concern about a student. She described an example in which a couple of students who were members of the National Guard were activated after hurricane Harvey. The students notified her that they would miss some of their assignments and had not contacted the faculty. She stated, "[I] strongly advised them to reach out to their instructors. But then I immediately forwarded that email on to the instructors myself. And so, that helps keep that communication very, very open." She felt that it was important to maintain rapport with the faculty and to make them aware of any

issues or concerns from students. She felt that the faculty were working to capacity, so she was willing to do anything she could do to assist them.

Challenges Faced by Academic Advisor

Many of the problems that Cynthia faced in the Fall semester were due to the online program being new. She felt that many of her challenges would be overcome as the program grew. The three most difficult challenges that Cynthia faced included defining what the "white glove" approach meant for the enrolled students, achieving the appropriate balance for academic rigor and caring for students, and developing a new process to compensate for the loss of journey coaching.

One of the biggest challenges that Cynthia faced was deciding how to administer the “white glove” treatment in her job and determining the right amount of communication with students (neither too much nor too little). She stated, “I think the biggest challenge right now is finding that balance between what's enough contact and what's enough white glove and what's too much white glove." At the time of the interview, Cynthia was still working through this challenge and felt that it would continue to develop as the semester progressed. In an example, Cynthia received an email from a student with a very serious family issue that was going to require him to withdraw. In this situation, the student was still within the withdrawal deadline and was able to withdraw and avoid failing his classes. Cynthia commented.

> So, it's sad, and trying to be that listening ear or that listening typist that listening email, to provide them the support along with the facts of, "Here's the form you have to fill out, and here's where you have to take it, and here's what has to be done with that," along with a, "I'm really sorry to hear about that, and that sucks, but here's what you need to do to get to where you need to be, and then remember that these are the policies around not coming back or how long can you be gone," and things like that.

She struggled with being a caring voice who supports the students while still maintaining the rigid University requirements. In her work, Cynthia became more personally invested in the students' situations. She described this variance.

> I have found that my scope tends to be a little outside of what typical advising would be. When I was advising students face-to-face, as someone came in with a financial aid question I'd send them straight to One Stop. Now, I'm kind of trying to navigate those questions as much as possible on my own, and then if there's still issues surrounding it, then I reach out to my contacts that they don't necessarily have access to. They have access to the front line. I have access to the back line, and so [I am] trying to make sure that I'm not bouncing students around from place to place.

She felt that balancing a caring voice with rigid requirements was not necessarily new to the advising role; in reflecting on her prior background in face-to-face advising, she mentioned that this balance is also needed. However, she felt that her role did vary from a traditional advising role because she was now attempting to resolve the students' problems herself before sending the student to various University departments. While attempting to keep the same delicate balance between caring and enforcing policy, Cynthia went a step further to reach out to her internal contacts when possible to seek solutions to students' problems. She found that this resolved many of the students' concerns so that they could get back to their coursework and not worry about University administrative issues.

Incorporating aspects of journey coaching was another challenge for Cynthia to overcome. Her methods for incorporating it into practice will continue to evolve as she determines strategies for including it into her work. Cynthia saw value in contacting students on a regular basis and thereby identifying issues before they became a more serious problem. Her challenge was how to incorporate this support strategy within her

already busy schedule. Cynthia noted instances where journey coaching would have been useful. She commented:

> There were a couple of situations where I heard much after the fact that students were having issues and they didn't reach out…. 'Why didn't you email me a month ago when this was happening? We could've done something about it then. At this point, now this is your only option.' I think there is some value in journey coaching.

Cynthia also struggled to evaluate how much is too much communication: "It's also a lot about finding that balance of what's going to work and what's not going to work because students sometimes don't appreciate the reach out or the… reaching out all the time, too much, so what's too much and too little." It was hard for her to determine the right amount of communication with students. She struggled to decide when to be intrusive and when to pull back.

FACULTY SUPPORT

This section presents the perceptions of three of the six faculty for the online Cyber Security courses, who agreed to participate in this study. The participants included the instructors for the following courses: Inside Cyber, Principles of Marketing, and Principles of Information Systems for Management. The three remaining faculty declined to participate in the study. Therefore, the findings reflect the qualitative analysis of the three faculty interviews that occurred. The Associate Dean of the CoB, to whom the faculty report, also provided his vision of the faculty role. Virtual tutoring sessions provided by an academic coach are also discussed. The faculty that utilized virtual tutoring declined to participate in the study. While this is a limitation, the students reported this support strategy to be quite helpful; therefore, it was determined that it should not be excluded from

the study results. Perspectives on the tutoring sessions from the Associate Dean and program administrators are also presented.

Faculty Role

According to the Associate Dean of the CoB, Dr. Wilson (pseudonym), the role of the course faculty was to lead the instruction of the courses implemented. This stance aligns with the traditional role of a professor leading a course. Dr. Wilson stated:

> [The] faculty member, they embraced the course. They're invested in that course. That's their tradition. That's what they've committed their life to. They're invested in a course and in the student's success in that course and... they're going to take care of things.

Dr. Wilson felt strongly that the faculty member should lead the course and would be the primary contact for students in their online courses. This is in contrast to the plan initially put forward by the OIE, in which the academic coach would field the students' questions, allowing the faculty more time to act as a content expert. This view was not accepted or adopted by Cyber Security administrators. Dr. Wilson stated, "I believe strongly in the importance of faculty members in terms of instruction." He felt that the faculty should take the lead on establishing the course content, performance assessments, and support interventions. Additionally, Dr. Wilson also noted that internal research conducted with students for a different program found that the students preferred assistance from their faculty first:

> The students talked about the importance of the faculty. These are what the students were saying. 'I would go directly to my professor first.' 'Each professor teaches slightly differently; I want to know what my individual professor's looking for.' 'When looking for support, I approach the faculty first and then the TA. I want to know how the faculty grades.'

He felt that these comments spoke volumes about what the students preferred in terms of support. Therefore, he maintained that the course faculty should be the first line of support, directing both the course and the support strategies. This stance was also reflected in the Fall implementation of the online courses, in which the faculty were the leaders of their courses.

The faculty were heavily involved in the course development along with the OIE instructional designers, and they were trained by OIE staff on various support interventions such as virtual office hours, how to use collaboration tools, and strategies for communicating with students. However, the faculty were not part of the planning discussions for the Community of Care. The original design for the online Cyber Security program included the development of an early alert system to drive alerts to faculty and supporting staff automatically; if this system had been implemented, the faculty would have been trained to use it. Dr. Wilson and the other program administrators interviewed complained about the lack of faculty involvement in the design of the alert system and the Community of Care. As described above, when it was determined that the OIE would be closing, the CoB decided to not move forward with the implementation of the early alert system. Therefore, a determination was made to shift the focus of the Community of Care to a cooperative effort between the faculty and the academic advisor to support students.

Faculty Contract

All faculty of the online Cyber Security program were required by the Associate Dean to provide support and engagement to their students. Each faculty member was asked to sign a contract before teaching their online Cyber Security course. For the Fall semester, the faculty were charged with teaching their online course in addition to teaching their

established residential courses. Therefore, the contract specified the additional faculty responsibilities and expectations involved in teaching online. It also outlined the faculty's requirements for providing support to students. The portion of the contract that referenced teaching online is provided in Table 6.

Table 6: Faculty Contract for Teaching Online in the Fall Semester

Text
Faculty must be available to students in the manner prescribed by the online BBA Cyber Program. Faculty are expected to communicate with students at regularly scheduled intervals. Faculty agree to abide by the University's policy regarding class attendance for online courses. Class attendance in both face-to-face and online classes is defined as active participation in the class with participation being defined by the various engagement activities listed in the syllabus for the course. The minimum expectation is that a registered student will demonstrate some activity in his or her online class at least once weekly. Instructors of online classes must provide at least one engagement activity each week. Engagement activities in a class may encompass but are not limited to the following elements: • Completion of assessments • Participation in discussion forums • Submission and completion of assignments • Communication with the instructor • For additional information see [link to the University's Handbook of Operating Procedures regarding class attendance and participation] Faculty agree to participate in meetings, workshops, trainings, etc., as required by the Dean of the College of Business or the Dean's designee in regard to the success of the online BBA cyber program. Faculty will need to complete selected training designed to help them to succeed in the delivery of online courses.

The faculty were responsible for supporting students and providing weekly engagement activities to interact with students in the online course. Additionally, the faculty were

responsible for attending any meetings, workshops, or training designed to help them succeed in the delivery of the online courses. The support strategies implemented varied and were chosen by the faculty of each course.

Instructional Design of Courses

The OIE envisioned that each of the online courses would have the same look and feel and basic structure in an effort to provide a high quality, cohesive experience, and the student would feel as if all courses were part of the same program. A three-hour course typically carried 12 instructional modules plus activities (e.g., challenges or exams), but this could vary based on the course content. The course faculty made the final determination for the number of modules. Table 7 summarizes the instructional design and support strategies for each course as described by the faculty.

It should also be noted that the CoB made a hard distinction between the students enrolled in the online program and the students enrolled in the residential program. The two cohorts' course enrollments were kept separate. The University did offer an instance of the online courses to the residential students, but the online cohort and the residential cohort would never be registered for the same online course at the same time. Additionally, an online student could not enroll in a campus-based course and could only enroll in the online version. The online student would have to officially transition to the residential program if they wanted to begin taking courses on campus.

Table 7: Instructional Design of the Faculty's Courses

Course	Modules	Module Activities & Assessments	Course Structure	Support Strategies

Principles of Information Systems for Management (3-hour course)	12 Modules	• Four activities per module
		  ○ Vocabulary lesson
		  ○ Practice activity
		  ○ Module assessment
		  ○ Challenge activity
		• Cumulative exam after every third module
			• Weekly due dates
			• Students cannot make up missed assignments
				• Email with students
				• Weekly announcements with study tips

Principles of Marketing (3-hour course)	12 Modules	• Final project is a business plan that culminates the students' learning throughout the semester • A portion of the business plan is completed at the end of each module via a challenge activity. • Challenge activities are posted to a discussion forum to receive feedback from peers. Students are required to provide feedback to at least three students.	• Weekly due dates with no penalty for late submission • Peer review assessments	• Email with students • Peer Feedback • Teaching Assistants provide feedback on activities • Virtual office hours with live instructional events
Inside Cyber (1-hour course)	5 Modules	• Modules one through four include quizzes and a final exam. • Module five is a course project	All modules open are open at the beginning of the semester with no weekly due dates	• Email with students • Virtual office hours

Principles of Information Systems for Management (POISM). The POISM course is a foundational course. Dr. Perkins, the course professor, referred to it as a "survey" course in which the student would be introduced to many topics regarding information systems. In this course, the students primarily reviewed vocabulary and basic concepts. The course consisted of 12 modules with weekly activities that were due at the end of the week. The students' resources included an eBook and the book publisher's online learning tool, MyMIS Lab, which was integrated into Blackboard. Dr. Perkins found this tool helpful for providing students with practice activities that aligned with the book's readings. The students completed four activities per module: a vocabulary lesson, a practice activity, a module assessment, and a challenge activity. The modules' practice activities were completed in MyMIS lab, and the challenge activities and exams were completed in Blackboard. The challenge activities typically consisted of a case-based activity in which the student was given a real-life scenario to review and answer questions or write a response. Lastly, students completed a cumulative exam after every third module. Dr. Perkins worked with the instructional designers from the OIE to identify content for the course. The designer wrote the content and activities for the course, and she reviewed and provided feedback. Dr. Perkins welcomed help from the OIE designers since she was teaching full-time during the development of the course and did not have time to create it on her own. She felt that the overall course was interactive and engaging for the students and got the sense that the students liked the course.

Principles of Marketing (POM). Principles of Marketing is an introductory course that provided students with a basic understanding of marketing concepts. The course also comprised 12 modules and maintained weekly activities that were due by the end of the week. This structure allowed students to progress through the modules at the same rate and pace. The original course design intended for weekly due dates with penalties for not

completing the work. However, after Hurricane Harvey disrupted many students in the course, Dr. Clark, the course professor, decided to keep the due date but lifted the penalty for not completing or completing the assignments late. The online course was also structured in a way that allowed students' learning to culminate in creating a business plan. The students completed a part of the business plan in each module's challenge activity, then submitted the complete plan at the end of the semester as their final course project. Dr. Clark described the final project as an "aggregation of each of the individual threads and discussions" of the course. He further described it as follows: "It's very structured in that regard, in that students, one module at a time will be exposed to specific topics with specific learning objectives." Furthermore, each module challenge was posted in a discussion forum so that the students would exchange peer feedback on each component of the business plan. He also felt that the interactivity among the students was important and required each student to give feedback to at least three of their peers. He stated, "I don't want to be too stereotypical in generalizing here, but students are busy, and if it's not required they may not fully contribute." He felt that overall, the students had provided good feedback to each other, and the activity promoted a deeper understanding of the concepts.

Inside Cyber (IC). The Inside Cyber course was a newly developed one-hour credit course designed specifically for the online Cyber Security program. The course had a dual purpose of building students' awareness about the field of cyber security while also assisting them in making informed decisions about career paths that interest them. This information would also help students to make informed decisions about what courses they want to take in the future and plan their program trajectory. Dr. Anderson, the professor of this course, was new to the University and was not involved in the course's design and development. However, he did make decisions on the course administration. Dr. Anderson

described the course as an introductory course that provided students with an awareness of current issues and job opportunities in the field of cyber security. He described the course by stating, "It's not so much a course where we're testing that they retain any knowledge. Although there are tests and things like that, but it's really more… so that they understand the context around the rest of the program." Since it was a one-hour course, the design only consisted of five modules which varied from the other online Cyber Security courses. The course was self-directed by the student. All five modules were open at the beginning of the semester with no weekly assignments or due dates. This structure allowed the students to work through the modules at their own pace. The students were also allowed three attempts on their graded activities. Dr. Anderson stated, "It's basically just a familiarization course and so, what I want is for them to understand the material, not necessarily be tested and given a bad grade if they don't get it the first time." He felt that the nature of the course allowed for this flexibility since it was not a gateway course and was not a prerequisite for another course. The course was designed to inform students of basic cyber security concepts; implications for the public, private, and governmental sectors; and career paths within the cyber security and information systems fields. The final module was a cumulative project.

Faculty Support Beliefs

Overall, the faculty members interviewed all shared a strong desire and was committed to being available to students when they needed help and to provide a good education. The faculty provided several opportunities for students to reach out for help and attempted to meet the needs of the student schedules by varying support strategies and the times of availability. The faculty distributed course announcements and updates and communicated with students via email or phone to address their questions. All faculty

indicated that they made their responsiveness to emails a priority and attempted to answer all emails within 24 hours even on the weekends.

In addition to these similarities, findings indicated several differences in faculty views of student support. Each course professor had a different approach and perception of administering support in their course. Dr. Perkins (POISM) felt strongly that the type of course, such as a foundational course (e.g., vocabulary intensive) versus a skill-based course (e.g., learning how to program), would determine the support strategies that were provided. Dr. Perkins had taught this course for several years and was highly knowledgeable about the course concepts. However, she had limited experience with facilitating online teaching. Prior to teaching this online course, her only experience with online education had been in managing the completion of a self-guided online course for Microsoft Office products. Therefore, the online POISM course was her first experience of facilitating and maintaining virtual engagement with students. Her course primarily provided foundational concepts only; thus, she felt that students did not need one-on-one instruction from her on the course topics. She commented, "It's not a skill, how to do a math problem. I don't have that. It's basic concepts. So, most of that can be handled either on the phone or email." She felt that her primary responsibility was to facilitate the course learning objectives. As a result, she felt there was not a need to hold weekly live virtual events or virtual office hours. She felt that students should be able to read the information, and if they needed assistance, they should reach out to her for help.

Dr. Perkins maintained an active presence in the course by distributing weekly announcements to her students and providing timely responses to their emails. She disagreed that online students wanted more help than that, stating, "I think for the most part the students who are taking [these courses] are busy. I understand that. That's okay." She stated that the feeling of being isolated is a part of online education because students are

doing their work on their own. She also expressed her view that the type of support a student receives is not going to change their feeling of being isolated and having to self-regulate their learning. She commented:

> I want them to be successful. So, to me, the stuff to make them more successful is I can do that through email or I can do that through giving them suggestions for how to study for a test or how to better prepare their answers for this particular activity so that they can get the most out of it.

Based on this perspective, Dr. Perkins felt that email communications and a weekly announcement that included study tips and other important information were adequate to support the students in her course. She felt that students' desire for interaction with the faculty would vary based on the complexity level and nature of the course:

> Now, it may be different when they're taking some of the courses for their major. This is a core course… it's still basics. So, they're not going to be as interested in delving in. They just want to check that box. They want to get this course out of the way, get what they think they need out of it. That's fine. That's really the purpose of it.

Dr. Perkins felt that more advanced classes that directly applied to the students' major, such as a complex programming course or the forensics courses, would be more interesting to students and motivate them to participate and be more active. She felt that since her course was focused on basic foundational concepts, it was better suited for minimal interaction. She felt that online students in courses such as hers were less interested in engaging with others and more interested in just getting through it.

Dr. Anderson (IC) and Dr. Clark (POM) shared similar support strategies for their courses; both approached support differently than Dr. Perkins. Even though their classes were also foundational classes, each held weekly virtual live events and felt that holding these sessions was essential for the students' learning. Dr. Anderson's prior experience

with online learning for many years informed his approach and philosophy for providing support. He stated:

> I just believe that students, especially in an online class, especially beginning students, you need to sort of hold their hand a little bit and respond to them because I don't want them thinking I'm not responding. So, I try very hard to answer any email within a day.

He felt the most important step in supporting students was to be responsive when they reached out for help which was a shared view between each of the faculty. Dr. Anderson further stated, "Around here we get emails all weekend. The only emails I answer on the weekend are from the students." In addition to responding to students' emails, he also held virtual office hours twice a week in which the students could log on to a Blackboard Collaborate video-conferencing session to discuss with him about any questions they had. He felt strongly that being open, available, and responsive to students' needs was vital to their success, especially in an online environment.

Dr. Clark's support philosophy was informed by 20 years of experience in the traditional classroom. In that time, he garnered much experience with identifying and supporting students. However, teaching online was new to him. In this regard, he approached the situation as a new learning experience, and this perspective enabled him to expand his understanding of best practices for teaching and supporting students in the online environment. Like Dr. Anderson, he encouraged students to complete their assignments on time and to dedicate time to complete their activities. He also recorded an introductory video for the course in which he informed the students about the amount of time that would be required for completing the coursework and encouraged them to dedicate themselves to completing it. He stated:

> I stated this right-out front in my introductory video. I stated this in emails to them, guys, this is going to take a lot amount of time. This is the amount of time you need to dedicate to this every week. If you can't dedicate that amount of time, then you have to reconsider enrolling in this.

He understood that learning online would require a degree of self-regulation to be successful; thus, it would likely require more of the student's time per week than a traditional face-to-face course. However, Dr. Clark also voiced concern about maintaining rigor in his course and in the online Cyber Security program. He discussed common perceptions of online degree programs, including the stigma that they were easier and offered lower-quality instruction. He wanted to ensure that the requirements for his online course were as thorough and rigorous as those of his face-to-face classes. Therefore, he did not weaken the course requisites when students complained of too much work. He did change the penalty for not completing the coursework on when students were affected by Hurricane Harvey, but he felt that this was a necessary change due to the circumstances.

Faculty Support Strategies

The faculty varied their support strategies and times of availability to meet the needs of the diverse student population. The support strategies utilized in the Fall semester were chosen by the instructors, and they varied for each course. The types of support strategies used included: interactions with students (i.e., emails, weekly announcements), feedback on assignments, virtual office hours, and virtual tutoring sessions with academic coaches.

Interactions with Students

The professors indicated that email was their primary method of communicating with students. Dr. Perkins (POISM) reported that she primarily communicated with students via email and sent weekly announcements and tips for completing their assignments. She stated, "I do send emails. I send reminders. I post announcements every week. Hey, guys, we're on module four. Great job. Make sure you do this stuff. I send out tips." Dr. Perkins also indicated that she emailed out tips weekly, or if she noticed common problems in the students' work or common mistakes, she would type up some hints on how to complete them correctly. She stated:

> For the four instructor graded documents… because the first one they did, I noticed some common things they didn't do very well, so I wrote up a thing. Hey, based on what you all did, let me give you some tips for the next ones. Make sure you read the case. Make sure you answer each question. So, I sent out tips for answering these challenge activities.

She also emailed out study tips before each of the three cumulative exams in her course. Her goal was to not only to remind students of things they should study, but also to remind students that she was there and available if they needed her assistance. She strived to be available to students, especially when assignments were due, to address their needs. She indicated that assignments were typically due at midnight and that she wanted to be available as much as possible, within reason, if a student had a question. She stated.

> I respond really quickly. I mean, at home, Friday night, Saturday, especially when something's due… I'm really good about responding to emails. I'm always checking, even on weekends, even at night. I usually cut off about 10:00 or 11:00 now.

All assignments were due on Sunday nights. In the summer pilot, she had homework assignments due on Friday nights and the exams on Saturday night. As a result, this put

more work on her to try to respond to her students' emails throughout the weekend. She indicated, “That's why I changed to Sunday nights…. I'd be up there at 11 o'clock every Friday and Saturday night checking my email. I was like seriously this is crazy. So, part of it's just figuring out the time table.” She felt that part of the learning curve for her in teaching online was finding the appropriate balance of support, not only for the students, but also for her own workload.

The faculty were highly active on email and attempted to respond as quickly as possible when students had questions, particularly when assignments were due. Dr. Clark (POM) indicated that he frequently communicated with students at the beginning of the semester to address concerns and questions about the coursework, but much of that communication dwindled throughout the semester, and he received fewer questions towards the end of the semester. He also noticed a drop in the number of technical issues that students were having and did not need to refer as many students to the academic advisor or technical support as he had in the beginning.

Faculty sent emails to students who were falling behind in their coursework when they were identified. This act was encouraged by Cyber Security program administrators to encourage students’ persistence. Dr. Clark stated:

> If they're not [logging in], then I’ll send them a little note and say, "How you doing?" It's really that tone; it's not asking, "Hey, you're behind. If you don't do this, you're going to penalized." It's more of a tone of, how are you doing? Everything working well for you? Can we help you in any way?

He found that students were appreciative of the contact attempts and would generally respond quickly. Dr. Anderson also described sending emails to students who were not completing their coursework:

> I watch the [students'] participation in terms of the exams and the quizzes. So, the students who are not responding timely to those things, then I contact them by email.... and asked hey are you going to come back?

He worked with students who may have been having trouble by actively communicating with them and helping them where possible, as he wanted them to continue in the course. He described an instance with one of his students who was having difficulty. He had been communicating with her on a regular basis. He commented:

> I just sent her an email last week and said hey, is it getting any better for you? And I'm not holding her to deadlines and things like that, I'm just saying whenever you can do it, do it, and I'll be happy with that because I don't want her to quit.

However, he also had three or four students who had stopped completing the coursework and were not responding to his emails. In those instances, he was unsure how to proceed and hoped that the students would reach out or begin completing the coursework.

Feedback on Assignments

Providing feedback on the student's coursework was seen as an important strategy for supporting students. While developing their courses with the OIE, the professors designed course activities and determined whether they would be graded manually or automatically. The OIE promoted the use of auto-grading, and the professors agreed, since students would receive immediate feedback and it would reduce time spent grading. This approach would also allow for scalability of the program and the courses in future semesters. The OIE Learning Architect, who oversaw the development and production of the online courses, described the metric that was used for determining the number of auto-graded assignments vs. manually graded in a course. She stated, "the design required something like 70 to 30." The course designers recommended that a minimum of 70% of

the course activities should be auto-graded and no more than 30% should be manually graded. However, this percentage varied based on the course and was determined by the faculty. In their view, the more activities were auto-graded, the better.

Dr. Anderson's IC course primarily utilized auto-graded assignments with auto-feedback. Dr. Anderson was not involved in the original design for the course. Upon his review of the instructional design at the beginning of the semester and after receiving complaints from students, he found that the students were not receiving feedback on their assignments and only had one attempt to complete each activity. He stated.

> They were basically given 45 minutes to answer a 40-minute exam with no additional attempts and no feedback either. So, they didn't get any feedback. Now we're giving them feedback; we're giving them extra time, a little bit extra time, we're giving them multiple attempts.

He felt that this lack of time and feedback was not supportive of the students' learning and quickly updated the assignments so that the student would receive feedback and adequate time for completion. He also changed the assignments so that the students would have multiple attempts and more time to complete the activity. He felt that this change was appropriate since the course was introductory-level. The students were appreciative of these changes.

Dr. Perkins also relied heavily on auto-grading due to the number of activities in her POISM course and found this method to be very beneficial. She had four assignments that were manually graded and felt like this was all that she could handle. She stated:

> We have big classes. So, grading is an issue. So, my requirement [in the course design] was as much as possible automatically grade it. So, I have four instructor-graded assignments, which is plenty — one for each section. The book is 12 chapters. So, I have chapters 1, 2, 3, exam. 4, 5, 6, exam. So on. So, for each of those sections, I have one instructor graded, and everything else is a mix mash, but it's all automatically graded. Praise the Lord.

Dr. Perkins also felt that due to the large number of students in her course, auto-grading was a necessity so that students could receive immediate feedback on their performance; this also relieved her of the workload of grading the assignments manually.

Dr. Clark (POM) also utilized both manual and automated grading. He worked diligently to respond to students and provide regular feedback on activities with the help of two teaching assistants (TA) (also considered assessment specialists) who helped him grade the student's work. He provided guidance and met regularly with the TAs on how to give feedback to students, so that feedback would be consistent, and students would not perceive that it was coming from multiple people. He felt that this cohesiveness was important so that students were receiving the same level of support, regardless of who provided them feedback. For the most part, the TAs did not have direct contact with the students, and if a student had a question about their assignment's feedback, their questions were sent to Dr. Clark.

Dr. Clark also required students to conduct a peer review and to comment on each other's course assignments in the discussion forum. He stated:

> …they'll get feedback on that from their peers. They'll talk about the pricing, not just the list pricing but any terms of finance or anything else that they may be offering, they'll get feedback on that. As they put this final business plan together, throughout the 12 modules, they will have gotten feedback from their peers.

Dr. Clark further described how he instructed the students to provide feedback:

> It must be to the point that they're really critiquing the idea, either positive contribution to it, or many cases they also suggest, "Okay, what if you also added this feature to it?" Or "Have you ever thought about targeting this additional segment within your target market?" It does contribute to their final product, but it is required. So yes, they do get some good feedback on their projects.

Dr. Clark used peer review as a means for students to receive additional feedback on their work, as well as to facilitate a deeper level of understanding and encourage student interactivity. To ensure that this activity was completed, peer feedback was required for full credit on the assignment.

Virtual Office Hours

Dr. Clark (POM) and Dr. Anderson (IC) both held virtual office hours (VOH) for students weekly but had differing approaches to conducting their sessions. These synchronous sessions were held via Blackboard Collaborate, which allowed for audio, video, and online chatting. The VOH sessions allowed the professors to connect with their students and answer their questions live. Dr. Anderson commented:

> I try to be available to the students. Now, it's a lot of work. It's a lot more work than I'm getting paid for one-hour credit course. It's okay. I mean the money is not a big deal to me. I'm trying to give a good education to the students.

Both professors reported that even though these sessions required a lot of their time, they were essential to providing a good education for their students.

Dr. Clark held two VOH sessions per week, one on Tuesday morning at 8:00 AM and the other on Wednesday night at 9:00 PM. These times were based on comments he had received from students. He stated, "We have, as I said, very busy individuals. Some can't hold chat sessions until the family basically goes to bed at nine at night." He felt that the chosen times would meet the needs of most students and found that the 9:00 PM session had the most attendance. Dr. Clark conducted a short, prepared presentation that covered important topics from the lesson and explained what the students should focus on for the exam. He described his VOH sessions as follows: "I always turn on [my video], I always

share my screen, and there is a part of it that's a prepared agenda, and there's part of it that is a dialogue, any type of thing they want to bring up." After his presentation, the time remaining was an open forum for the students to ask questions. He indicated that while he turned on his web camera so that students could see him, he rarely had students turn on their video.

Dr. Clark felt there was good dialogue with the students in the VOH sessions, and he also felt that having the short presentation aided and helped to facilitate that discussion:

> I've also found when it's not prepared, many times they'll just show up, and it's like, "Okay guys, what's on your mind?" And there's nothing on their mind. There's no planned agenda on their part. They just want to show up to see what anybody else is going to say to make sure they weren't left out.

Dr. Clark indicated that the VOH are not as well-attended as he had hoped and that only a small percentage of students actually attended. Not surprisingly, he had the highest attendance after the course exams, particularly when students had performed poorly or felt confused by some of the exam questions.

Dr. Anderson also held VOH sessions twice a week. Like Dr. Clark, he would broadcast a video stream using both video and audio, and also used the chat to communicate with the students in attendance. He also indicated that he occasionally held sessions where he just chatted with the students with no audio or video. Dr. Anderson's sessions were different in that they were strictly for the students to ask him questions; he did not conduct a presentation of course topics like Dr. Clark. He indicated that he does not cover material or provide live instruction unless a student asks him to discuss a topic. He said, "If they ask me questions about material, I'll talk about that." He further clarified his view of the virtual office hours by stating, "The purpose of the office hours is to answer questions or to respond to concerns that the students have and that kind of thing." He did indicate that

the OIE staff had suggested that he conduct a virtual lecture in order to encourage interactivity; however, he felt that since the attendance in the sessions was so low, this would not be a good use of his time. He stated:

> I'm not going to do that especially if there's nobody there. Then I'm just lecturing to a camera that's recording the lecture. But that's what they wanted. They wanted students to be able to go back and look at it afterward. I said no I'm not going do that. That's a little bit too intense for me.

He did not see value in conducting a weekly lecture and felt that virtual sessions were there to address the students' concerns. However, for his course, he compared the virtual sessions to conducting on-campus office hours for a residential program:

> It's just like office hours I would have in my office. If one of my students wanted to come in and say hey, I'm having a problem with this particular concept, can you explain it to me? Happy to do that. Happy to do that in the virtual office hours but it's not like I'm going get up and lecture for an hour every time.

The structure of Dr. Anderson's course, which was open without weekly due dates, also made it difficult to hold a weekly lecture. He stated, "I've got students who are working in module five, and I've still got some students who are working in module three, right? And so, there are some that are slower than others." He indicated that this open structure made it difficult to hold office hours and make announcements to the class, since students were working on different parts of the course from week to week.

Dr. Anderson indicated that the sessions typically had low attendance, with only approximately four students at a time. However, he felt that the low attendance was an advantage for the students who did attend, because they got more personalized attention and engaged in good interactions. In prior experience, he had held a virtual session for a large number of students, and he indicated that it was hard to control this session and make

it effective for all participants. Dr. Anderson was not concerned about the low attendance or the reasons that students were not attending. He stated, "I figure that the ones who don't come they either don't care or they understand the material enough that they don't worry about it." The reason he conducted the virtual office hours was to support students and increase his presence for when they needed assistance. His goal was to help students succeed.

Virtual Tutoring

In the Fall semester, two academic coaches were assigned to the Introduction to Programming Concepts course to conduct virtual tutoring due to the complexity of the course. Interviews with the academic coaches and the course faculty were requested, but they declined to participate. Therefore, the perspectives provided are from those interviewees who had intimate knowledge of the academic coach role and activities or were in a position to describe the vision and implementation of the virtual tutoring sessions in the Fall semester. A limitation of this study is that the perspectives of the academic coaches who provided virtual tutoring support to students and the professor that guided their work were not available. However, enough data was collected to provide a snapshot of the virtual tutoring that was provided to students and the program directors' vision of the academic coaching role.

The academic coaches assisted students in their mastery of programming concepts by facilitating virtual tutoring sessions and answering students' questions. The faculty made the decision to implement the virtual tutoring and directed the work of the academic coaches. Therefore, in this study virtual tutoring was considered a faculty support strategy.

The academic coaches were graduate students within the University CoB who had in-depth knowledge of the course content. The vision of the OIE was that the academic

coach would also monitor the student's progress and performance data to identify students who were at-risk for falling behind or withdrawing; Which would have aided the faculty and academic advisor who were also tasked with identifying these students. In interviewing the staff at the OIE, it was determined that the faculty had not given this responsibility to the academic coaches and they had only minimally taken this stance in monitoring the students' performance. The decision for the academic coach to begin taking on this duty would be determined by the course faculty.

Dr. Wilson, Associate Dean of the CoB, viewed the academic coaches as a necessary source of support for students in the program's complex courses. He felt that this role allowed for scaling the online program to larger numbers of students. He stated, "Coaches can help you to scale and then, coaches can help you support some interesting pedagogical strategies." He added:

> I think as the numbers go up, faculty members cannot, right, because one of the biggest advantages with online is that you can scale and the number of students in a course can... You're not talking about who fits in the classroom. You're talking about 100, 200, 300.

To determine how many coaches would be used that semester, the Dr. Wilson used a measuring system that was based on the course faculty's previous experience. He described this system:

> What we used as a sizing metric, based on [faculty name] experience, is that we use one coach for the first 40 students and then an additional coach for each 30 additional students, so we capped it at 70, and we gave her two coaches.

The coaches were placed in this course to provide additional support to the faculty due to the complexity of the course content (i.e., teaching the JAVA programming language in an

online environment). The implementation of the academic coaches in the Fall semester will inform future practices of the role.

Dr. Wilson felt that the online Cyber Security program needed to grow the coaching model, but this was a challenge due to limited funding. At the time of this study, the CoB's pool of candidates to fulfill the academic coach role comprised graduate students who had the subject matter expertise to answer students' questions. Dr. Wilson stated.

> They're coming here, they're here for a couple of semesters, and then they're going to graduate and go. Would that be cool if we could have the full-time, really properly trained coaches? That would be really cool. For us now, that's expensive. That's more... That's high-end, elegant, desirable… maybe someday.

Dr. Wilson had a vision of having a full-time academic coach to support students but also acknowledged that, while this would be "nice to have," it was not feasible in the current program. He felt that if the program continued to grow, a full-time coaching role may be a possibility in the future.

Cooperation with Academic Advisor

Dr. Perkins and Dr. Clark discussed their interactions with the academic advisor, Cynthia. Both professors found that having Cynthia's assistance was a big help, especially when students were falling behind and not responding to their communication attempts. Dr. Clark described the experience of working with Cynthia.

> [Cynthia is] a big help. Extremely big help. Very, very helpful because as an instructor… I don't know what all the options are to the student. It's wonderful from my standpoint… that I can just hand it off to them in such an easy manner… I'll do, I call a warm handoff, I'm communicating with the student, I will CC them and tell them this person will help them, and then they start dialoguing directly with that person. It's actually not the student; it's usually then the advisor that starts the dialogue. We're not even waiting for the students to respond…. So [advisor] engages very, very quickly.

He was very impressed with the responsiveness of the advisor and found her involvement beneficial both for his work and for the overall Cyber Security program.

Dr. Perkins often referred students to Cynthia, and they maintained regular communication about students whose performance had raised concerns. In one example, one student affected by the hurricane contacted Cynthia indicating that he would need to miss a few weeks of school. Dr. Perkins indicated that Cynthia was also monitoring the impacted students and following up on their status. However, at the time of the interview, Dr. Perkins said that the student had not returned to complete their assignments.

Both professors also noted that program administrators had not stated clear expectations about how to handle cases where the student was not responding to their communication attempts and not completing their work. Therefore, in examples such as the one described by Dr. Perkins in which the student was not completing their coursework, it was unclear what their responsibility was in this situation and whether they should continue to reach out or allow the academic advisor to take over the student's case.

Challenges Faced by Faculty

The three most significant challenges faced by the course faculty in the Fall semester included understanding the online students' mindset, maintaining rigor in their courses, and struggling to find enough time for the demands of online teaching.

Two of the professors felt strongly that many of the students had enrolled in the online program because they thought that the coursework would be easy. Dr. Clark commented, "They had a perception that online was either easier, or they underestimated the amount of time that was going to be required" and Dr. Perkins stated, "I think it's a different mindset. Oh, it's online. I'm not going to have to do anything." The faculty agreed

that the online students were busy, worked full-time, had families, and had other priorities, all of which impacted their approach to education and their completion of coursework. The professors perceived that when the students complained about the courses requiring too much work, these complaints reflected students' expectation that online education would be easier than traditional education.

Dr. Perkins strongly disagreed that her course required too much work. She stated, "this is college," and "anything can be difficult if you don't do the work." She stated that one of her biggest challenges is that she finds her students do not read. Her perception was that students were not reading the announcements, emails, or course resources; therefore, she struggled with knowing how to communicate with students clearly. She stated, "Even just putting it in the syllabus; this is what you have to do to get your grade. They don't read it…. [they ask] does the test count, does this count? Did you not read this? I have a syllabus quiz one of the first things." She added an extra-credit syllabus quiz to entice students into reading the syllabus, but not many students took her up on completing it. Another example occurred with one of the module challenge activities, which required a three-part response. A majority of students only answered one part of the activity. After this occurrence, Dr. Perkins took time to review all of the remaining course activities and attempted to revise the wording to ensure that students would answer all of the assigned questions. Therefore, she found it was a challenge to communicate instructions and expectations within the Blackboard environment.

The faculty understood the student population was primarily nontraditional students. However, this did not this did not lead them to adopt less rigorous requirements in their courses. The residential program in Cyber Security at the University was a top-ranked program in the United States, and the faculty sought to uphold the same high quality and rigor in the online program. In doing this, the faculty ensured that the online courses'

learning outcomes were aligned with, and equivalent to, those of the on-campus courses. For example, Dr. Clark stated.

> This is not a little online degree mill. Therefore, whether you're taking the class online or in the classroom, we want the same rigor. We want to be sure that when a student graduates and gets a [University Name] degree, and they go to an employer, the employer says, "Oh, you're a [University Name] grad. Not an issue. I know you're going to be able to handle this."

Dr. Clark initially had a negative perception of online education. His perception changed after he gained experience teaching online, but he continued to have concerns about public perceptions of online education and wanted to maintain a positive image of the University. He stated:

> I think, some of these folks that signed up for an online degree from [University Name], incorrectly, had an incorrect perception of what online was from [University Name]. We don't hand out degrees to anybody. This is hard. It's going to take a lot of time. In fact, during the pilot, which was during the summer, I had lots and lots of negative feedback. I've taken online degrees before; this is way harder than that. This is way too much. It's like, hey if you're in the classroom, I'd be expecting this.

When students expressed their view that the coursework was too hard, Dr. Clark grew concerned that he would be required to make his online coursework easier in future offerings. He was adamant that the online course must align with the rigor of the on-campus, residential program.

In contrast, Dr. Anderson (IC), who had taught online for many years, had a different opinion of the students' mindset. He attributed the student's concerns to the demands of online learning. When the students complained that the work was too much, he reexamined the modules. He stated:

> The first two modules were very intense. We didn't really give them any extra time with those two modules, and the students were actually complaining and saying hey we're going to drop this class, it's way too much work. And all that, and so, one of the things I did was go back and give them a little bit more time to do their exams and their quizzes and gave them multiple attempts.

Dr. Anderson found that the original design of the course did not give the students extra time to reflect and absorb the content. When students told him they were going to drop the course, he evaluated the course and decided to restructure some of the activities to give the students additional time and opportunities to complete the assignments. Dr. Anderson also felt that he was able to do this due to the foundational nature of the course.

Lack of time was another big challenge for all of the faculty. Each of them taught their online course in addition to their full load of residential courses, for a total of five to six courses in the Fall semester. The faculty developed their own methods of keeping up with their students' progress and monitoring for students falling behind, but time limitations impacted the level of support the students received. Dr. Perkins admitted that due to lack of time, she had not been very proactive in monitoring the Fall course for students that may be struggling or falling behind. She struggled to monitor students' participation and provide assistance when she identified a potential issue. She stated, "I'm being perfectly honest, I have not done as much oversight as I normally would've. I'm just overwhelmed. One extra class makes a difference." She indicated that when she taught the summer pilot course, it was her only course, and she was able to monitor and engage with the students about their needs proactively. She candidly remarked:

> I have 800 students. I have five classes. As a full-time faculty member, I'm on a ton of committees. Who has time to do that? I mean, if I was teaching one class. But in a regular semester, nobody has time. Seriously…. I have to prepare my lectures. I have to grade papers. I have to answer 500 emails. If you saw the amount of emails I get back and forth. Then you got to research.

She wanted to be able to do more to provide support to her students, but she just did not have the bandwidth to provide individualized support due to the amount of work that was required of her.

STUDENT PERCEPTION OF SUPPORT

A survey was issued to the students enrolled in the online Cyber Security program (n = 90) to investigate their perceptions of the support they received in the Fall semester. A total of 33 students responded to the survey. Of these, 76% (n = 25) were nontraditional students (i.e., 25 and older), and 24% (n = 8) were traditional students (i.e., 24 and younger). The following section presents the findings from the survey. For questions to which fewer than 33 students responded, the response rate is indicated with the results. Additional analysis was performed by grouping the responses of the traditional vs. nontraditional students to assess whether any differences in support preferences emerged between the two groups. The study findings were grouped by age range. Those students who reported their age as 25 or older (n = 25) were classified as nontraditional. Students reporting their age as 24 and under were classified as traditional (n = 8).

Prior Online Education Experience

The analysis revealed that two-thirds of the students (67%, n = 22) had prior experience taking an online course at a university or college, and 33% (n = 11) had never enrolled in online education. Figure 3 presents respondents' levels of online experience by age group. Of the students aged 24 and under, 50% (n = 4) had taken an online course before, and 50% (n = 4) had no prior experience. The majority of the nontraditional

students (72%, n = 18) had prior experience with online education, and 28% (n = 7) had no prior experience.

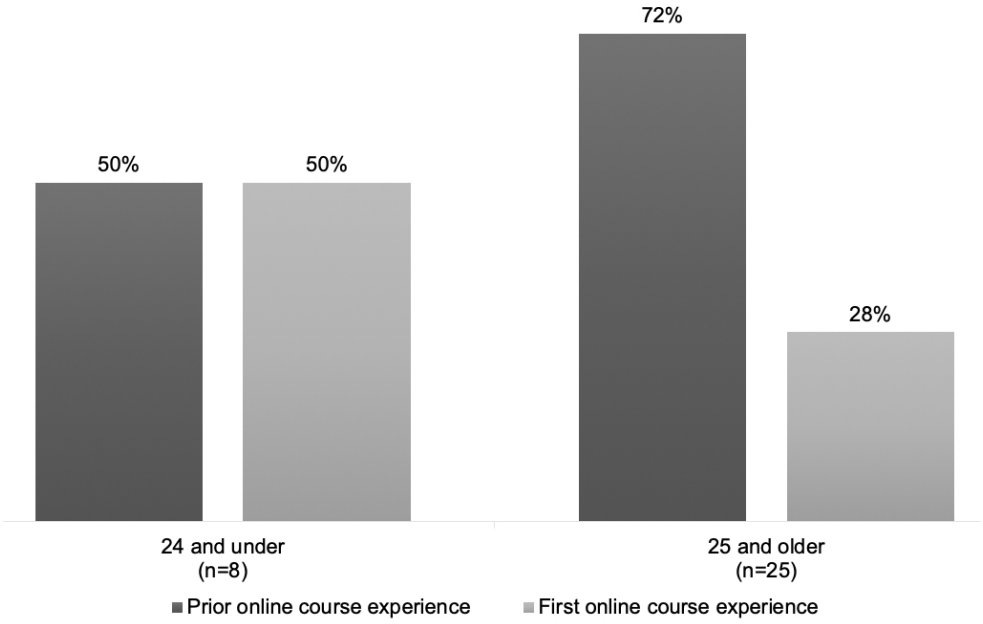

Figure 3: Online Education Experience by Age Range

Coursework

Students were asked which courses they were enrolled in during the Fall semester. A majority of students were enrolled in the Inside Cyber course (24%, n = 29). The results also showed that 19% (n = 23) of students were also enrolled in Legal, Social, and Ethical Issues in Business, 18% (n = 21) were enrolled in Introduction to Programming Concepts and the corresponding lab, 18% (n = 21) were enrolled in Principles of Information Systems for Management, 12% (n = 14) were enrolled in Principles of Marketing, and 8% (n = 9) were enrolled in Introduction to Microeconomics.

Going into the semester, most students expected their coursework to be difficult. Over half (58%) of the students disagreed with the statement, "At the beginning of the semester, I expected my courses to be easy." Specifically, 46% (n = 15) disagreed, and 12% (n = 4) strongly disagreed. However, a third of the students (33%) agreed with this statement; 27% (n = 9) agreed, 6% (n = 2) strongly agreed, and 9% (n = 3) were neutral. The respondents overwhelmingly agreed (91%) that their coursework was challenging; 42% (n = 14) strongly agreed, and 48% (n = 16) agreed. Only two students disagreed (6%), and one student (3%) was neutral that their coursework was demanding. There were no respondents who strongly disagreed.

The results also showed that the students spent a great deal of time per week reading and completing their course activities. When students were asked, "How much time do you typically spend interacting with your coursework per week?," nearly half (48%, n = 16) of the respondents indicated they spent 16 or more hours per week on their coursework, one third (33%, n = 11) spent between 11 and 15 hours per week, and 15% (n = 5) spent six to 10 hours per week. Only one student (3%) indicated that they spent one to five hours per week completing their course activities.

Students commented in the open-ended responses about the difficulty of the coursework. Respondents suggested that improvements could be made to balance the amount of work and the amount of time required to learn the content. One student commented, "I believe the root of my stress is not having enough time to learn everything and complete all assignments." Comments also revealed that some students were unable to understand key concepts before having to move to the next module. However, the other comments also indicated that these concerns were somewhat eased as the semester progressed and students became more familiar with the content and the online environment.

Obstacles that Impeded Student Performance

To evaluate the barriers that students faced, students were asked, "Which of the following obstacles, if any, impeded your academic performance this semester?" Students were provided a list of obstacles and asked to select all that they faced. Figure 4 provides a graphical representation of the barriers that students reported hindered their performance in the Fall semester. The top three reported obstacles included a lack of time (55%, n = 18), the complexity of the coursework (49%, n = 16), and social or family issues (33%, n = 11). In addition, 30% (n = 10) of the respondents indicated "Other." Interestingly, 21% (n = 7) of students indicated that lack of academic support hindered their ability to perform. The remaining obstacles included lack of familiarity with online learning (15%, n = 5), issues with their professor(s) (15%, n = 5), feeling underprepared for their courses (12%, n = 4), struggling to navigate the online course environment (9%, n = 3), and lack of motivation (6%, n = 2). No students indicated that financial issues impeded their academic performance.

Students that responded "Other" were prompted to specify a reason. These open-ended responses indicated that unclear instruction and demands from their job also interfered with students' course progress. The survey results also revealed that 24 of the survey participants worked full-time, and nine students worked part-time or were unemployed. Therefore, it is not surprising that the students' work duties interfered with their ability to complete their coursework. It is a limitation to this study that "employment responsibilities" was not provided as an option given that many of the students worked full-time.

Additionally, a cross-analysis was conducted to identify whether any overlaps existed between the obstacles that students reported. Three notable overlaps were found. The first was "complexity of coursework" and "lack of time," with 10 responses

overlapping. The second was "lack of time" and "social and family issues," with six responses overlapping. The third was "complexity of coursework" and "social and family issues," with six responses overlapping. These findings suggest that the student's "lack of time" may have been due to the complexity of coursework and their social and family issues. These findings are not surprising since both can consume significant time. This data provides some insight into why students report a lack of sufficient time as a barrier to their academic performance.

When asked what was least helpful to support their learning, analysis also revealed that a lack of clear direction on assignments was also an obstacle, which is consistent with the previous finding. One student commented, "Straight content with clear explanations is needed. Some readings are hard to interpret and [I] waste time considering the content that will be tested on." Students comments also indicated they were frustrated with the amount of time they spent completing the assignments. Another student commented:

> The estimated time of completion for the reading and assignments is underestimated. [Professor name] has indicated that the coursework each week should take about 8 hours or so to complete but it takes much longer than that.

The students indicated that the time they had expected to devote to coursework (based on estimates provided by the professor) was inconsistent with the actual amount of work that they were assigned; this disparity was an obstacle to completing their assignments.

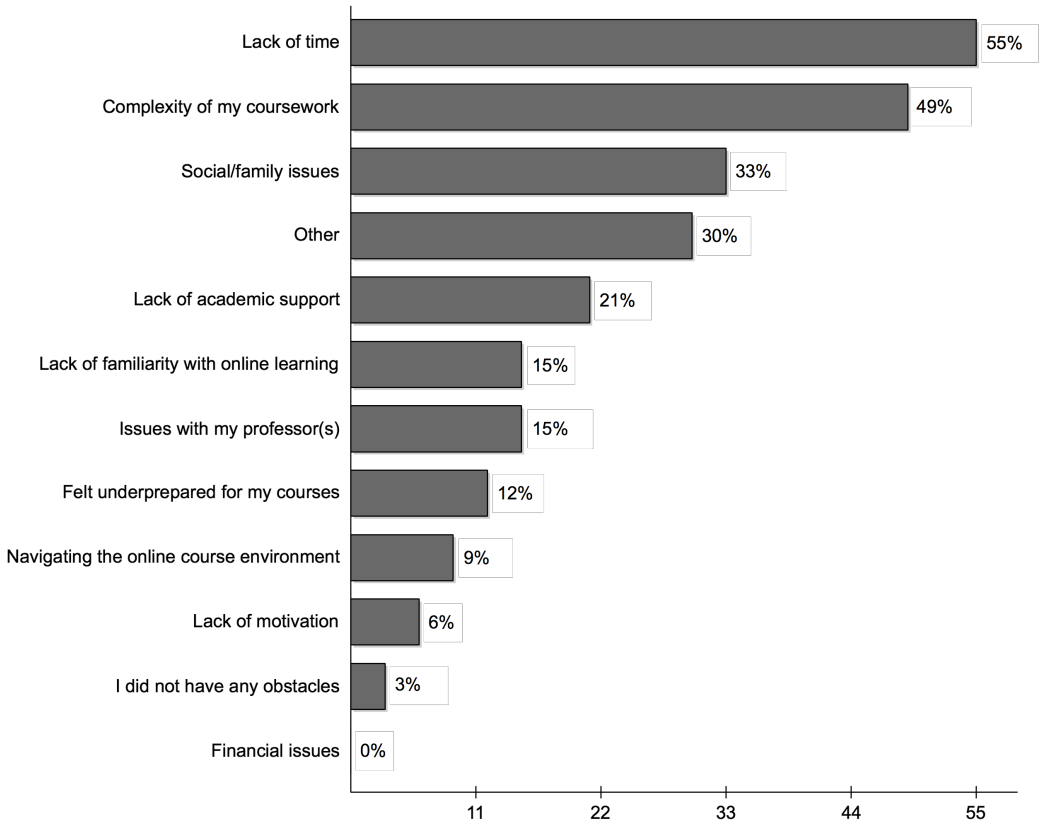

Figure 4: Reported Obstacles That Impeded Student Academic Performance

Further analysis was conducted to determine whether traditional and nontraditional students reported facing different obstacles. Figure 5 indicates the results for each student group by the percentage of responses. For the nontraditional students (aged 25 and older), lack of time (60%, $n = 15$) and complexity of the coursework (56%, $n = 14$) were the two biggest obstacles that impeded their academic performance. These were followed by social family issues (24%, $n = 6$), other reasons (24%, $n = 6$), felt underprepared for their courses (16%, $n = 4$), and lack of academic support (16%, $n = 4$). The largest obstacles faced by the traditional student's aged 24 and under were social/family issues (63%, $n = 5$), issues with their professor(s) (50%, $n = 4$), other reasons (50%, $n = 4$), lack of academic support

(38%, n = 3), and lack of time (38%, n = 3). Additionally, the traditional students indicated that a lack of motivation (25%, n = 2) hindered their academic performance where the older students did not. Interestingly, the nontraditional students indicated the obstacles of feeling underprepared for their courses (16%, n = 4) and navigating the online environment (12%, n = 3) impeded their performance where the traditional students did not report these hindrances.

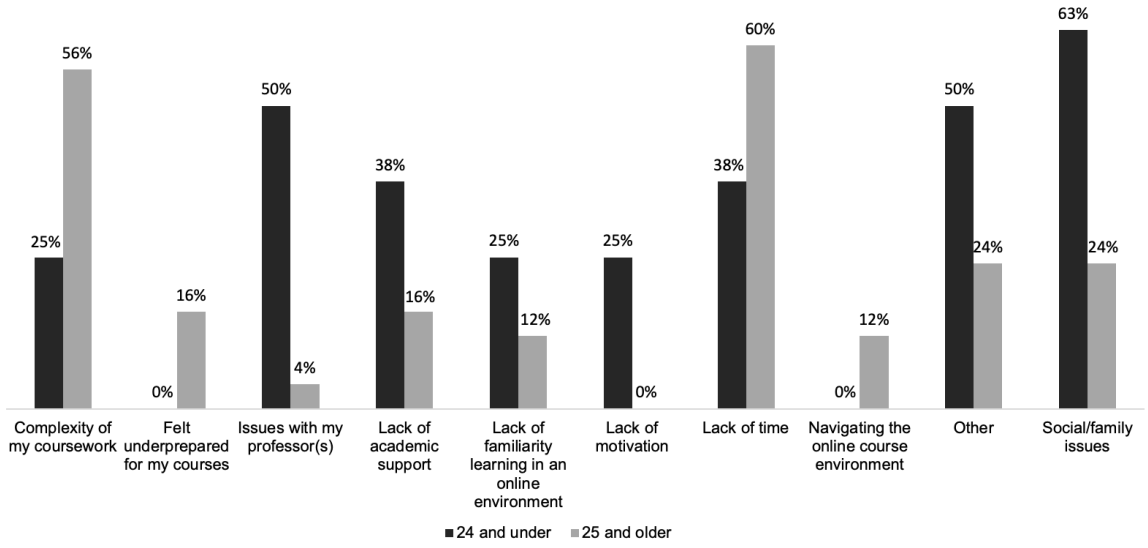

Figure 5: Reported Obstacles by Age Group

A cross-analysis was also conducted to assess relationships between students' prior online experience and the obstacles they reported. Figure 6 provides a graph of the results. The results revealed that both groups—students with online education experience and those without—identified the same top three obstacles that impeded learning. These included (1) lack of time (54%, n = 6 of 11 responses, no online education experience and 54%, n = 12 of 22 responses, prior online experience); (2) complexity of coursework (54%, n = 6 of 11 responses, no online education experience and 45%, n = 10 of 22 responses, prior

online experience); and (3) social and family issues (45%, n = 5 of 11 responses, no online education experience and 27%, n = 6 of 22 responses, prior online experience). However, the results also revealed that 27% (n = 3 of 11 students) of those without prior online education experience reported lack of familiarity with learning in an online environment as an obstacle, compared to 9% (n = 2 of 22 students) of those with prior online experience. Furthermore, 18% (n = 2 of 11 students) of students with no prior online experience indicated that difficulty navigating the online course environment was an obstacle, compared to 4% (n = 1 of 22 students) of those with prior experience. These results suggest that students entering into online education for the first time need time to adjust and learn how to navigate the online learning environment.

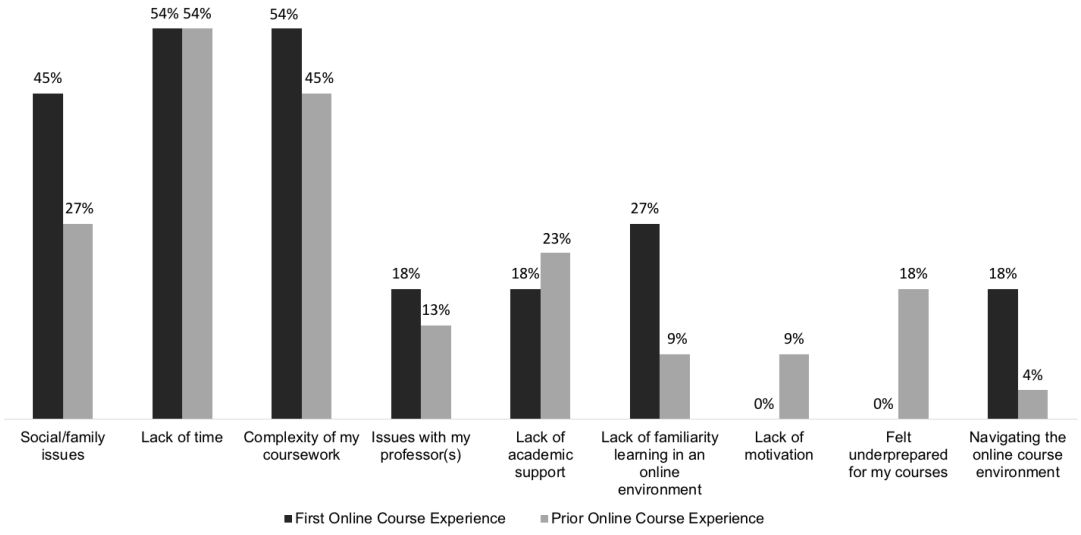

Figure 6: Reported Obstacles by Prior Online Experience

Most Important in Receiving Support

Students were asked to rank what was most important to them in receiving support in their coursework. Figure 6 presents these rankings. A timely response from their professor or support staff (48%, *n* = 15 of 31 responses) was ranked as the most important when receiving support. This was followed by receiving feedback on course activities (e.g., assignments/quiz/tests) (29%, *n* = 9 of 29 responses) and having access to an academic coach (29%, *n* = 9 of 31 responses). The remaining rankings included having easy access to communicate with their professor (25%, *n* = 8 of 32 responses) and live video-conferencing sessions with their professor (22%, *n* = 7 of 32 responses). A smaller number of students ranked "To feel that they mattered to their professor" (13%, *n* = 4 of 30 responses) and "Receiving an alert when I am falling behind or have been inactive" (13%, *n* = 4 of 30 responses) as most important in receiving support for coursework.

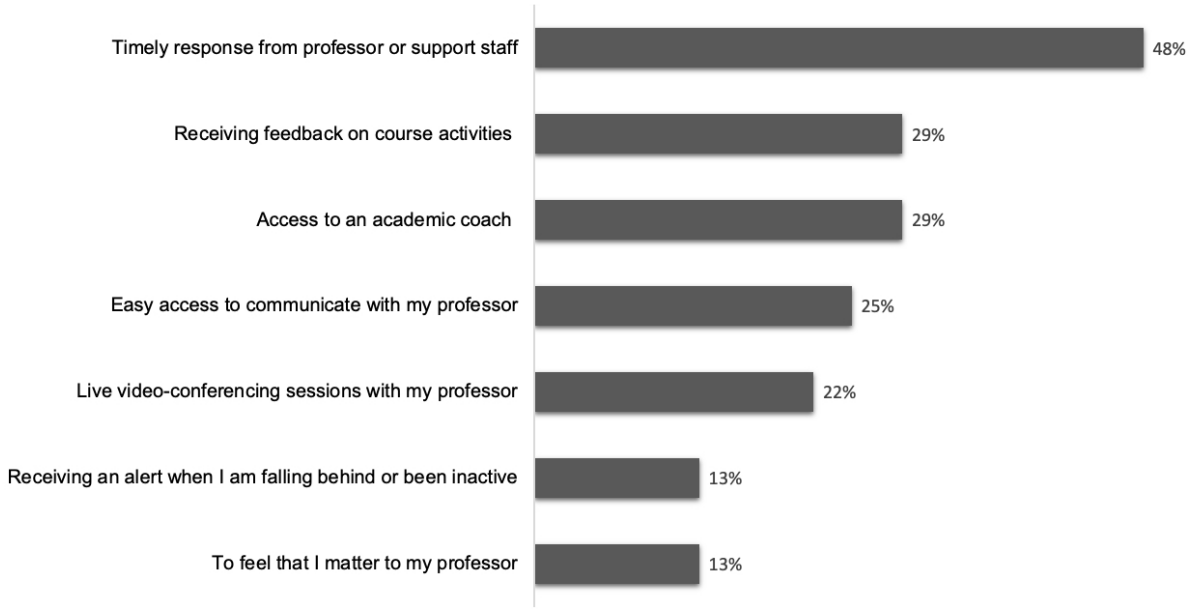

Figure 7: Most Important in Receiving Academic Support

Further analysis was conducted to determine if any differences existed between the traditional and nontraditional students. Figure 8 provides the results.

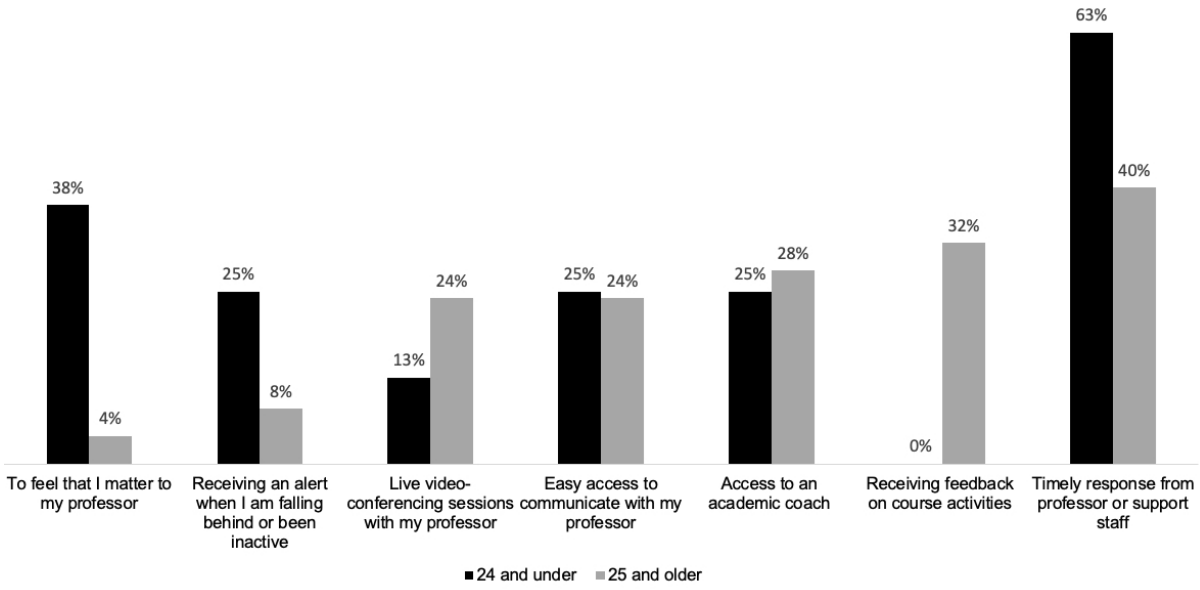

Figure 8: Most Important in Receiving Academic Support by Age Range

Both traditional and nontraditional students ranked receiving a timely response from their professor or support staff as the most important form of support (63%, n = 5 of traditional students and 40%, n = 10 of nontraditional students). Nontraditional students also ranked receiving feedback on course activities (32%, n = 8), access to an academic coach (28%, n = 7), easy access to communicate with their professor (24%, n = 6) and live video-conferencing with their professor as important. The traditional students ranked feeling that they matter to their professor (38%, n = 3), receiving an alert when they are falling behind (25%, n = 2), and easy access to communicate with their professor (25%, n = 2) as important. One major difference between the two groups is that the nontraditional students ranked receiving feedback on course activities as a top priority, while no

traditional students ranked this as important. The findings also showed that the traditional students perceived feeling like they matter to their professor as important (38%, n = 3), compared to only 4% (n = 1) of the nontraditional students. These findings indicate that in terms of support, both traditional and nontraditional students value timely interactions and the ability to communicate easily with their professor. However, traditional students need to feel that their professor cares about their learning and prefer to receive alerts when they are falling behind. This finding requires further research, particularly due to the small sample size.

Perception of Overall Support Received

Overall, the majority of students felt supported during the Fall semester. Students were asked to respond with their level of agreement to the statement, "Overall, I feel supported in my program." Over half (57%) of the students agreed with the statement; 21%, (n = 7) strongly agreed, and 36% (n = 12) agreed. Additionally, most students indicated that they felt that the overall support they received during the semester helped them to persist in their courses. Of 32 responses, just under half (47%) of students agreed that the support they received motivated them to persist; 16% (n = 5) strongly agreed, and 31% (n = 10) agreed. One student commented that they were appreciative of the contact they had received:

> I did receive emails at the beginning of the semester from my adviser and coaches to see how I was doing. I did indicate to them that I work full time and would be focusing a lot of my time during the weekends to focus my attention on school. They encouraged me and offered me to reach out to them if I needed anything.

Responses indicated that a majority of the students perceived the support they received in their coursework to be helpful. Twenty-seven percent (n = 9) of the respondents indicated

that the support they received was extremely helpful, and 39% (n = 13) found it moderately helpful. One student commented, "I feel I've had great support this semester." Students also reported feeling the professors were responsive to their concerns and tried to work with them if they needed. One respondent stated, "[Professor name] encouraged me to continue with the course. Also, he modified his curriculum which made it more enjoyable. I would like to take a course with [professor name] again." The data revealed that most students felt supported by the faculty, their advisor, and support staff.

Unfortunately, not all students felt that the support they received in the online program was helpful or helped them to succeed. Twenty-two percent of students disagreed that the support they received aided their persistence; 9% (n = 3) disagreed, 13% (n = *4*) strongly disagreed, and a third (31%, n = 10) of students were neutral. Additionally, 21% disagreed that they felt supported in their program; 12% (n = 4) disagreed, 9% (n = 3) strongly disagreed, and 21% (n = 7) were neutral. The data indicated that 27% (n = 9) felt that the support they received had limited helpfulness, and 3% (n = 1) did not find the support helpful.

A cross-analysis was conducted to examine the students' perceptions of the helpfulness of the support they received in relation to the reported obstacles that impeded their learning. The findings showed that students who rated the overall support they received as "not helpful" or as having "limited helpfulness" also indicated the obstacles of complexity of coursework (six total responses; "limited helpfulness" n = 5 and "not helpful" n = 1), lack of academic support (five total responses; "limited helpfulness" n = *4* and "not helpful" n = 1), and lack of time (four total responses; "limited helpfulness" n = 3 and "not helpful" n = 1) as the top obstacles that impeded their performance in the Fall semester. Therefore, the results revealed that students who felt the support they received

was not helpful also felt there was a lack of support provided, and that the coursework was difficult and they did not have enough time to complete it.

Perception of Support by Academic Advisor

Students were asked about their experience with their academic advisor and the support they were provided. Table 8 provides a summary of the results. The results showed that an overwhelming majority of the students (79%) agreed that their interactions with the academic advisor helped them to feel more comfortable in seeking academic assistance during their courses; 52% (n = 17) strongly agreed, and 27% (n = 9) agreed. Only 9% of students disagreed; 3% (n = 1) disagreed, and 6% (n = 2) strongly disagreed. Twelve percent of students were neutral (n = 4). Furthermore, the findings also showed that a majority (68%) of the students felt that the support they received from their academic advisor helped them to persist in their courses; 52% (n = 16) strongly agreed, and 16% (n = 5) agreed. Only 10% of students disagreed; 3% (n = 1) disagreed, and 7% (n = 2) strongly disagreed. Twenty-three percent of students were neutral (n = 7).

The goal of the academic advisor for the online Cyber Security program was to support students by listening to their concerns and administering help before problems grew more significant and they had to withdraw. Students were thankful for the opportunity to speak to someone other than their course professor about their situation; 50% (n = 13) strongly agreed, and 27% (n = 7) agreed. Only 15% (n = 4) of students were neutral, and 8% disagreed; 4% (n = 1) disagreed, and 4% (n = 1) strongly disagreed. The students felt that the advisor provided an appropriate level of care to support their needs and appreciated her support. In response to the statement, “My academic advisor makes me feel that someone is watching out for me” (31 total responses) 71% of student agreed that their advisor was vigilant about their progress and took care to ensure they were

successful; 39% (n = 12) strongly agreed, and 32% (n = 10) agreed. Only 16% (n = 5) were neutral, and a small number of students disagreed; 3% (n = 1) disagreed, and 10% (n = 3) strongly disagreed.

Table 8: Student Perception of Support from Academic Advisor

Question	Rating				
	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
My interactions with my academic advisor help me feel more comfortable to seek academic assistance during my courses this semester. (n = 33)	52%	27%	12%	3%	6%
The support that I have received this semester from my academic advisor has helped me to persist and keep going in my courses. (n = 31)	52%	16%	23%	3%	6%
My academic advisor makes me feel that someone is watching out for me. (n = 31)	39%	32%	16%	3%	10%
I was glad to speak to someone other than my professor about my situation. (n = 26)	50%	27%	15%	4%	4%
My interactions with my academic advisor help me to feel more connected with the program. (n = 31)	32%	32%	23%	6%	6%

Interaction with Advisor

The findings from the survey indicated that students preferred to communicate via email with their academic advisor, which aligns with the previous finding that students preferred to communicate via email with their professors. Sixty-seven percent (n = 22) of students indicated that email was their preferred method of communication, 27% (n = 9) preferred phone, 3% (n = 1) preferred chatting online, and 3% (n = 1) preferred a video call (e.g., Skype). The findings further revealed that a majority of the students had not interacted much with their advisor. Most students indicated they had only interacted with the advisor between one and four times (67%, n = 22) throughout the semester. This finding is in alignment with traditional academic advising and not that surprising. However, five students (15%) indicated they had interacted with their advisor between five and nine times, three students indicated they had interacted 10 or more times (9%), and three students (9%) indicated they had not interacted with the academic advisor at all.

Further review was conducted by cross-analyzing the number of times the student reported contacting their academic advisor with the reported obstacles to their academic performance. Figure 9 provides a graphical representation of the results. The results indicated that for all three groups (i.e., those who contacted the advisor one to four times, five to nine times, and 10 or more times), the obstacles included lack of time, the complexity of coursework, social and family issues, and lack of academic support. The students who contacted the advisor five to nine times also indicated that they had issues with the professor (n = 3), and one student reported lack of motivation. Additionally, one student who contacted the advisor 10 or more times also indicated they felt underprepared for their courses. These results indicate possible reasons for the frequency of contact with the academic advisor.

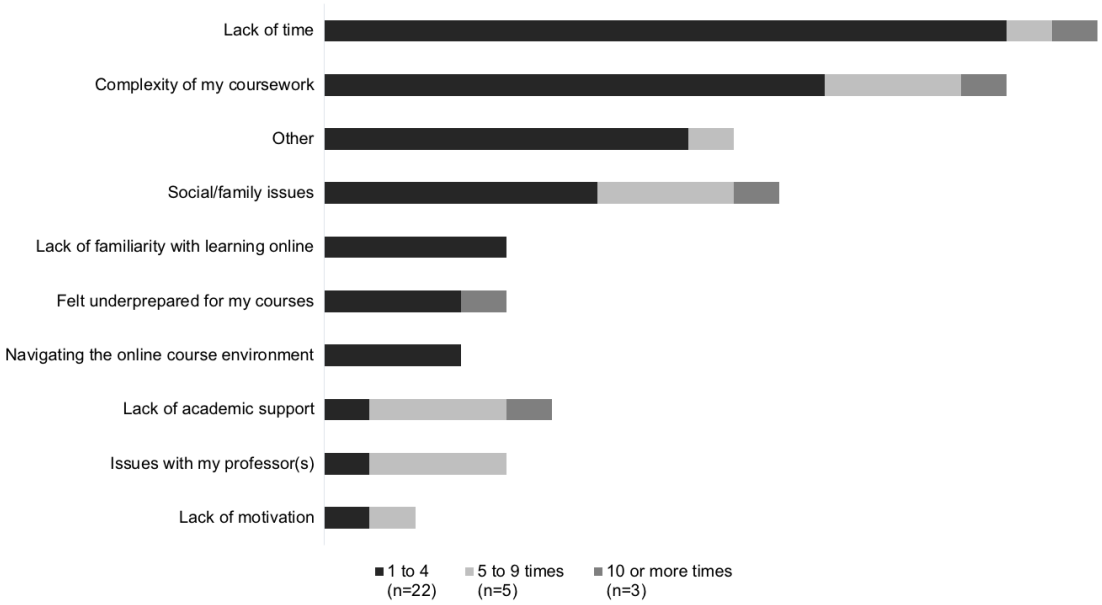

Figure 9: Obstacles by Frequency of Contact with Academic Advisor

Perception of Faculty Support

Students were asked about their experience with their course professors and the support they provided. Overall, students felt supported by their faculty in the Fall semester. Over half of the students (56% of 29 respondents) agreed that they felt better prepared to deal with their academic work because of their contact with their professor (i.e., 28% [n = 8] strongly agreed, and 28% [n = 8] agreed). In an interview, a student stated, "I could contact them [the professors], and they get back to me right away." The findings showed that 47% of students believed that the support provided by the faculty helped them to succeed in their coursework; 18% (n = 5) strongly agreed with this statement, and 29% (n = 8) agreed. One student commented, "Collaboration with fellow students and professors in the forums along with the flexibility to do coursework to fit my schedule was really

helpful." Students found that the opportunity to work with their professor as well as the other enrolled students was helpful to their learning.

Students were asked whom they typically contacted first when they have a question or issue about their coursework. Just under half of the responses indicated that students contacted their professor first (48%, n = 16) when they needed assistance. Twenty-one percent of students (n = 7) contacted a peer first, 21% (n = 7) contacted an academic coach first, 2% (n = 2) contacted their academic advisor first, and one student (3%) used other sources for support first. One student commented, "I would say asking peers for help regarding the course work was most helpful." In further review of the open-ended responses, students found that peer interaction, when incorporated into the course activities, was very helpful to support their learning (n = 6 of 34 comments). A student commented, "[Professor's name] course project created an interactive environment amongst student peers which made the learning experience enjoyable. More interaction is required in order to learn in an online environment." While the professor was typically the first person students reached out to for help, this finding suggests that providing opportunities for students to interact and ask questions of other peers during course activities can enhance the students' perceptions of support and deepen their understanding of the course content.

Further analysis was conducted to compare the traditional and nontraditional age groups. The results showed that students aged 24 and under were split. Fifty percent (n = 4) of these traditional students indicated they reached out to another student first, and 50% (n = 4) indicated they reached out to their professor first. The data also revealed that the nontraditional students primarily reached out to the course professor first when they had a question or issue. Just under half (48%, n = 12) reached out to their professor first, 28% (n = 7) contacted an academic coach, 12% (n = 3) contacted another student, 8% (n = 2)

contacted the academic advisor, and one student sought out other sources first. The results indicate that the traditional-aged students were more likely to reach out to another peer for help compared to the nontraditional students, who listed a peer as their last line of support. Both groups viewed the professor as their first line of support.

Furthermore, not all students felt the support they received from their professors helped them to succeed in their courses. In response to the question, "I feel better prepared to deal with my academic work because of the contact with my professor," 17% of students disagreed; 10% ($n = 3$) disagreed, and 7% ($n = 2$) strongly disagreed. Twenty-eight percent were neutral. Twenty-two percent of students disagreed that the provided support helped them to succeed in their courses (i.e., 11% [$n = 3$] disagreed and 11% [$n = 3$] strongly disagreed), and a third (32%, $n = 9$) were neutral. Students were asked what could be improved to support their learning; the respondents indicated that having clear instructions with due dates and providing direction on key information was important to support their learning for the course modules ($n = 7$ of 37 comments). One student commented, "Having clear instructions is crucial when participating in a fully online learning environment. This is something I felt was often missing." Another student remarked, "Straight content with clear explanations are needed. Some readings are hard to interpret and [a] waste [of] time considering the content learned and tested from." This aligns with a previous finding that the student would prefer a better balance between the time needed to review the required content (e.g., readings and videos) and the time needed to participate in the course activities.

Perception of Faculty Provided Support Interventions

The students' perceptions of the support interventions provided by the course faculty were investigated. Figure 10 illustrates the support interventions used by the

students in the Fall semester. The top support strategies utilized by students were sending electronic messages, which included emailing the professor (55%, n = 18), emailing their academic coach (49%, n = 16) or messaging with their professor via Blackboard (46%, n = 15). Just over a third of respondents reported attending virtual office hours with their professor (39%, n = 13), attended virtual tutoring sessions with the academic coaches (36%, n = 12), and 33% (n = 11) of students emailed with their academic advisor about their coursework. A small number of students indicated that they utilized other methods of support (9%, n = 3), chatted online with the professor outside of the virtual office hours (6%, n = 2), or spoke over the phone with an academic coach (6%, n = 2) or the academic advisor (6%, n = 2). Only one student (3%) indicated they spoke with their professor via phone for support. The open-ended responses indicated that students also watched recordings of the virtual office hours held by their professor and reviewed the class forum posts for additional support.

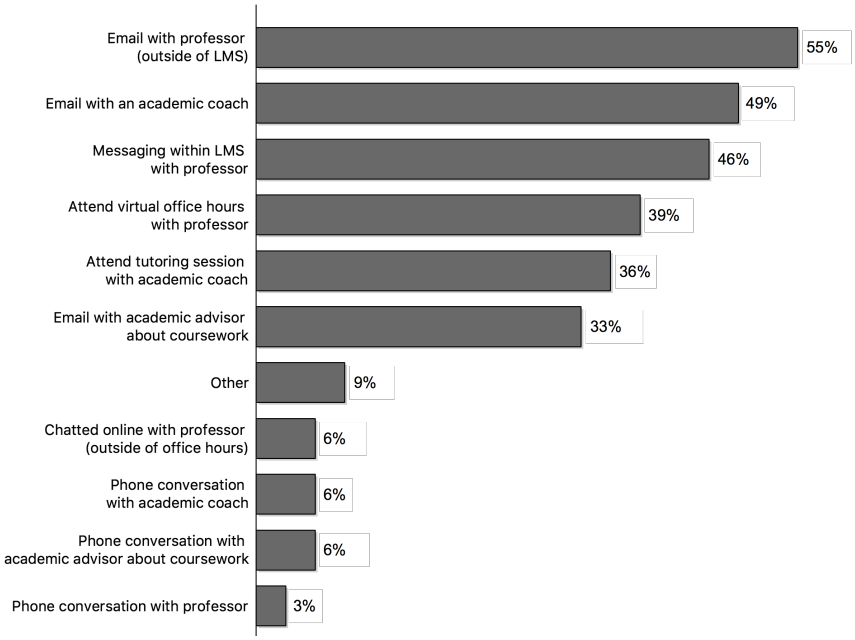

Figure 10: Utilized Support Interventions in the Fall Semester

Further analysis was conducted to compare the support methods utilized by the traditional and nontraditional students. Figure 11 illustrates the results. The majority of the traditional students emailed with their professor (88%, n = 7) or messaged with their professor via Blackboard (50%, n = 4), emailed with the academic coach (38%, n = 3) and attended the virtual office hours held by their professor (38%, n = 3). There was minimal variation in the supports utilized by the nontraditional and traditional students. The students in the older age group primarily emailed with their academic coach (52%, n = 13), emailed with their professor (44%, n = 11), messaged with their professor via Blackboard (44%, n = 11), and attended virtual office hours (40%, n = 10). The results showed that both age groups preferred to email or to send an electronic message in Blackboard to receive help when needed. The results also showed that both groups attended the virtual office hours as a primary means of support. The results further suggest that the nontraditional students (44%, n = 11) attended the virtual tutoring sessions more than the traditional students (13%, n = 1). However, this would require further research due to the small sample size.

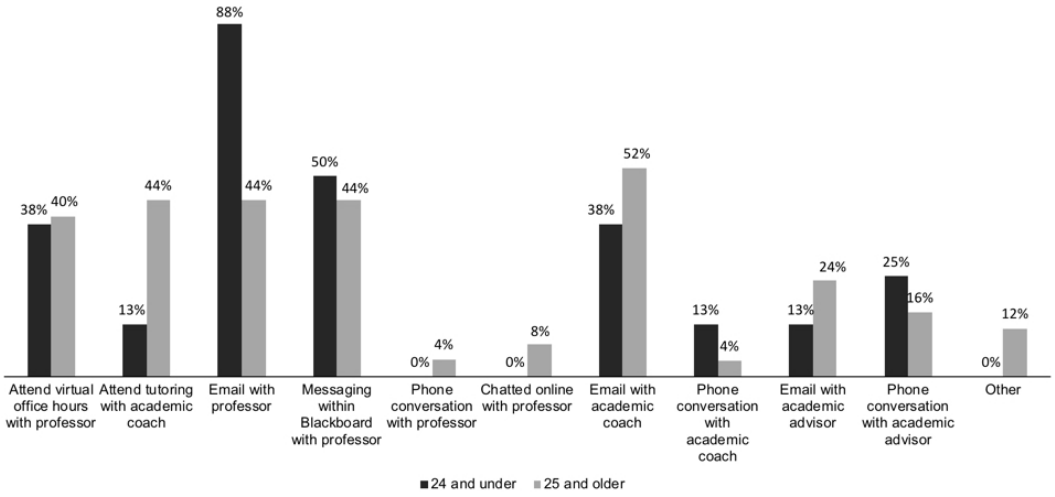

Figure 11: Utilized Support Interventions by Age Group

The students were asked to rate the helpfulness of the support strategies they utilized in the Fall semester. Table 9 provides the results. One limitation should be noted: if students indicated they did not utilize a support method; it may be because that method was not offered in the course in which they were enrolled. Therefore, inferences about students taking advantage of the supports provided to them cannot be made. Each faculty member provided at least one of the interventions listed in the table. However, not all of the interventions were provided by all of the faculty. Future research could be conducted to further evaluate the usage of these support methods and the reasons why students choose a given method. The results showed that students found that virtual office hours with pre-scheduled instructional topics covered by the professor (36%, n = 12, extremely helpful) and virtual tutoring (36%, n = 11, extremely helpful) were the most helpful support methods utilized. Students perceived the ability to have a live conference with their instructors as a valuable support method. The results are discussed further by each support method in the following sections.

Table 9: Support Methods Rating of Helpfulness

Question	Rating				
	Extremely helpful	Moderately helpful	Limited helpfulness	Not helpful	Did not utilize
Virtual office hours with pre-scheduled instructional topics covered by the professor (*n* = 33)	36%	18%	18%	9%	18%
Virtual office hours to chat online with the professor (no scheduled instruction provided) (*n* = 32)	31%	16%	19%	0%	34%
Emails from professor when falling behind (*n* = 30)	20%	33%	13%	13%	20%
Tutoring sessions from academic coaches (*n* = 31)	36%	16%	10%	10%	29%

Virtual Office Hours

Overall, the students who attended the virtual office hours (VOH) sessions viewed these sessions as a valuable resource that supported their learning. The students found that the opportunity to communicate and receive instruction from the faculty member live was extremely helpful. A majority (54%) of the students found the VOH sessions that included a live presentation by the faculty to be helpful (i.e., 36% [*n* = 12] extremely helpful and 18% [*n* = 6] moderately helpful). Only 18% (*n* = 6) found that these sessions had limited helpfulness, and 9% (*n* = 3) did not find the sessions helpful. In an interview, a student discussed their experience attending one of the live events.

> We went through the module, as far as all of the chapters that we were supposed to be reading in the book. And for each chapter, he would say, "These are the items

> you really need to think about." Then he would give examples. I think it was an hour and a half long, and there was only three or four of us that were on his call. You could really ask questions. It was just very helpful. He's a really great ... I thought he was a great resource.

The student found this live event to be exceptional to support her learning. She also admitted that she only attended the session after she had emailed the professor for help and he directed her to attend the session. Another student commented on how helpful the live presentations had been in their programming course. "Trying to learn a new language in a fast-paced course, it feels like there is substantial amount of coursework in the beginning of the semester and you really don't have time to soak in the information." The students found that the opportunity to ask questions with the professor about important concepts was an extremely valuable support for their learning.

Furthermore, just under half of the students (47% of 32 respondents) indicated that they found the VOH in which they chatted online with their professor to be helpful to support their learning (i.e., 31%, n = 10 indicated extremely helpful, and 16% [n = 5] indicated moderately helpful). One student commented, "[The] live chat session with my professor was most helpful." Additionally, 19% (n = 6) of students found these sessions only provided limited helpfulness. However, there were no students who did not find it to be helpful. Most students found the opportunity to meet and ask questions of their professor was helpful to their learning.

When the students were asked what they found to be the most helpful to support their learning, most respondents indicated that the VOH sessions in which the professor presented course information (both live and recorded and subsequently posted online for viewing later) and videos for course content were the most helpful (n = 15 of 34 total comments). Two students commented on these tools, "If [the] professor can have a virtual class where he/she presents a topic and we can interact [in] real time, especially on

technical courses… where we need a guide [or] live person to do it, [it] will help us build our foundation" and "More videos would be helpful if we are limited to one virtual office." Another student remarked on the recordings of the virtual office hours.

> I appreciated being able to access the recorded virtual office hours through blackboard collaborate. Since I do work full time and cannot attend at the specified time, I got to still take advantage by watching the recording.

Another student indicated that the recorded lectures from the VOH sessions were helpful and further elaborated on attending the live events: "It gives the course professor a stronger presence since it's not a face-to-face environment and would give the opportunity to have further discussions, questions on the topic(s) or subject matter with the professor." The students found that the live virtual events enhanced their learning, and the recordings of the live events were also important for those students who were unable to attend live but still needed guidance on the course topics.

Virtual Tutoring

Virtual Tutoring sessions were offered in the Introduction to Programming Concepts course. These sessions were held via Blackboard Collaborate and facilitated by an academic coach. Of 31 total respondents, 36% (n = 11) of students found the tutoring sessions with the academic coaches to be extremely helpful, and 16% (n = 5) found them to be moderately helpful. Only 10% (n = 3) of students indicated that the tutoring sessions provided limited helpfulness, and 10% (n = 3) did not find the tutoring helpful. Some students indicated that they had problems with attending the sessions due to the times that they were offered and wished that they would happen more frequently. One student commented, "I did benefit from the live video tutoring sessions, but it was difficult to make

the times with work and family. But they helped." Another student commented, "Also, consider online students may be a working adult so more night online sessions." More variability and frequency of sessions offered would have benefited the schedules of the nontraditional students.

Furthermore, some students had an issue with the delivery of support in the tutoring sessions. A student described their experience in an interview. The sessions were limited to one hour, and approximately 10 or more students attended. The student felt that this was too many students and not everyone were able to get their questions answered in the time allotted. He stated the students would ask a question one at a time and the coach would address it. One student, in the survey, commented that the sessions in general were helpful, but they did not find the format of the sessions conducive to their learning. The student remarked:

> I tried [the tutoring session] but when you have a couple of students and a time limit of one hour it is kind of hard to get help. It's a first come first basis, so you have to wait your turn. Would be nice to have more sessions.

Regrettably, another student struggled to understand the tutor due to their heavy accent, stating, "Unfortunately due to the language barrier, I was not able to work with my tutor in my programming class." Due to this hindrance, the student was unable to take advantage of the opportunity. While there were issues and concerns with the format and timing of the tutoring sessions, overall, the data revealed that the majority of students found these sessions helpful for learning online, especially for challenging subjects such as programming.

Interaction with Faculty

The findings showed that students preferred to use email to communicate with their professor before using any other methods of communication. The results showed that the overwhelming majority, 82% (n = 27), of students preferred email. Further, two students (6%) indicated they preferred using a video-conferencing technology such as Blackboard Collaborate or Skype, one student (3%) preferred to chat online, one student (3%) preferred communicating via phone, one student (3%) preferred text message, and one student (3%) indicated Other. A student commented, "Any form of communication is helpful. The communication should be a 'fit for purpose' medium. One should use the means of communication that is available or convenient at that moment for both parties." These results show that email is a highly useful tool to support learning and is convenient for the majority of the students.

The students were asked about their expectations of receiving alerts from faculty about their academic performance. Table 10 lists agreement levels for statements regarding these alerts. In comparing the students' expectations at the beginning of the semester to what actually occurred there was a great difference. Entering into the semester, the students expected to be contacted regularly with academic support; however, this did not occur. The results showed that entering into the semester, half of the students expected to be contacted frequently with academic support (i.e., 9% [n = 3] of students strongly agreed, and 41% [n = 13] agreed). However, the findings also showed that only 24% of students agreed they were contacted regularly (i.e., 7% [n = 2] strongly agreed, and 17% [n = 5] agreed). The majority of students (46% of 30 responses) disagreed (i.e., 23% [n = 7] and 23% [n = 7] strongly disagreed) that they were contacted frequently with support, and 30% (n = 9) were neutral. Twenty-two percent (n = 7) of students did not expect to be contacted, and 28% percent (n = 9) were neutral.

Of the students who did receive email alerts from their professor regarding their academic standing, the findings showed that most were glad that their professor contacted them about their academic standing and that it motivated them to persist in their course. Fifty-eight percent (n = 19 total responses) of students were appreciative when the faculty member contacted them about their academic standing; 5% (n = 1) strongly agreed, and 53% (n = 10) agreed. Sixty-two percent (n = 29 total responses) of students found that receiving an email about their academic performance motivated them to continue when they were falling behind; 17% (n = 5) strongly agreed, and 45% (n = 13) agreed. Seventeen percent (n = 5) of students were neutral, and 21% disagreed (7% [n = 2] disagreed and 14% [n = 4] strongly disagreed) that the alerts increased their motivation. Interestingly, a third of students (37%, n = 7) replied Neutral to the statement, "I was grateful that my faculty contacted me about my academic standing," and one student (5%) strongly disagreed. Overall, the results showed that the majority of students were grateful for alerts about their academic standing, and the alerts motivated the students to persist when they were received. However, these alerts did not occur very often during the Fall semester.

Table 10: Alerts About Academic Performance: Agreement Level

Question	Rating				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Entering the semester, I expected to be regularly contacted with academic support.	9%	41%	28%	22%	0%
I am regularly contacted by people who are concerned with my academic performance. (n = 30)	7%	17%	30%	23%	23%
Alerts about my academic standing motivate me to continue when I am falling behind in my coursework. (n = 29)	17%	45%	17%	7%	14%
I was grateful that my faculty contacted me about my academic standing. (n = 19)	5%	53%	37%	0%	5%

STUDENT INTERVIEWS

In the survey, students were asked if they were willing to participate in an optional follow-up interview, and seven students agreed to be contacted to discuss their experience in the Fall semester. The students who agreed to participate were contacted via phone to discuss their experience and the support that they received. All of the interviewed students were nontraditional students. The students were asked about their perception of the support provided by their faculty and academic advisor, their experience in the online environment, and their biggest obstacles in completing their course activities.

Learning Online

The interview results supported findings from the survey, which revealed that students with no prior online experience had more difficulty navigating the online environment than those who had taken an online class before. One student with no prior experience of online education discussed her struggle with learning online at the beginning of the semester:

> I had never been introduced to doing a class online, so it was a huge struggle, and I spent a lot of hours during work doing some of the homework [and] the modules…. I would just say it was a huge struggle for me to grasp the whole online thing. I would say by the end of it, I figured it out, and I got really good grades, but yes it was a struggle.

By the end of the semester, the student felt that learning in the environment became easier as she gained more comfort. However, the struggles she faced in adjusting to the environment, combined with the complexity and amount of coursework, impacted her perception of continuing with the program, and she did not re-enroll for the Spring semester. She indicated that she planned to take time in the Spring to evaluate whether continuing in the program was worth the financial and personal investment she would have to make.

Additionally, the survey results found that nontraditional students indicated that navigating the online environment impeded their performance in their coursework. Expanding on this finding, a student commented that he was uncomfortable with the online system, stating, "I had some difficulty because I hadn't really dealt with Blackboard either. I was just kind of tossed into the blender last semester. I hadn't done Blackboard before." The student felt there was a learning curve to understanding how to navigate Blackboard and utilize the tools (e.g., Blackboard Collaborate for video-conferencing) that would support his learning. However, the student indicated that after about two months, he felt

comfortable and was still able to attain good grades. Therefore, even these obstacles did not impact his performance overall in the course. The interview results indicated that while students initially had trouble navigating the online environment, over time they learned to master the navigation so that it no longer impeded their coursework.

Support from Faculty

The interviewed students felt that the course faculty provided regular interaction opportunities for them to get assistance if needed. However, the students indicated that they only reached out to their professor if they had a question or wanted help. The students worked at their own pace and around their schedule and did not feel they needed any additional interaction beyond what was provided. One student commented.

> I definitely think you feel isolated, I mean because it is online, so you're sort of out there on your own. I don't think that there was any lack of [the professors] trying to have interaction. It was just the only time I wanted to be a part of that is if I was really struggling.

One student also indicated that the discussion forums in which students interacted with posts from their peers helped him to feel connected to the program. He stated, "I think the effort where you have to comment in each other's work student-wise helps. At least for me, I tend to just work on my own anyways if I'm not around people." He also indicated that he has to be intentional about interacting with others in the course and make it a part of his everyday life to check the forums and stay current with the class.

The students preferred when the professors took an active stance to highlight important points from the course module. All interviewed students discussed the need for well-defined introductions to the course topics so that the students could be aware of what to focus on while completing the assignments. The students were all aware that online

learning required them to be self-motivated and self-regulate their learning. However, they felt that the degree to which it was required in the Fall courses was too much. Each found that when the professor took the time to narrow down the content from the lesson to highlight what to focus on, it improved their ability to understand the content and focus on what was needed. One student commented on the professor's interactions in the group discussion forum:

> If there's a lot of discussion going in class sometimes, they can be time-consuming to try to filter out what will I benefit from. So, when the teacher sees something that is beneficial to the whole group, they create an email that kind of says, hey this question came up, here's some feedback on it.

The student found it was beneficial when the professor would post to the whole group to highlight topics or questions that the students were discussing with additional feedback on the topic. One student commented on the difference between online and face-to-face classrooms, stating that the online classroom required her to take more time to read and synthesize the resources provided. She compared this to attending a face-to-face lecture, stating, "in a classroom, you attend a lecture where the professor discusses important topics and key information." The student indicated that because it took extra time to complete the required readings and understand the content, in addition to completing the required activities, she struggled to stay current. The student indicated that she felt unprepared for the amount of self-regulated learning that was required for her classes.

Furthermore, students found that videos were useful when they aligned with the important takeaways from the course content. These findings were further supported by the survey results and the open-ended survey responses. One student commented on their preference for the use of videos.

> Recorded lectures in each class. It gives the course professor a stronger presence since it's not a face-to-face environment and would give the opportunity to have further discussions, questions on the topic(s) or subject matter with the professor.

Additionally, in an interview, a student commented that he found the tutoring sessions with the academic coaches to be very helpful. He stated, "I've also gotten in touch with a couple of academic coaches, that have helped with me my programming class. I didn't have much experience with programming, and they brought me up to speed pretty quickly. And it was really nice to have that support." The student felt that he had received personal attention from the academic coach during the session. The student commented, "They would find out where the hurdle was, that I couldn't get over, and help me over it." He said that when he met with him, the coach shared his screen, and they talked through the issue that he was having. The coach directed him on how to correct his issue. He found the virtual tutoring session to be very helpful to his learning.

Support from Advisor

In the interviews, the students praised their interactions with the academic advisor and felt that she was willing to help them whenever it was needed. One student praised the advisor's assistance in helping him resolve a problem he had with his GI Bill. The student had a delay in his payment that could have resulted in him having to withdraw if it was not resolved. He said, "She was able to put me in touch with the people to take care of it, and she was able to figure out the due dates." The advisor provided him with the needed resources that allowed him to sort out the delay in his tuition payment. Students also appreciated her individualized email communications and the guidance she provided on important dates. One student commented, "She checks in, I think about every couple of weeks, every week at the beginning of the semester "How ya doing? What's going on?

Remember this is the dates for withdrawal, this is the dates for whatever. Sign up for this." Students found that they were able to talk with their advisor easily, and she was informative about the program requirements.

However, some students found that course advising, particularly counseling on course load, could be improved. The students indicated that they would have preferred additional guidance on the time commitment required for the course and the extra time that would be required for learning in an online environment. Six of the seven students interviewed felt they enrolled in too many classes for the Fall. One student commented, "The only thing that caught me off guard is the first semester, I took every class available and found out that I didn't have enough time to finish that." This student was able to drop the class, but some students were unable to because the drop date had passed before they realized they had taken on too much. Another student commented. "You know, I signed up for seven hours last semester, and quite frankly, if I had known how hard it [would be], I would have never signed up for that." A student stated, "I had 13 hours, and a full-time job with two kids. [It] is not a good idea unless you have a 10-pound brain, which I don't." An additional student commented.

> She rattled off what classes I could take, which you know, none of those really mean anything to me because again, I haven't been in college since 1993. And like an idiot, I did seven hours, which I should have never done, but I just sort of randomly picked the ones that sounded the most interesting to me…. I didn't feel like she really helped me in figuring out which courses I should take. She certainly gave me a list, but I was fending for myself.

The students felt that the advisor provided them with the courses that were available but did not guide them sufficiently considering that they were nontraditional students with full-time jobs and families.

Overall, the students agreed that the supportive interactions provided by their academic advisor helped them to succeed in the program. The advisor provided them with an outlet to discuss concerns and made them feel more comfortable seeking assistance when they needed it. When entering into the program, students were not familiar with learning in the University's online environment and the time commitment that would be involved in the courses. Therefore, the data shows that the students would have liked to be provided additional guidance on their course load, taking into consideration that they were nontraditional students.

SUMMARY

The learner support system implemented in the online Cyber Security program was referred to as the "Community of Care" by the study participants. The Community of Care was designed to support the student's lifecycle management by overseeing the student from the moment they become a prospect for enrolling into the program until they graduated or attained their academic goals. The learner support system was designed to act as a safety net to enfold support for students throughout their learning experience. The goal was to identify students who were falling behind or at risk of failing in their courses and then encourage them to continue by helping them to resolve any issues when the problem was realized. This required the participants of the Community of Care to be proactive in supporting the student's needs, rather than reactive when it is too late. In the Fall semester, five support roles were implemented in the Community of Care. These included enrollment coaches, the academic advisor, the course faculty, the academic coaches, and the assessment specialists (also known as graders or Teaching Assistants).

As a result of the closing of the OIE, some planned services and an early alert system that would have helped to support students were not implemented. Due to these

organizational and program changes, the Cyber Security program administrators shifted the direction of the Community of Care to a cooperative effort between the program's academic advisor and the course faculty to support students. Each role was given the responsibility to support students in their coursework and engage with them to encourage persistence.

Academic Advisor

The academic advisor in the online Cyber Security program was a one-stop resource for students enrolled in the online Cyber Security program. The advisor facilitated a "white glove" approach that aimed to proactively assist students by taking extra steps to ensure that they were set up for success in their courses. The Advisor was dedicated to helping students and wanted them to succeed. She wanted the online students to have a pleasant experience and realized that learning at a distance would not provide them with some of the affordances that on-campus students would have. The support she provided included assistance with the degree or program requirements, major and minor guidance, course add or drop specifics, course or program withdrawals, majors, credit or non-degree credit requirements, financial aid assistance, and any other degree program inquiries.

The advisor's prior experience as an on-campus student academic advisor established her commitment to helping students. When journey coaching was not implemented, the advisor actively worked to compensate for this loss by becoming more proactive in supporting students. Throughout the semester, she used various strategies to support students; these included a bi-weekly newsletter, direct-contact attempts, mid-term outreach to at-risk students, phone and email communications to students identified as falling behind, and course and program advising for the Fall and Spring semester. The advisor also stayed in regular contact with the course faculty. The most difficult challenges

the advisor faced included defining what the "white glove" approach meant for the enrolled students, achieving the appropriate balance of academic rigor and caring for students, and developing a new process for journey coaching.

Faculty

For the Fall 2017 semester, the course faculty signed a contract before teaching their online Cyber Security course. The contract outlined the additional responsibilities and expectations involved in teaching online. It also outlined the requirements of faculty support for students. The faculty of the Principles of Information Systems for Management (POISM), Principles of Marketing (POM), and Inside Cyber (IC) courses were interviewed. Each course provided foundational concepts related to their respective topics. Both the POISM and the POM of these professors had taught their course on-campus for several years. However, the newly implemented online course was their first experience teaching online. In contrast, the IC professor had taught online for many years. He had recently been hired, and this was his first semester teaching at the University.

The support strategies utilized in the Fall semester were chosen by the instructor of the course, and they varied for each course. The types of support strategies used included: interactions with students (i.e., emails, weekly announcements), feedback on assignments, virtual office hours, and virtual tutoring sessions with academic coaches. The three most significant challenges faced by the course faculty in the Fall semester included understanding the online student's mindset, maintaining rigor in their courses, and lack of time.

Students

Overall, the majority of the students felt supported in their online coursework and felt that the support they received during the semester was helpful and encouraged them to persist in their courses. A timely response to their requests for assistance was rated as the most important form of support. This was followed by receiving feedback on course activities, having access to an academic coach or tutor, having easy access to communicate with their professor, and live video-conferencing sessions with their professor. Further, the top obstacles reported by students included lack of time, the complexity of the coursework, and dealing with social or family issues outside of the classroom. Students also reported that lack of academic support, lack of familiarity with online learning, issues with their professor(s), feelings of being underprepared for their courses, navigating the online course environment, lack of motivation, and demands from their job hindered their persistence or inhibited their performance. Students also reported a lack of clear direction on the course assignments and described the course readings as complicated and hard to interpret. The students were frustrated with the amount of time it took to read, interpret, and complete the assignments and felt that the time expectations were underestimated. Students experienced additional stress due to unclear instruction while completing the course activities and course exams, and this stress impacted their feelings of being supported.

The students felt that they could easily talk with their advisor and appreciated being able to speak to someone other than their professor about their academic standings and enrollment. They believed that their advisor wanted them to succeed. The students were appreciative of the support provided by their advisor and felt that she was watching out for them. However, students would have preferred additional guidance when being advised on their courses. The students wanted guidance for making decisions about how many

classes to take and the time commitment that would be required in an online environment. The students indicated that the advisor provided them with the courses available but did not guide them sufficiently on the course load.

Most students felt supported by their faculty in the online Cyber Security program. The students perceived the overall support they received in their coursework for the Fall semester to be helpful. Students also remarked they felt like the professors were responsive to their concerns, encouraged them, and tried to work with them when needed. Students were appreciative when their faculty contacted them about their academic standing. Proactive emails from the course faculty about falling behind or their academic standing helped students feel motivated to continue with their coursework, and they appreciated these notifications. However, the students also indicated that these emails did not occur very often during the Fall semester.

Overall, the students found the virtual office hours (VOH) to be a valuable resource and stated that these sessions supported their learning. The students found that the opportunity to hear and receive instruction live from the faculty member was the most helpful tool for supporting their learning. The students also found the VOH sessions that included a live event in which the course faculty provided a brief lecture covering pre-scheduled topics to be the most helpful, especially in the more complex courses such as learning a programming language or other difficult topics. In the interviews with the professors, it was found there was low attendance in the VOHs. However, it was found that students only attended when they needed help.

Overall, most students found the virtual tutoring sessions to be helpful when they were able to attend. Unfortunately, many students had difficulty attending the sessions a to their limited availability; the times offered did not fit their schedules. Students also reported having an issue with the format of the tutoring sessions and difficulty

understanding the academic coach due to a heavy accent. While there were issues and concerns with the delivery and timing of the tutoring sessions, overall the data revealed that the students liked having these sessions available and found them helpful. Students also felt tutoring sessions were a needed support method for learning online, especially in their more difficult classes.

A comparison of the support preferences of nontraditional and traditional students was performed. It was found that the nontraditional students reported top obstacles of lack of time, the complexity of the coursework, social family issues, feeling underprepared for their courses, and lack of academic support. The top obstacles reported by the traditional students included social/family issues, issues with their professor(s), lack of academic support, and lack of time. The traditional students indicated that lack of motivation hindered their academic performance, where the older students did not. Additionally, the nontraditional students indicated that obstacles of feeling underprepared for their courses and navigating the online environment impeded their performance, where the traditional students did not report these hindrances. Both traditional and nontraditional students utilized the same support methods. The results show that both age groups preferred to email or to send an electronic message, and both groups attended the virtual office hours.

Chapter 5: Discussion of Findings

The chapter discusses the findings of the study.

DISCUSSION

This research focused on the implementation of the "Community of Care," the learner support system implemented in the Fall 2017 semester for the online Cyber Security program. The study explored how the support system was implemented, the experiences of the academic advisor and the course faculty in providing support to students, and the students' perceptions of those supports. The following sections provide a discussion of the findings organized by the study's research questions.

Learner Support System Implementation

The Community of Care was designed as a mechanism to oversee students throughout their program trajectory (Tait, 2000) and provided academic and nonacademic support to students (Daugherty et al., 2015; Dowling & Ryan, 2007; Rainwater, 2016; Simpson, 2000; Tait, 2000; Tripp, 2008). Research indicates that support is critical for students' success, satisfaction, and persistence in online education (Dowling & Ryan, 2007; Simpson, 2004). Tait (2003) posited that support helps students to learn successfully, thereby, increasing their confidence and self-esteem. The Community of Care comprised five roles: enrollment coaches, an academic advisor, course faculty, academic coaches, and an assessment specialist (also referred to as a grader or Teaching Assistant). These roles were planned and customized for the online Cyber Security program, and all of these practitioners worked to support students throughout the semester (Tait, 2000).

The enrollment coaching role was highly valued by CoB administrators and the academic advisor. This finding is consistent with prior research, which indicated that enrollment coaching is an effective strategy in enrollment management (AACU, 2011; Cesarini, 2011; Garner, 2017). In this study, the coaches were in contact with prospects who inquired about the online Cyber Security program through various marketing strategies. The enrollment coaches alleviated some of the workload for the academic advisor, who would have otherwise fielded these inquiries; they worked closely with her, routinely sharing information (AACU, 2011; Cesarini, 2011; Garner, 2017). The work conducted by the enrollment coaches allowed the advisor to focus only on those individuals who were serious about enrolling and to provide personalized support to those who were successfully admitted to the program. The use of an enrollment coach is worth consideration for programs such as this one that only have one person designated to field questions from prospective students. The Associate Dean also felt that this role was highly useful for recruiting students and contributed to a higher level of enrollment in the program.

When it was determined that the OIE would be closing, the scope of the learner support system became localized to the individuals providing support, their support philosophy, and the time they had available to monitor the student's performance. The Community of Care was designed to support the students' lifecycle by overseeing the students and helping them persist throughout their academic journey. The OIE envisioned that the five roles of the learner support system would encircle students with support in an organized method to aid students when needed. However, with the loss of the OIE there was a loss management of the support system as a working system. This lack of management left gaps in the learner support system and presented risks for students to fall out of the program before support was provided; which the Community of Care was established to prevent this outcome.

An example of this gap was the lack of cooperation between the course faculty and advisor. These roles lacked clear direction and guidance on their responsibility for working cooperatively when at-risk students were identified. The faculty would often contact the advisor when they had a student who was unresponsive; however, they felt unsure about when this handoff should occur. This ambiguity left the faculty unclear on what was expected of them in this regard. This lack of direction may have led to some students possibly falling out of the program. While not all students can be saved, and the student's success does require the student to take ownership of their learning, having clear direction on contact attempts and hand-offs between each support provider (especially in the absence of technology) will ensure that faculty and staff do all in their power to try to retain each student (Dowling & Ryan, 2007; Tait, 2000). Having clearly defined roles that outline how departments are to work cooperatively is vital to the success of a learner support system (Britto & Rush, 2013; Simpson, 2000, 2004; Tait, 2000).

Tait (2000) theorized that the institution should have a management system in place to track the students' progress and intervene with appropriate support before students falls significantly behind. To support at-risk students, the faculty were limited to performing a quick scan of the student's grades and performance on activities (whether complete or incomplete), and the advisor was only provided mid-term grades to identify students who were falling behind or in danger of failing. The CoB decided not to implement the early alert system that would have supported the Community of Care by identifying at-risk students programmatically utilizing multiple sources of student data. Previous studies show that early alert systems, greatly improve the ability to administer support to the identified at-risk students (Bainbridge et al., 2015; Sclater, 2017; Tait, 2000). An early alert system may have helped the faculty and advisor in identifying and assisting these students (Britto & Rush, 2013; Pistilli et al., 2012).

Academic Advisor

Cynthia, the academic advisor, had many years of experience advising students. However, the Fall semester was her first time advising students in a fully online program. In administering support, Cynthia strived to provide the "white-glove approach" as envisioned by the OIE, in which she would help ensure that all students were set up for success. The role of this advisor differed from the institutional support services that are typically offered in online programs, which are usually ancillary and often require the student to seek out the service (Cross, 2018; LaPadula, 2003; Salih, 2004; Schroeder & Terras, 2015; Simpson, 2000; Tait, 2000). In contrast to the traditional role that is typically reactive, the advisor believed that her role was to actively assist students and administer intrusive advising. She felt it was her duty to help students to persist by proactively taking extra steps when needed and helping to resolve the students' problems. When the students had an issue, the advisor took steps to resolve it herself without transferring them to another department; thus, she became the students' one-stop resource. Her goal was to provide a strong support system to help students overcome barriers and continue in their coursework, as well as to provide emotional support when necessary (Rovai, 2003).

An overwhelming majority of the students (79%) agreed that their interactions with their academic advisor helped them to feel more comfortable in seeking academic assistance, and the support they received helped them to persist. These findings align with literature suggesting that a student's relationship with their academic advisor can significantly influence their success, persistence, and satisfaction in their academic program (Abelman & Molina, 2001; J. D. Jones & Williams, 2006; Rice et al., 2009). Providing emotional support and helping students feel connected to the learning environment was found to be an important aspect of the advising role (Conceição & Lehman, 2016; Salih, 2004). This finding suggests that an emotional support role is an

important consideration in the development of a learner support system in online education, and it aligns with prior studies' findings that nonacademic supports for students' emotional needs can be a powerful motivator for student persistence (Dirkx, 2001; Salih, 2004) and help students successfully transition into their learning experience (Rice et al., 2009). The students in this study appreciated having someone else to speak to other than their professor about their academic standings and enrollment. They believed that their advisor wanted them to succeed.

The academic advisor aimed to provide sound advice on the courses that were available and guide students in which courses to take. However, the students found that course advising could be improved. It was found that many of the students felt they had enrolled in too many classes in the Fall. According to the advisor, most students enrolled in 10 to 11 hours of course credits, which she equated to approximately three courses and a lab. Schroeder and Terras (2015) found that providing learners with practical guidance on their courses and course load was the greatest need in online environments. Additionally, Kim, Shin, Smith, and Hwang (2018) suggested that nontraditional students must be provided with realistic and precise information about the program and online learning procedures so they may better regulate their learning. The advisor informed students about the courses that were available in the Fall semester but may not have guided them sufficiently, considering the nontraditional student population. Research suggests that providing appropriate guidance on courses is a critical aspect of academic advising (Bloom et al., 2007; Varney, 2009). Students indicated they felt unprepared for the time commitment that was required for learning in an online environment, mainly due to the demands of the coursework. Conceição and Lehman (2016) found that online students may have trouble placing themselves into the virtual space; therefore, it is essential to provide support that aids students with adapting to online teaching and learning. The

students wanted more guidance on the time commitment for each course and felt unprepared for the amount of self-regulated learning that was required in the online environment (Cercone, 2008).

Additionally, the advisor struggled with concerns about being too invasive of the students' personal lives; she felt that she was meddling by asking personal questions. In advising students on their course load, the advisor would wait until the student offered personal details about their lives which could be potential obstacles for their learning. Therefore, she questioned how invasive one should be in conducting intrusive advising. Molina and Abelman (2000) found that intrusive advising is beneficial when it helps students in resolving obstacles that lead to poor academic performance and further found that some intrusion is better than no intrusion. In this case, it is possible that the advisors' lack of questioning and awareness of the students' personal obstacles while advising for the Fall semester led to students not being advised sufficiently.

The advisor indicated that she did take the type of course and the student's situation into consideration when advising the students. However, she also advised students to use the 12-day drop period (i.e., the first 12 days of class in which the student could drop a course without penalization) to evaluate their courses and see what worked and did not work for their schedule. However, it appears the students did not follow this advice, or it was unclear. From the students' perspective, upon being told which classes were available, they took as many as they could. Research indicates that adult learners are prone to drop out of online programs due to difficulty in balancing coursework and maintaining multiple life roles and the persistence of the enrolled students may be due to their ability to manage their academic responsibilities along with their personal responsibilities (Rovai, 2003). Thus, extra support should be emphasized when providing guidance on course load for an online environment. This support is especially needed for non-traditional students (Bloom

et al., 2007; Varney, 2009) and is also vital in establishing the student's confidence in their advisor (Cross, 2018). This finding has implications for online advising. It suggests that advising online students may require additional support when it comes to course load. Additional guidance on the courses (e.g., type, of course, required obligations), the time commitment for learning online, and the self-regulation of learning may be necessary to help students deal with the demands of online education (Kim et al., 2018; Schroeder & Terras, 2015).

Advisor Support Strategies

In an attempt to help students stay enrolled and feel connected to the program, the advisor provided various support strategies throughout the semester (Conceição & Lehman, 2016; Cross, 2018; Salih, 2004). She offered multiple ways for students to communicate with her (i.e., Skype, phone, or email), thereby allowing each student to determine their preferred method to discuss their needs (Ohrablo, 2016). Students primarily reached out via email to communicate. The advisor wanted students to have a pleasant experience and realized that being at a distance would not allow for some of the affordances that on-campus students would have. Therefore, she became the one-stop resource for online students, imitating the University's One-Stop center for residential students (Britto & Rush, 2013; Cross, 2018).

The study found that many of the students were glad to have someone else to speak to other than their professor about their standings and academic performance. Research shows that proactive advising is a valuable form of support and encouragement; for new students in particular, this advising facilitates a successful transition into the college experience (Abelman & Molina, 2001; Rice et al., 2009; Thompson & Prieto, 2013). The interviewed students praised their interactions with their advisor and felt that she was

willing to help them wherever possible and go the extra mile when needed (Britto & Rush, 2013). The students felt that the advisor provided an appropriate level of care to support their needs, was vigilant about their progress, and gave them the sense that someone was watching out for them. She provided students with a sense of "being there" (Dirkx, 2001; Salih, 2004). Through regular communications (e.g., newsletter and emails), the advisor gave students the sense of being available when they needed her (Britto & Rush, 2013), which is interesting, considering that it was also found that most students did not contact the advisor very often. It was found that most students indicated they had only interacted with their advisor between one and four times throughout the semester, which is in alignment with literature that has found that students typically only seek advising when they have a need (Young-Jones, Burt, Dixon, & Hawthorne, 2013). This finding has implications for the development of online programs. Providing nonacademic emotional support and care to students through regular, proactive communications may help students feel more connected to the learning environment, thereby increasing their persistence (Abelman & Molina, 2001; Rice et al., 2009; Thompson & Prieto, 2013).

Advisor Challenges

The advisor struggled with incorporating intrusive advising due to her already stretched responsibilities and having limited data to identify at-risk students. Varney (2007) described intrusive advising as proactive interactions with students to engage with them before issues become unsolvable. This approach involves active contact with the goal of forming a caring and helpful relationship to understand students' issues and increase motivation and persistence (Earl, 1988; Varney, 2007, 2012). In this study, the advisor had limited access to data that would enable her to evaluate students' academic performance; she could only refer to their mid-term grades or be notified by faculty. Due

to the faculty having a heavy workload, she was asked to not request any additional student performance reports. Therefore, due to the limited data available, she was strategic in her proactive contact attempts. She reached out to students when faculty deemed them unresponsive or were concerned about them falling behind; at midterms, she also checked in on students who were considered at-risk based on their grades (Abelman & Molina, 2001; Rice et al., 2009; Thompson & Prieto, 2013). Literature indicates that these types of intrusive interventions can produce higher cumulative grade point averages and retention rates, especially for at-risk students (Abelman & Molina, 2001). This study did not investigate the effect the mid-term interventions had on the students' persistence; further research is warranted to explore these effects. This finding also has implications for designing a learner support system. In the planning of the advising role that is to provide intrusive advising, it is necessary that the advisor be provided with a mechanism of regularly identifying at-risk students. The lack of this data limited her ability to provide regular interventions to at-risk students.

The closure of the OIE resulted in many changes that occurred just before the start of the semester and impacted the academic advisor role. These shifting plans presented many challenges and left the advisor to interpret the "white glove approach" without the support of key stakeholders from the OIE who had originally envisioned her role but had subsequently left the organization. The advisor struggled with defining the "white glove approach" and what this approach meant for her interactions with the online Cyber Security students. Going into the semester, her role and responsibilities were still being defined, and this uncertainty led the advisor, in some instances, to make judgment calls on how much and how often students were contacted. The advisor also struggled with balancing between being a caring, supportive voice and enforcing rigid University requirements. Being a one-stop resource made the dynamic of her relationship with the students different

from that of a traditional academic advisor. As a result of the new dynamic, the advisor found that she became more personally invested in the student's situation (Britto & Rush, 2013), which impacted her interactions with the students. This finding calls for defined responsibilities and training to be administered to those providing support well in advance of the launch to increase their confidence. When the OIE closed and the staff left, it became apparent that the advisor did not receive enough training on her role to feel fully confident in providing the white glove approach. This one-stop, concierge method was still being defined as the semester progressed; this finding highlights the need for additional training by those who initially conceived the idea.

Faculty

Each course instructor perceived their role as supplying students with a good education and aimed to create meaningful learning experiences. Each was committed to being available to students when they needed help. This belief was informed by their many years of postsecondary teaching and, in some cases, teaching the residential version of their online course. While the support methods may have varied, each faculty member was steadfast in their desire to provide support to help the students learn and get a good education (Jacklin & Le Riche, 2009; Tait, 1995, 2014). Fostering a supportive atmosphere in online education requires active interactions among instructors and students, which take careful planning and consideration (Tait, 2000). With the assistance of the OIE, the faculty carefully planned the learning objectives, the course activities, and opportunities for support.

In planning for the semester, the course faculty were required by the Associate Dean to sign a contract outlining what was expected of them for teaching online. The contract outlined that the faculty must include a high degree of interactivity and

involvement with their students, in accordance with federal guidelines, to provide regular and substantive interaction between the students and the instructor (IFAP, 2016). The contract was aimed to ensure the faculty provided support through frequent interactions; thereby increasing students' persistence in their courses (Kearsley, 2000; Wilkinson & Sherman, 1990). This contract also aligned with the faculty's belief about providing support to students. However, the faculty primarily relied on strategies they had used previously and their own beliefs about what was needed to support students based on their course content.

A key aspect of the Community of Care was that it was aimed to prevent students from feeling isolated during learning, as isolation has been shown to be a central factor in students' dissatisfaction with online environments (Ludwig-Hardman & Dunlap, 2003; McMahon, 2013). Research suggests that to mitigate these feelings of isolation, faculty must utilize creative methods to help students feel integrated and connected to the program (Jung et al., 2002; Moore, 1993). The faculty of this study felt that isolation was inherent in online education and did not necessarily believe that the students wanted to form a bond or relationship to address this issue. This perception was also reflected in the student data, which showed that students only reached out for assistance when they needed help. The students worked on their own, at their own pace, and admitted that they felt isolated. However, the students also understood that being isolated was a part of online education and did not view this as an issue. The students felt connected to their course and felt that the faculty were available if they needed them. Therefore, this study found that faculty provided a sufficient level of interaction so that students were able to overcome any feelings of isolation from being at a distance (Dwyer et al., 2013). This data also suggests that students' dissatisfaction with being isolated may be associated with lack of interaction when help is needed (Bourdeaux & Schoenack, 2016) and not solely based on being

enrolled in online education per se, as some literature has suggested (Ali & Smith, 2015; McMahon, 2013).

Faculty Support Strategies

In providing support, the faculty aimed to help students to learn successfully, thereby increasing their confidence and persistence (Tait, 2003). Lee et al. (2011) suggested that online program administrators provide multiple options for support and ensure that it is easy to access. The authors postulated that the same type of support is not suitable for all types of learners, so providing varied support approaches would help to promote all students' learning and course satisfaction. Tait (2000) posited that while online learning diminishes the distance between the learner and the institution, multiple opportunities should be provided for distance education students to participate. Support should be specific and aid in the demands of the course or degree program. The support strategies chosen by the course faculty in this study encompassed a range of methods that were specific to the course structure and were guided by the faculty's teaching beliefs. The types of support strategies used included: direct interaction with students (i.e., emails, weekly announcements), feedback on coursework, virtual office hours (i.e., with and without live presentations), and virtual tutoring sessions with academic coaches.

Interactions with Students

Faculty interactions are critical to maintain support and help students feel connected to the program (Brinkworth et al., 2009; Conceição & Lehman, 2016). Online technologies such as email, learning management systems, discussion boards, and video conferences can offer efficient and meaningful ways to interact with online students (Chen et al., 2010;

Dumford & Miller, 2018). The faculty in this study primarily communicated with students via email and occasionally by phone. This finding was also reflected in the student data, which showed that the students preferred email or messaging through Blackboard to contact their professor. Timely response to students' emails was a top priority for the faculty, especially when assignments were due (Marks et al., 2016). Each of the faculty would answer students' emails within 24 hours of receipt. This 24-hour policy was not an expectation handed down to them from the program administrators; it was their personal goal for supporting students (Meyer & McNeal, 2011). Each faculty member distributed course announcements and updates to keep students informed of important information and study tips. These emails were pre-planned and were directly tied to the week's lesson (Lewis & Abdul-Hamid, 2006). The course announcements were deliberate actions by the faculty to ensure students were aware of their presence and remind students to reach out if they had questions.

Tinto (1993) posited that course instructors are integral for the social and academic integration of students in online learning environments. The faculty took an active stance in overseeing their students' progress and encouraging them to participate (Wang et al., 2013). Additionally, the faculty identified at-risk students by checking grades and whether students were completing their assignments. Upon identifying a student who was falling behind, the professor sent an email to the student. However, because faculty had limited time available to monitor students' progress, these email communications were limited. According to the students, receiving an email alert from the course faculty about their academic standing motivated them to persist with their coursework; students appreciated these notifications (Arnold, 2010). However, the students also indicated that these emails did not occur very often during the Fall semester. Therefore, alerts about academic standing are an important consideration for the administration of online programs. The use

of personalized faculty interventions has been shown in literature to increase course completion and program retention (Arnold & Pistilli, 2012; Pistilli et al., 2012). These alerts do not require the use of an early alert system; however, the use of the technology would assist faculty in providing consistent alerts by programmatically identifying students who are identified as falling behind or at-risk (Yukselturk et al., 2014).

Feedback

One method of encouraging self-regulation in online environments is to provide useful feedback that assists students in mastering the course content (Hattie & Timperley, 2007; Wang et al., 2013). Literature has found that it is critical for faculty to deliver feedback to facilitate learning and encourage student interactions in online education (Planar & Moya, 2016; Wolsey, 2008). The faculty sought to provide feedback on all course assignments; this feedback was planned in the course design, and the faculty felt that it was helpful to the students' learning (Tait, 2000). The faculty primarily developed activities that allowed for auto-grading and provided automated feedback when possible. Through this method, students received immediate feedback on their submitted work to aid their learning. Hattie and Timperley (2007) posited that feedback is one of the most powerful influences on learning and achievement. Feedback reduces discrepancies between the student's understanding of the content and their performance.

A limited number of activities required manual grading. Planar and Moya (2016) also suggested that faculty should optimize the resources that are available in order to provide personalized comments when possible and lead the student in the self-regulating their learning. Assessment specialists were used in some courses to assist with manual grading. This resource was only implemented in courses that were deemed necessary due to a heavy load of manual grading or by the complexity of the course. Thus, integrating

the assessment specialists allowed students to get feedback on a regular basis. The inclusion of regular feedback can influence students' success and satisfaction in online environments (Wolsey, 2008), and lack of feedback—or feedback that is not timely—leads to students feeling alone and unsure about their learning (Young & Norgard, 2006). The students in this study reported being pleased with the faculty's response time to their questions or problems and appreciated feedback on assignments when it was provided.

Virtual Office Hours

Establishing virtual office hours (VOH) was a strategy used by two of the faculty for meeting the needs of their online students and aid in their learning (Kohorst & Cox, 2007; Myers et al., 2004). These sessions were designed to provide students the opportunity to have informal communication with their instructor, seek additional help, and ask questions about the course content (McGrath, 2014). Both professors held the VOH sessions twice a week to accommodate the schedules of the nontraditional students (Li & Pitts, 2009; Spencer & Hiltz, 2003). The affordance of VOH is its flexibility; sessions can be scheduled at various times to accommodate a range of students' schedules (Li & Pitts, 2009; Spencer & Hiltz, 2003). It was also noted that one of the professors held live presentations in his VOH sessions in which he prepared a short lecture. The professor felt that having the live presentation was helpful for the students and also kickstarted discussions about the course content. The students also preferred these live presentations and found them helpful for supporting their learning (Edwards & Helvie-Mason, 2010; Johnson et al., 1998; Li & Pitts, 2009).

Both professors that held the VOH sessions felt that having a dedicated time in which the students could talk with them "live," especially in an online environment, was a vital aspect of helping the students succeed (Edwards & Helvie-Mason, 2010; Johnson et

al., 1998; Li & Pitts, 2009). Spencer and Hiltz (2003) found that students were most satisfied with their online course experience when synchronous sessions were offered to communicate with their instructor; they found these sessions "rewarding." The professors in this study felt that being available in real time to answer questions and to offer help was a higher priority that outweighed the extra work the sessions required (Johnson et al., 1998). It also enabled professors to discuss essential concepts from the course lesson and offer study tips, which aided in the students' learning (Barry, 2008; Griffin et al., 2014).

The third professor interviewed felt that VOH sessions were not necessary for her course due to the nature of the course content being foundational. However, all three of the interviewed faculty were teaching foundational courses. This difference raises the question of what type of courses are appropriate for VOH sessions. The results of this study indicate that VOH sessions are a useful support strategy to increase instructor-student interactions, and the students appreciate having them available, even in a foundational-level course. The students reported that the VOH were a valuable resource that supported their learning.

Virtual Tutoring

While virtual tutoring sessions were not administered by the course faculty, the faculty made all decisions about how the sessions were administered and when they were held. Therefore, in this study, virtual tutoring was considered a faculty support strategy. In the Fall semester, virtual tutoring sessions were held to assist students' learning of the JAVA programming language. An academic coach was assigned to the Introduction to Programming Concepts course to provide the tutoring. It is a limitation of this study that the perspectives of the academic coaches and the faculty who guided their work were not available and that the information provided was secondhand. In these sessions, faculty

offered extra support by giving students the opportunity to ask questions and have their issues resolved (Kalogiannakis & Touvlatzis, 2015; Neuhauser & Weber, 2011). The coaches worked with students to foster their learning and worked to help students overcome any problems learning the challenging topics in the course (Kalogiannakis & Touvlatzis, 2015). It was found that the students valued the virtual tutoring sessions as a support strategy.

Faculty Challenges

The most notable challenges faced by the course faculty included understanding the mindset of the online students, maintaining the same level of rigor as the residential program, and lack of time to fully support the online students.

Research has shown that faculty who have minimal experience teaching online are less likely to trust the quality and rigor of online learning (Allen et al., 2012; Benson, 2003; Jaschik & Lederman, 2017; Shea, 2007). Jaschik and Lederman (2017) found that these faculty often believe that online courses are inferior to in-person courses in their ability to rigorously engage students in course material and maintain academic integrity. This negative view was reflected in the beliefs of two of the interviewed course faculty who were new to teaching online. These professors took extra efforts to ensure their courses mirrored the same level of rigor as their residential course (Osika et al., 2009; Wyatt, 2005). The faculty felt strongly that the online program should reflect the same high quality and rigor as the residential program (Wyatt, 2005). To achieve this aim, the faculty ensured that the online courses were designed equivalently to the residential program. Also, this negative view of teaching online may have influenced the faculty's opinion of the online students' mindset in online learning and the level of rigor that was necessary. Therefore, when students commented that the course required too much work, the faculty viewed these

comments as evidence that students wanted an "easy" education and did not want to put in the effort that was required (Dobbs et al., 2017; Wyatt, 2005). The faculty were concerned that changes to the workload would lessen the quality and rigor of the course, as well as the overall degree program (Osika et al., 2009).

In contrast to these professors, the faculty member who had taught online for many years had a different understanding of students' mindsets. When the students complained that there was too much work, he reexamined his course modules and determined that the original design of the course did not give the students the time they needed to reflect and absorb the content (Dumford & Miller, 2018). He then restructured some of the course activities to give the students additional attempts and time to complete the assignments. These findings suggest that a course professor's prior experience with teaching online plays a part in how they perceive students' approaches to learning in the online environment (Osika et al., 2009).

Another challenge faced by the faculty was lack of time and an overburdened workload (Kebritchi et al., 2017). The faculty took on teaching their online courses in addition to teaching their full load of residential courses. Research indicates that online courses require more time and effort than courses in the traditional classroom; as such, online courses require special attention when calculating faculty workload (Capra, 2011; Cavanaugh, 2005; Mupinga & Maughan, 2008; Shea, 2007; Tomei, 2006). Cavanaugh (2005) found that it takes faculty twice as long to prepare for an online course. Therefore, the course faculty carried a heavy load with the launch of the online program. Each taught approximately four or five residential courses in addition to teaching the online course and attending to their duties as a professor (e.g., meetings, committees, and research). This suggests that program administrators did not adequately consider the disproportionate amount of time needed for teaching online (Tomei, 2006). The faculty's workload reduced

the amount of time they could spend interacting and supporting the online students. The faculty developed their own methods for monitoring students' progress, but their limited available time impacted the level of support that students received.

Students Perception

Overall, the majority of students felt supported during the Fall semester. This finding is important since students' experiences as they enter postsecondary education, particularly during the first year, can have an influence on their persistence and retention as they continue their studies (Baker & Robnett, 2012; Gilardi & Guglielmetti, 2011; Mah, 2016). The students felt that the overall support they received during the semester helped them to persist and motivated them to continue in their courses (Conceição & Lehman, 2016). Most students felt that the support they received from the professors and advisor, was beneficial to their success and felt both were responsive when they needed assistance.

Most Important in Receiving Support

Students ranked a timely response to their requests for assistance as the most important form of support they received. This finding is consistent with literature that suggests that timely responses to email or other modes of interaction are critical for students to feel connected to the learning environment (Brinkworth et al., 2009; Fayer, 2014; Holzweiss, Joyner, Fuller, Henderson, & Young, 2014; Howell et al., 2004; Mah, 2016). Furthermore, research indicated that a timely response could have a positive impact on the students' engagement in their learning (Young & Norgard, 2006). Young and Norgard (2006) found that when instructors did not respond in a timely manner, students felt isolated and unsure if their efforts were correct. The students in this study reported

being pleased with the faculty's response time to their questions or problems. It was also noted that the faculty regarded timely communication as a top priority and attempted to respond to the students' messages within 24 hours.

This study found that a prompt response from the course instructor was essential for students feeling supported in the online environment (Baker, 2010; Küçük, Genç-Kumtepe, & Taşcı, 2010; Lee et al., 2011). The students felt their instructor was approachable and immediately available when they needed assistance, which the students highly valued (Baker, 2010; Küçük et al., 2010; Lee et al., 2011). The students also ranked receiving feedback on course activities (e.g., assignments/quiz/tests), having access to an academic coach, having easy access to communicate with their professor, and live video-conferencing sessions with their professor as highly valued forms of support. These findings have implications for those providing support in online programs. Faculty-student interaction and access to multiple support opportunities can influence students' satisfaction for the learning environment.

Perceptions of Advising Support

The goal of the academic advisor for the online Cyber Security program was to support students and listen to their concerns. The advisor provided nonacademic support to students to help them to get established in their online courses and to assist them to resolve any problems. Schroeder and Terras (2015) suggested that academic advisors should provide proper programmatic guidance that students can trust, adequate care for students, and timely responses. The majority of students felt the academic advisor was vigilant about their progress and took care to help them succeed. The students reported that interactions with their advisor helped them to feel more comfortable in seeking academic assistance when needed and helped them persist in their courses (Abelman &

Molina, 2001). This finding is supported by literature which indicates that a student's experience with their academic advisor can significantly influence their persistence and satisfaction in their academic program (Jones & Williams, 2006; Rice et al., 2009).

However, the students found that course advising could be improved as many felt they had enrolled in too many classes in the Fall. Schroeder and Terras (2015) suggested that learners need practical guidance on their courses and course load in online environments. The advisor informed students of the available courses in the Fall semester but may not have guided them sufficiently, considering the majority of students were nontraditional. Appropriate guidance on courses is a critical aspect of academic advising (Bloom et al., 2007; Varney, 2009) as it helps students make decisions on how much academic work they can take on. Students indicated they felt unprepared for the time commitment that was required for learning in an online environment, mainly due to the demands of the coursework.

Perception of Faculty Support

Research suggests that active attempts to engage students and provide support have a positive impact on students' persistence and satisfaction in their programs (Arnold & Pistilli, 2012; Conceição & Lehman, 2016). Most students felt supported and that the support they received from their faculty during the fall semester was helpful (Britto & Rush, 2013; Dowling & Ryan, 2007). Students also felt the professors were responsive to their concerns, encouraged them, and tried to work with them when they needed it. The support provided to the online students was consistent with literature that suggests that instructional support for online learning should include timely feedback, prompt communication, help sessions, and relevant instructional resources and activities (Conceição & Lehman, 2016; Lee et al., 2011).

Students were appreciative when their faculty contacted them about their academic standing, and these alerts motivated them to continue in their courses (Pistilli & Arnold, 2010). Faculty sent emails to students they identified as falling behind or at-risk based on their grades. There is growing evidence that the implementation of intrusive, just-in-time interventions has an impact on increasing student persistence in learning environments (Jones-Schenk, 2014; Pistilli et al., 2012). The finding implies that academic alerts are impactful when administered. However, the interventions did not occur very often during the Fall semester. This finding was consistent with the faculty data, which showed that due to their heavy workload, faculty had limited time available to monitor and reach out to students who were falling behind.

The study also found that students preferred email communication, VOH sessions that included a presentation by the faculty, and virtual tutoring sessions for complex courses. These preferences suggest that students value the opportunity to have personal interactions with their course faculty. This result is consistent with Hajibayova (2017) finding that students valued regular interaction with their instructor through various modes of communication. Literature also suggests that faculty interactions such as emails, announcements, and activities can have a significant impact on the student's perception of faculty and the online environment (Brinkworth et al., 2009; Conceição & Lehman, 2016). The students' felt communication with their professor regarding course content and feedback on assignments was an important aspect of their learning. Students found the VOH sessions were helpful to support their learning, especially when the faculty would respond to their questions or concerns about the course content (Edwards & Helvie-Mason, 2010; Johnson et al., 1998; Myers et al., 2004; Spencer & Hiltz, 2003).

The students also reported only attending support sessions when they needed assistance. This finding is consistent with the faculty data, in which the instructors

indicated that not many students attended these sessions, as well as literature that also shows that VOH sessions are not well-attended (Edwards & Helvie-Mason, 2010; Johnson et al., 1998; Li & Pitts, 2009). Research also suggests possible reasons why students did not attend: the VOH session was not held at a convenient time, the students feel lost and believe that nothing can be done to help, the students fear negative feedback from their professor, or the students do not have any questions and do not need help (Edwards & Helvie-Mason, 2010; Johnson et al., 1998; Li & Pitts, 2009). It was also found that students preferred when their professors recorded the VOH sessions and posted them online for review at a later time. This was found to be especially helpful for students that were unable to attend due to scheduling conflicts.

In review of the faculty data, neither of the interviewed professors recorded their VOH sessions. Faculty should take into consideration that some students may need help but are unable to attend scheduled support sessions due to external obstacles; considering the nontraditional student population, this may happen regularly (Brinkworth et al., 2009; Rovai, 2003). One of the professors mentioned that he was asked by the OIE staff to record his virtual tutoring sessions, and he felt that it was too much for him. Also, the faculty's concern with maintaining the program's rigor may have impacted their perception of recording these sessions; Believing that if a student needs help, then they should make the effort to attend what is offered. Therefore, recording a short lecture or recording the VOH sessions may require a philosophical change on the part of the faculty to administer support to students who may not be able to attend their scheduled sessions.

Virtual tutoring was also found to be a helpful support method to aid students' learning. However, even though students' perceptions of this tutoring were shown to be favorable, students also reported mixed feelings about how sessions were administered. The biggest complaint was that students had difficulty attending the sessions due to their

limited availability, and the times offered were not reasonable for the nontraditional students who worked full time. Students also reported there was not enough time allotted to answer the questions of those in attendance. Some students also found it hard to understand the tutor due to a heavy accent. Nevertheless, while there were issues and concerns with the delivery and timing of the tutoring sessions, overall the data revealed that the students liked having these sessions available and found them helpful (Keen, 2014; Neuhauser & Weber, 2011). Students also felt that the tutoring sessions were a needed support method for learning online, especially in their difficult classes such as programming languages (Kalogiannakis & Touvlatzis, 2015; Neuhauser & Weber, 2011; Tait, 1995).

Additionally, it was found that students primarily contacted their professor first when they needed assistance in their coursework (Brinkworth et al., 2009; Conceição & Lehman, 2016). However, students also indicated that peer interaction, when incorporated into the course activities, was beneficial to support their learning and helped them to feel more connected to the program. Burbuagh, Drape, and Westfall-Rudd (2014) found that students who feel supported by their peers are more likely to persist in their program. Therefore, providing opportunities for students to interact and ask questions of each other can enhance the students' perception of support and deepen their understanding of the course content (Burbuagh et al., 2014; McEvoy et al., 2018). Students found that the opportunity to work with their professor as well as the other enrolled students was helpful to their learning.

Obstacles that Impeded Student's Performance

The top three reported obstacles that impeded the students' performance in their coursework included lack of time, the complexity of the coursework, and social or family

issues. These obstacles are not surprising considering that a majority of the students were nontraditional; these individuals often have to balance many life roles in addition to being a student (Bean, 1980; Delen, 2010; Rovai, 2003). Additional barriers included lack of academic support, lack of familiarity with online learning, demand from their job, issues with their professor(s), feelings of being underprepared for their courses, navigating the online course environment, and lack of motivation. These findings are consistent with literature that identifies barriers to students completing their online program (Brinkworth et al., 2009; Heublein, 2014; Jung et al., 2002; Shaw & Mattern, 2013; Stott, 2016; Xin, 2015). The first year of postsecondary studies can be challenging for students as they begin dealing with curricular demands and differing faculty expectations (Brinkworth et al., 2009). Literature has shown that many students struggle during their first year due to difficulties in balancing school requirements with demands in their personal lives, especially in an online environment that requires them to self-regulate much of their learning (Delen, 2010). It was also found that students may have signed up for too many classes and were not advised on their course load for learning online adequately. These findings could explain the students' stress and their perception of their courses as challenging.

Another explanation of why the students found the coursework to be an obstacle to their performance could be that online learning, by nature, requires a higher degree of self-regulation than traditional classroom instruction (Dobbs et al., 2017; Wang et al., 2013). The students reported spending a large amount of time per week reading and completing their course activities. They found their coursework to be demanding and, in some cases, felt that it was too demanding and often overwhelming—a theme that was repeated throughout the student data. The scant research that has evaluated students' perception of the difficulty of coursework in online environments versus the traditional classroom

suggests that online courses are more challenging than traditional courses (Dobbs et al., 2017; Leonard & Guha, 2001; Wyatt, 2005). However, Dobbs et al. (2017) also postulated that the perception that traditional courses were easier might result from the need for online students to self-regulate their learning; this view may explain the students' complaints. Conversely, Wyatt (2005) found that some students felt that the demands of the coursework appropriately reflected the quality and rigor of the program, while others believed that the online instructors deliberately made the courses more difficult in an effort to ward off criticism that the online courses were easy.

Students felt that improvements could be made to balance the amount of work and the amount of time to learn the content (Karkar-Esperat, 2018). Students often felt they were unable to understand key concepts before needing to move to the next module to stay on pace. This left them feeling inadequate in what they had learned. Offir et al. (2003) found that when students were unfamiliar with (or challenged by) the online environment, many students felt uncertain about their ability and underestimated their acquired knowledge. In the student interviews, each discussed the need for clear and well-defined introductions to the course content so that the students were aware of what to focus on while completing the assignments (Fincher, 2010; van Rhijn, Lero, Bridge, & Fritz, 2016). The students found that when a professor took the time to narrow down the content from the lesson to highlight what to focus on it, this support improved their ability to understand the content and focus on what was needed.

Another possible reason for the students' complaint that there was too much coursework was the faculty's need to maintain a high level of rigor in the online courses. It was found that two of the course faculty, who were new to online teaching, were concerned about maintaining the Cyber Security program's quality, and they wanted to ensure that the online courses aligned with the standards of the residential program, which

was a top-ranked program in the United States. However, the third professor, who was new to the University and had taught online for many years, reviewed the coursework and found that it was too intense; consequently, he adjusted the course to improve the experience for his students. Therefore, it is possible that the faculty may have made the coursework more difficult to ward off any concerns that the online program was easy. It is also possible that the new online faculty inadvertently made the coursework too difficult because they were unfamiliar with the demands of online education; not considering the need for self-regulation when designing the coursework.

Yet, the results of the study may also point to another potential reason why students found it difficult to complete the coursework: it is possible that the students enrolled in too many courses. As discussed earlier in this section, students felt that improvements could be made to course advising and felt that they were not guided sufficiently on the necessary time commitments for their courses or learning online. Therefore, the compounding effects of the extra time required for self-regulating online learning may have led students to complain that there was too much work to be done.

The study identified three possible reasons why students described the complexity of coursework as an obstacle to their persistence. Each of these possibilities have implications for those administering online programs. The student's complaints of coursework may be explained by the nature of online learning and reflect the student's level of comfort with self-regulating their learning. Online education requires self-regulation of learning that many students may not be prepared for (Tinto, 2017); this lack of preparation, impacts their perception of learning online. More support may be needed in the beginning of the semester to help students adjust to the new environment. Additionally, it is possible that the students took too many courses. It is also possible that the course faculty, in their attempt to ward off any criticisms of the program's rigor, placed

too many demands on the students. With the data collected in this study, it is not possible to determine which combinations of these reasons actually impacted the students' perception. These findings warrant further research to examine factors that affect students' perception of the difficulty of coursework in online environments and consider how this perception can be a barrier to their persistence.

Nontraditional vs. Traditional Student Support Preferences

The past decade has shown a steady growth of students enrolling in online programs (Seaman et al., 2018), particularly nontraditional students (Synder et al., 2019). Consistent with these reports, over three-quarters of the enrolled students in the online Cyber Security program were nontraditional (i.e., identified by being age 25 or older) (Bean & Metzner, 1985; NCES, 2015). Research further indicates that nontraditional students require different levels of support to be successful in the completion of their courses and online program (Giancola et al., 2009; Kenner & Weinerman, 2011; Knowles et al., 2011; Thon, 1984). Therefore, this study investigated whether differences existed between the perceptions of traditional-aged and nontraditional-aged students, specifically in the following three areas: the support methods they used, the forms of support they valued most, and the obstacles that impeded their learning.

The results showed minimal variation in the supports primarily used by nontraditional and traditional students. It was found that both groups primarily used electronic messages or attended virtual office hours for support in their courses when it was needed. In comparing data, both traditional and nontraditional students emailed with their professor, messaged their professor via Blackboard, emailed with an academic coach, or attended the virtual office hours held by their professor when they needed. The study results showed that both traditional and nontraditional students ranked timely responses

from their professor or support staff as the most important form of support they received (Holzweiss et al., 2014; Young & Norgard, 2006).

However, beyond these similarities, the traditional and nontraditional students had different perceptions of which kinds of support they found most important. It was found that the nontraditional students' top-rated forms of support included receiving feedback on course activities (Hajibayova, 2017; Kuo & Belland, 2016), live video conferencing sessions (Allen, Withey, Lawton, & Aquino, 2016), and easy access to communicate with their professor and academic coach (Wyatt, 2011). Conversely, the traditional students identified the following as their most important forms of support: feeling that they matter to their professors, receiving an alert when they fall behind, and easy access to communication with their professor.

These findings indicate that in terms of support, both traditional and nontraditional students value timely interactions and easy methods of communicating with their course professor (Hajibayova, 2017; Hattie & Timperley, 2007; Kuo & Belland, 2016). It was found that nontraditional students valued receiving feedback on course activities while none of the traditional students ranked this as important. The traditional students needed to feel their professor cared about their learning and preferred to receive alerts when they were falling behind. These results suggest that traditional-aged students emphasized the connection they had with their professor more than older students did. This difference between age groups warrants further research, particularly due to the small sample size.

In review of the obstacles that impeded the students' learning by age group, the findings revealed that the three biggest obstacles for the nontraditional students included insufficient time to complete their coursework, the complexity of the course content, and social/family issues (Muench, 1987; Wyatt, 2011). Additional obstacles reported by the nontraditional students included feeling underprepared for their courses (Foster et al., 2011;

Xuereb, 2014) and lack of academic support. In looking at the traditional student responses, the top obstacles reported were social/family issues, issues with their professor(s), lack of academic support, and lack of time (Brinkworth et al., 2009; Howell et al., 2004; Mah, 2016). Both groups identified social/family issues, lack of time, and lack of academic support as obstacles to their academic performance. Social and family issues are common for students in online programs regardless of age (Grabowski, Rush, Ragen, Fayard, & Watkins-Lewis, 2016; Woods & Frogge, 2017). The results also revealed that the traditional students indicated that lack of motivation hindered their academic performance where none of the older students felt this was an obstacle (Karkar-Esperat, 2018). This finding coincides with research that has found that nontraditional students tend to have higher motivation levels compared to traditional students (Arjomandi et al., 2018; Kasworm, 2008; Quiggins et al., 2016; Woods & Frogge, 2017). Additionally, a much higher percentage of traditional students reported that issues with their professor impeded their performance. The nontraditional students reported obstacles of feeling underprepared for their courses and navigating the online environment, but none of the traditional students reported these as hindrances. Moreover, a larger percentage of the nontraditional students reported that the complexity of the coursework was an obstacle to their performance. These findings align with literature that suggests that nontraditional students often struggle with fears of failure and self-doubt, and these fears impact their performance in academic programs (Muench, 1987; Wyatt, 2011; Xuereb, 2014).

With the influx of nontraditional students, it is critical for those developing online programs to understand the specific support needs and preferences of both traditional and nontraditional students. These findings have implications for the development of online programs and provide a basis for additional research that is needed on this topic.

Chapter 6: Conclusions and Implications

This final chapter of the research presents the study's conclusions, limitations, recommendations, and suggestions for future research.

CONCLUSIONS

This study explored the implementation of the Community of Care, a learner support system, in the online Cyber Security program. The study explored the course faculty and academic advisor's experiences of providing support to students, as well as students' perceptions of the support provided. The results describe the perceptions and experiences of the academic advisor, the course faculty, and the enrolled students, which led to an understanding of their shared experiences as part of the learner support system. The following section presents the overall conclusions of the study.

Learner Support System

Learner support systems require oversight and management to ensure that they are in fact a working system of support. The OIE envisioned that the five roles of the Community of Care would encircle students with support in an organized method to aid them when needed and help them persist in their academic journey. When it was determined that the OIE would be closing, the scope of the learner support system fell to the academic advisor and the course faculty. It was found that the originally envisioned support system as a system ultimately broke down as support became localized to these two roles. When the staff at the OIE departed, there was a loss of management of the Community of Care as a working system which resulted in gaps in the original design that intended to "catch" students before they fell out of the program. The course faculty and

advisor lacked clear direction and guidance on working cooperatively. Each was given direction for their role in administering support to students but were unclear who should take ownership of at-risk students once these individuals were identified and were unresponsive. Therefore, defining the roles and support methods before implementing a learner support system is an important component of the system's success.

The staff should also be trained on their roles well in advance to ensure they are confident in administering support. The academic advisor found it challenging to implement the "white-glove approach" as defined by the OIE and struggled to find a balance between too much contact and not enough. The closure of the OIE left the academic advisor without the support of those who had envisioned the program and unclear on certain aspects of her role. Additional training and guidance would have helped her to increase her confidence. Due to the lack of clear direction among faculty and the advisor, it is possible that some students may have fallen out of the program. While not all students can be retained, clear direction on contact attempts and hand-offs between each support provider, especially in the absence of early alert technology, will ensure that program faculty and staff have done all they can to support students' persistence.

However, despite the lack of a system, the results showed that learner support can help students feel connected and engaged in their online learning experience. The majority of students reported that the support they received was helpful and that when they received alerts about their academic standing, they felt more motivated to continue in their course. The students also praised the assistance provided by their academic advisor and felt that the faculty were available to them when help was needed. Findings also indicated that enrollment coaching may be a worthwhile investment to aid in student recruitment and increase program admissions. Therefore, it is concluded that learner support systems that are planned and customized for enrolled students are beneficial for online programs.

However, more research is needed to evaluate the overall impact of these systems on student persistence or retention; based on the data collected in the current study, a claim cannot be made about the effectiveness of learner support systems on students' persistence.

Advising Support

The academic advisor, as a one-stop resource for providing nonacademic support, increases students' feelings of connectedness and satisfaction in online learning. The students valued the care with which the advisor supported their needs. They believed that she wanted them to succeed and liked being able to speak to someone other than the course instructor about their academic standings and enrollment. This study found that a majority of the students felt more comfortable in seeking academic assistance as a result of their interactions with the advisor and felt that the support they received helped them to continue in their courses. As a one-stop resource, the advisor helped alleviate many of the students' frustrations, so they could focus on their coursework. The "white glove approach" by which the advisor aimed to answer students' questions without transferring them to another department also had a positive impact on the students' satisfaction. Students valued the advisor and the care she provided. These findings also suggest that emotional support is an important consideration in the development of learner support systems and in online education generally. Appealing to student's emotional needs through nonacademic support methods is a powerful motivator for student persistence and can help students successfully transition into their learning experience.

Providing online students with clear guidance on their courses and course load is critical in online environments; especially for nontraditional students. Students need detailed and specific information about the program and courses so they may manage their learning journey and make decisions that are feasible for their lives. The advisor informed

students about the courses that were available in the Fall semester but may not have guided them sufficiently, considering the nontraditional student population. Students need guidance on the time commitment for each course and guidance on the level of self-regulated learning that is required in the online environments. Being invasive of the students' personal lives is necessary for academic advising to aid them in making decisions and help them to uncover potential obstacles to their learning that may lead to poor performance. As found by Molina and Abelman (2000) some intrusion is better than no intrusion. In this case, it is possible that the advisors' lack of questioning and awareness of the students' personal obstacles while advising for the Fall semester led to students not being advised sufficiently, thus, enrolling too many courses.

Faculty

This study concludes that regular support interactions and timely responses improved students' satisfaction in the online program and reduced their perception of being isolated. The support strategies administered in the Fall semester included regular interactions, timely responses to questions, feedback on course assignments, virtual office hours, and virtual tutoring. The students were satisfied with the support they received and did not feel that any additional support strategies were needed. Students indicated they only reached out for support or participated in support events when they needed assistance.

Given the additional amount of time required for teaching online, the faculty's workload should be considered when asking faculty to take on teaching an online course. It was found that the course faculty were faced with an extensive workload. The faculty taught their online course in addition to teaching their full load of residential courses (approximately five to six courses total) which limited the time they had available to fully support the online students. Special attention is needed when calculating faculty workload,

as research suggests that online teaching can take twice as much time as traditional classroom teaching. This finding has implications for the administration of online programs.

This study also found that the course professors' experience with teaching online affects their perceptions of the rigor and merit of online education, as well as their perceptions of enrolled students' mindsets. The faculty who were new to teaching online actively worked to maintain rigor in their courses and were less likely to adjust their courses when students complained of too much work for fear of reducing the quality of the course and the value of the degree program as a whole. These two faculty members strongly disagreed with the students who complained their courses were too much work; they felt that these complaints indicated that students wanted an easy education and did not want to put in the required amount of effort. In contrast to these participants, the professor who had taught online for many years reported a different perspective. When the students complained that the work was too much and upon reexamination of the course lessons, the professor decided the work was too intense, which led him to restructure the course activities. This finding suggests that faculty may need additional preparation as they make the transition from teaching in the traditional classroom to teaching online.

Students

Overall, the students found that the support provided was helpful to support their learning in the Fall semester. They ranked timely responses to their requests for assistance as the most important form of support, and they preferred to communicate via email with their faculty and advisor. The students also ranked receiving feedback on course activities (e.g., assignments/quiz/tests), having access to an academic coach, having easy access to communicate with their professor, and live events with their professor as highly valued

forms of support. In review of the academic support strategies used by students, it was found that most students used electronic messaging (e.g., email or messaging through Blackboard), virtual office hours that included a live presentation of important topics, and virtual tutoring sessions to support their learning.

The top three reported obstacles that impeded the student's performance in their coursework included lack of time, the complexity of the coursework, and social/family issues. Students wanted more guidance on the time commitment for each course, as they were unprepared for self-regulating their learning and the time required for completing their course activities in an online environment. A repeated finding in this study was that students found the coursework demanding and felt that they did not have enough time to complete it. The study found three possible reasons why students may have reported that there was too much coursework. First, the extra effort needed for reading and learning content on their own that is necessitated by online education may have impacted students' view of the coursework difficulty. Second, the students may not have been sufficiently advised on their course load and the time commitment for online learning before registering for their classes; as a result, they may have taken too many classes. The advisor intended for students to use the course drop period for evaluating their courses and deciding whether to withdraw; however, this option was either unclear or misunderstood, and the students rarely dropped any courses. Therefore, the compounding demands of taking multiple courses coupled with lack of time resulted in feeling overwhelmed by too much work. Lastly, it is possible that the faculty's concern for maintaining high levels of rigor in their online courses may have led them to make the coursework too demanding. It is also possible that the new online faculty inadvertently made the coursework too difficult because they were unfamiliar with the demands of online education; not considering the need for self-regulation when designing the coursework. Additional research would be

necessary to determine which of these events, or combinations thereof, influenced the students' perceptions.

In comparing the support preferences of traditional and nontraditional students, it was found there were minimal variations in the supports used by the nontraditional and traditional students. However, participants in these two age groups reported different perceptions of the most important forms of support, as well as the main obstacles that impeded their performance. It was found that both groups primarily used electronic messages or attended virtual office hours for support in their courses when they needed. It was also found that both traditional and nontraditional students valued timely interactions and easy ways of communicating with their course professor. Nontraditional students valued receiving feedback on course activities while the traditional students did not rank this as important. Traditional students, unlike their nontraditional counterparts, also wanted to feel their professor cared about their learning and preferred to receive alerts when they were falling behind. These results suggest that traditional-aged students placed more emphasis on connecting with their professors than older students did. This possibility merits further research.

Additionally, both traditional and nontraditional students identified social/family issues, lack of time, and lack of academic support as significant obstacles. The traditional students also reported that lack of motivation hindered their academic performance, whereas nontraditional students did not find this to be a barrier. This finding corresponds with prior research that showed that nontraditional students tend to have higher motivation levels to complete their coursework. Additionally, the nontraditional students reported that feeling underprepared for their courses and struggling to navigate the online environment were two major obstacles to their performance. These findings are consistent with literature that has found that nontraditional students often struggle with fears of failure and

self-doubt. One implication of these findings for the development of online courses and programs is that as nontraditional student enrollment increases, it is important to understand the distinct learning preferences of both groups of students. Each has differing priorities and motivations; therefore, it is imperative to create a learning environment that accommodates the learning and support preferences for both groups. The findings from this study provide a basis for additional research.

IMPLICATIONS

The results of this study have important implications for program administrators and those developing learner support systems and online programs on their campus. The results also have implications for providing support to students.

This study found that learner support systems require oversight to ensure that they are in fact a working system of support. It was found in this study that the originally envisioned system ultimately broke down as support became localized to the academic advisor and the course faculty. Therefore, when developing a support system, it is vital to identify a governing body or individual to manage the learner support system. It is also essential to engage in careful planning of the support roles. This planning should include specifying the responsibilities of each role and providing guidance on how these roles should work cooperatively together. Additionally, adequate training should be provided so that each faculty, advising, or other staff members feels confident and fully understands how they are expected to administer support within the learner support system.

Furthermore, the learning support system, just as postulated by Tait (2000), should be developed with the students as the focal point of the design. This includes having an in-depth understanding of the student population, particularly differences between the support needs of both traditional and nontraditional students, to create a learning space that

meets the needs and preferences of all enrolled students and ensures that all feel supported. The academic advisor role is an essential role for providing nonacademic support. The students valued the emotional support that their advisor provided and felt that she was watching out for them. Thus, providing emotional support and care to students through regular communications and proactive contact attempts may help students feel more connected to the learning environment and thereby increase their persistence.

The study findings also have implications for online student advising. The students felt they were not advised adequately on the amount of time that online education would require or course specifics. To meet the specific demands of online education, students may require special guidance on the type of course, the required time commitments for learning online, and strategies for self-regulating their learning. In addition, nontraditional students face external obstacles such as full-time jobs and families that require them to plan their use of time even more carefully. Therefore, it is necessary for program administrators to consider the additional care and support that will help set the stage for these students' academic journeys.

Furthermore, the faculty's workload should be carefully evaluated when making a request of faculty to teach an online course. The faculty carried a heavy workload during the Fall semester, which suggests that the program administrators did not consider the disproportionate amount of time needed for teaching online. The faculty's workload reduced the amount of time they could spend supporting the online students, which could directly impact the students' satisfaction and persistence. Due to lack of time, the faculty and advisor were limited in their ability to identify at-risk students, which increased the risk of students falling out of the program before support was provided.

For those designing online courses, the amount of time that is necessary for students to self-regulate their learning should be weighed when developing course activities,

especially when converting a traditional course to an online course. In these instances, the content should be approached with an understanding of what the student will be required to do and how much time it will take. Course developers should also consider the amount of time required for reviewing and comprehending course content (e.g., readings and videos) to balance the amount of time needed to participate in the activities. It is also crucial to provide detailed instructions and clearly labeled due dates for each action.

RECOMMENDATIONS FOR FUTURE RESEARCH

Additional research is recommended to further the findings from this study. Based on the study results, following recommendations are proposed.

1. Additional research should be conducted on learner support systems and their impact on student persistence and retention. The findings of this study suggest that these systems are beneficial. However, additional research is needed to measure their impact.
2. Further research should be conducted to evaluate the influence of the academic advisor role, in which emotional support is provided, on the students' motivation to persist in their coursework. Research should also evaluate the effectiveness of the advisor's contact with students about academic performance compared to that of the faculty.
3. Continued research is needed to investigate differences in learning and support preferences between traditional and nontraditional students. Much research has been conducted to compare these two groups' levels of academic performance, but further research is needed to understand how to support both age groups in an online environment and thereby increase their persistence. It is also recommended in conducting this research to expand the age-based definition of a nontraditional

student as used in this study to include the additional identifying characteristics of a nontraditional student. It is possible that a student is nontraditional and be younger than age 25 (e.g., have full-time jobs, attend classes part-time, single-family caregivers, or are former military personnel).

4. Further research is needed to understand the factors that contribute to students' perception of difficulty in online coursework. The findings of this study presented three plausible reasons why students found the coursework to be too demanding: either the students took too many classes, the faculty's desire to maintain rigor impacted the difficulty level of the coursework, or the students were unprepared for online learning that required self-regulation. Further research is needed to understand the reasons students why perceive coursework to be challenging and explore the implications of this perception for the administration of online courses.
5. Further research is needed to understand decisions that go into providing virtual tutoring, including how it is administered and what challenges are faced by those delivering the sessions. These findings would help those who are looking to implement this support strategy in online programs.
6. Because each individual faculty member may have a differing approach to providing support, further research is needed to explore whether some specific support strategies are more helpful than others. Further research could also explore the student's perception of the type of support provided by the type of course (e.g., skill-based, foundational). It was a common theme that faculty perceived that students have differing preferences for support based on the type of course. This distinction was not explored in this study and warrants further research. Understanding students' preferences in relation to course type could inform the faculty's approach to providing support in online environments.

STUDY LIMITATIONS

Limitations were identified in relation to this research study. First, this study only analyzed data from the program's initial semester. Therefore, claims about student retention or the effectiveness of support interventions cannot be made. The goal of this research was to describe the experiences of the study participants and to provide a baseline for future research. Also, each course within the Cyber Security program features unique learning outcomes and teaching and learning experiences. Therefore, further research will be needed to determine the generalizability of the claims made in this study to other courses and online programs. Further research will also be needed to determine the effectiveness of the support interventions provided by the faculty and any impact these may have on the students' progress or performance. Another limitation is that the course professor and academic coaches who provided virtual tutoring declined to participate in the study. By including the perspectives of these support roles, it would have informed the decisions that were made to support students and the challenges that were faced in providing the virtual tutoring sessions.

The small number of students that responded to the survey is also a limitation. The student survey only evaluated the students' perception of the overall support they received in the Fall courses and did not allow for the responses to be separated by the course. Therefore, the students' perceptions of a particular faculty's support strategy and philosophy cannot be determined. Also, in the reporting of the student's obstacles to their performance, an option for "employment responsibilities" was not listed as an option. Given that many of the students worked full-time this may have impacted the findings.

RECOMMENDATIONS FOR PRACTICE

Based on this study's findings, the following list provides recommendations for developing and implementing learner support system and providing support to students in an online environment.

1. A formalized plan is needed for the administration of a learner support system. In this study, people in each role (advising and faculty) were given guidelines on how to support students individually, but there was no plan for how faculty and advisors should work together cooperatively. This left open questions on who should follow up with at-risk students, how often, and who was responsible for following through if students were unresponsive. Therefore, having clearly defined roles and procedures for cooperation between these roles (i.e., how to handle students who are at risk of falling behind) are necessary for the support system to be successful.
2. Learner support systems should be developed with the students' needs as the focal point of the design. The findings of this study can provide a baseline for the development of support roles and supports that may be administered.
3. Students should receive a timely response to their requests for assistance and timely feedback on their course assignments. Additionally, VOH sessions are an effective support strategy for interacting with students and clarifying course content. Recordings of these sessions should be made and posted online to support students who are unable to attend. Virtual tutoring should be considered for more complex courses. However, these sessions should be held at times that are convenient for the enrolled students, including those who work full-time.
4. Students need clear directions with due dates and expectations for each assignment. In an online environment, the student is reading and interpreting challenging material without the assistance of others. In this study, the students often found

that the weekly reading assignments and activities covered a large amount of material, and they felt lost when determining what should be learned from the content. Faculty should also consider recording a video introduction to each course lesson that highlights important concepts on which the students should focus their attention.

5. Considerations of workload should be made when assigning faculty to teach online courses. This study found that the faculty were asked to teach their online course in addition to teaching their full load of residential program courses (i.e., five to six on-campus courses) and in addition to their other duties (e.g., attend meetings, committees, and research). This large workload impacted their ability to support students. While the students indicated that they felt supported and appreciated the faculty's timely response to their questions, the faculty admitted that with more time available, they could have done more to be proactive in supporting students.
6. The use of an early alert system to programmatically identify at-risk students would greatly improve faculty and staff members' ability to provide support and alleviate these individuals' workloads. The data provided through an early alert system allows educators to administer interventions and intervene when students begin to exhibit symptoms of trouble. A benefit of an early alert system is that it would provide immediate access to view the students' status and assist those identified as at-risk. This type of technology aims to support students more efficiently, thereby aiding in students' persistence.

Appendix A: Interview Questions

Faculty

1. Describe the [name of course] course.
    a. Describe the content and the course activities.
    b. How long have you taught the course?
2. Describe your experience teaching online before the Fall semester.
3. What was your role in developing the online course for the Cyber Security program?
4. Describe your philosophy in supporting students in an online environment.
5. Describe the strategies you used to provide support to your online students this semester.
6. How often do students contact you for support? What method do they use most often to contact you?
7. How do you identify students that you consider at risk for falling behind?
8. How did you assist those you identified as at risk?
9. What challenges have you faced in supporting students this semester?
10. Describe your communication with the Academic Advisor.

Academic Advisor

1. Describe your role this semester?
2. Describe your experience in academic advising.
3. In your role, what do you consider in scope vs. out of scope?
4. Describe how you advised students for the Fall semester.
5. Describe your philosophy in supporting students in the online environment.
6. Describe the strategies you used to support to students this semester.
7. How often do students contact you for support? What method do they use most often to contact you?
8. How do you identify students that you consider at risk for falling behind?
9. How did you assist those you identified as at risk?
10. What challenges have you faced in supporting students this semester?
11. Describe your communication with the course faculty.

Assessment Specialist

1. Describe your responsibilities in the Fall semester.
2. How did you communicate with faculty throughout the semester?
3. What has been your communication with students?
4. Describe the feedback you provide to students on assignments.
5. From your perspective, what is the purpose of your role?

College of Business Cyber Security Program Administrators

1. What is your role in the Cyber Security program development?
2. How did the collaboration between with the Office of Innovative Education (OIE) and Cyber Security program originate?
3. Describe the Community of Care – what it is, the roles, and how each support students.
4. What is the Cyber Security programs' vision for the Community of Care?
5. How do evaluate if the program was a success?

Office of Innovative Education (OIE) Staff

1. What is your role in the Cyber Security program development?
2. How did the collaboration between with the College of Business originate?
3. Describe the Community of Care. What it is, the roles, and how each support students.
4. Describe how the Community of Care is being used in the online Cyber Security program.
5. What is the OIE's vision for the Community of Care?

Students

1. Why did you choose to enroll in the online cyber security program?
2. Describe your experience this past Fall?
3. Did you face any obstacles that impeded your progress?
4. What support did you find to be the most helpful to support your learning?
5. Describe the support you received from faculty.

a. Describe your experience attending virtual office hours.

b. Describe your experience attending tutoring session with an academic coach.

6. Describe your interactions with your academic advisor.

7. Overall, how would you describe your feelings about the support you have received from University faculty and staff?

Appendix B: Student Perception Survey Questions

Survey Questions	Response options
What courses are you enrolled for the Fall 2017 semester?	[Fall courses]
What is your prior online course experience?	• I have completed an online course at a university or college previously. • This is my first time enrolling in an online course at a university or college.
How much time do you typically spend interacting with your coursework per week (e.g., completing activities, reading, etc.)?	• 1-5 hours • 6-10 hours • 11-15 hours • 16 or more hours
Overall, in your coursework this semester, how would you describe your feelings about the support you have received from University faculty and staff?	• Extremely helpful • Moderately helpful • Limited helpfulness • Not helpful • Not applicable
Which of the following obstacles, if any, impeded your academic performance this semester (Select all that apply).	• Social/family issues • Lack of motivation • Lack of time • Lack of familiarity with the learning in an online environment • Navigating the online course environment • Complexity of my coursework • Financial issues • Felt underprepared for my courses • Issues with my professor(s) • Lack of academic support • Other (Please specify) • I did not have any obstacles.

Survey Questions	Response options
In thinking about your experience this Fall semester, what do you find to be the most important in receiving support for your academic coursework? Rank the following in the order that is most important to you.	• Timely response from professor or support staff • Easy access to communicate with my professor • Access to an academic coach or teaching assistant in my course • To feel that I matter to my professor • Receiving feedback on course activities (e.g., assignments/quiz/tests) • Receiving an alert when I'm falling behind or been inactive (e.g., email) • Live video-conferencing sessions with my professor • Communications with my academic advisor
Who do you typically contact first when you have a question or issue about your coursework?	• Peer (Another student) • Professor • Academic coach or teaching assistant • Academic advisor • Other
What methods of support have you used or received this semester for help on your academic coursework? Select all that apply.	• Attend established virtual office hours with my professor • Attend tutoring session with academic coach or teaching assistant • Email with my professor (outside of Blackboard) • Messaging within Blackboard with my professor • Phone conversation with my professor • Chatted online with my professor (outside of office hours) • Email with an academic coach or teaching assistant • Phone conversation with an academic coach or teaching assistant • Email with my academic advisor about my coursework • Phone conversation with my academic advisor about my coursework • Other

Survey Questions	Response options
Please rate the following methods of providing support in terms of their helpfulness: • Virtual office hours with pre-scheduled instructional topics covered by the faculty • Virtual office hours to chat online with the faculty member and ask questions as needed (no scheduled instruction provided) • Online chat sessions with faculty • Live video-conferencing with faculty (e.g., being able to view and chat with my professor live) • Emails from my professor when I am falling behind • Support sessions from academic coaches or Teaching Assistants	• Extremely helpful • Moderately helpful • Limited helpfulness • Not helpful • Did not utilize or did not receive • Not applicable
What methods have you found to be the <u>most helpful</u> to support your learning?	Open ended
What methods have you found to be the <u>least helpful</u> to support your learning? Please specify.	Open ended
Please review each statement and respond with the level that you agree or disagree. • At the beginning of the semester, I expected my courses to be easy. • My coursework is challenging. • Entering the semester, I expected to be regularly contacted with academic support. • The alerts about my academic standing motivate me to continue when I am falling behind in my coursework. • I am regularly contacted by people who are concerned with my academic performance. • Overall, the support that I have received during this semester has helped me to persist and keep going in my coursework. • Overall, I have high confidence that I will complete my program. • Overall, I feel supported in my program.	• Strongly agree • Agree • Neither agree nor disagree • Disagree • Strongly disagree • Not applicable

Survey Questions	Response options
What is your preferred method of communication with your faculty?	• Email • Phone call • Text message • Chat online • Video call (e.g., Collaborate tool, Skype, etc.) • Other
In thinking about your experience with your course professors this Fall, please review each statement and respond with the level that you agree or disagree. • I feel better prepared to deal with my academic work because of the contact with my professor. • My interactions with my professor have helped me feel more comfortable to seek academic assistance. • I believe that the support provided to me this semester has helped me to succeed in my coursework. • I was grateful that my faculty contacted me about my academic standing. • My interactions with my professors help me to feel more connected with the program.	• Strongly agree • Agree • Neither agree nor disagree • Disagree • Strongly disagree • Not applicable
What is your preferred method of communication with your academic advisor?	• Email • Phone call • Text message • Chat online • Video call (e.g., Collaborate tool, Skype, etc.) • Other

Survey Questions	Response options
The following questions ask you about the support you have received from your academic advisor. Please review each statement and respond with the level that you agree or disagree. • My interactions with my academic advisor help me feel more comfortable to seek academic assistance during my courses this semester. • The support that I have received this semester from my academic advisor has helped me to persist and keep going in my courses. • I was glad to speak to someone other than my professor about my situation. • My academic advisor makes me feel that someone is watching out for me. • My interactions with my academic advisor help me to feel more connected with the program.	• Strongly agree • Agree • Neither agree nor disagree • Disagree • Strongly disagree • Not applicable
Gender	• Male • Female
School enrollment status for Fall 2017	• Full time • Part time
Ethnicity	• Native American or Native Alaskan • Asian or Pacific Islander • Black, Non-Hispanic • Hispanic • White, Non-Hispanic • Other • Prefer not to respond
Age range	• Under 20 • 20-24 • 25-29 • 30-44 • 45-64 • 65 or older

Survey Questions	Response options
Employment status	• Full time • Part time • Not employed
Standing as of the Fall 2017 semester	• First time in college • UTSA Continuing undergraduate student • Transfer from another college or university • Post-baccalaureate (Previously obtained a college degree) • Other

Appendix C: Codebook

Code	Definition
About Cyber Security program	The participant discusses the Cyber Security Program attributes (e.g., top program in the U.S., ranking, components).
Academic Advisor	Discusses the Academic Advisor role (e.g., vision, background, requirements for role, responsibilities, how implemented).
Academic Advisor questions	Discusses the types of questions and requests that are asked of the academic advisor by students and faculty.
Academic Coaches	Discusses the academic coach role (e.g., vision, background, requirements for role, responsibilities, how implemented).
Announcements	Discusses course announcements to students to keep them up to date and engaged.
Assessment Specialist	Discusses the assessment specialist role (e.g., vision, background, requirements for role, responsibilities, how implemented).
At-Risk Students	Discusses the identification of at-risk students (e.g., students falling behind, unresponsive)
Challenges	Discusses challenges faced in the Fall semester.
Changes to support students	Discusses changes that were made to improve support to students (e.g., provide more feedback, change submission times).
Closing of OIE	Discusses the impact of the OIE closing to the online Cyber Security program or the Community of Care
Community of Care	References what is the Community of Care.
Complaints of Course	References the difficulty of the course content (e.g. difficulty in completing assignments, too much work, unclear directions).
Concern for teaching online	Faculty discusses concerns they have for teaching online.

Code	Definition
Coordination between Advising and Faculty	Discusses the coordination between the course faculty and academic advising.
Coordination between the OIE and University	References communication and coordination between the CoB and the OIE.
Course Load	Student discusses their course load whether it was the right amount or too much.
Course success	Discusses their perception of the course's success.
Email	Discusses email as the preferred communication method.
Email Alerts	Discusses sending emails to students to alert about academic standing and to provide support or intervene when they are falling behind (e.g., not completing assignments, at-risk, poor grades).
Enrollment Coaches	Discusses the enrollment coaching role (e.g., vision, background, requirements for role, responsibilities, how implemented).
Expectations	Student discusses the type of support they expected in the online program
Faculty	Discusses the course faculty role (e.g., vision, background, requirements for role, responsibilities, how implemented).
Faculty Training	Discusses the training that was received or given to faculty in preparation for teaching online.
Feedback	Discusses feedback on course assignments.
First line of support	Discusses who is first line of support when help is needed.
Inside Cyber	Discusses the Inside Cyber course (e.g., what is taught in the course and key features).
Intro to Programming Concepts	Discusses the Introduction to Programming Concepts course (e.g., what is taught in the course and key features).

Code	Definition
Issues with the Online Program	Discusses issues that were faced in the online program (e.g., natural disaster, technical difficulties) – excludes difficulty of the course.
Journey Coaching	Discusses the journey coaching role (e.g., vision, background, influence on current procedures).
New Experience	Student discusses learning in a new environment (e.g., new to online or new to Blackboard).
Obstacles	Student discusses obstacles they that had hindered their performance (e.g., social/family, lack of time).
Peer Support	Discusses peer support activities or interactions with peers.
Principles of IS for Management	Discusses the Principles of IS for Management course (e.g., what is taught in the course and key features).
Principles of Marketing	Discusses the Principles of Marketing course (e.g., what is taught in the course and key features).
Project Origination	Discusses how the online Cyber Security program originated
Recommendations	Discusses recommendations for the future of the Cyber Security program.
Student Mindset	Discusses their perception of the student's mindset for an online environment.
Students	Discusses the students that have enrolled in the cyber program this fall (e.g., student characteristics)
Support from Advising	Discusses the support received from the academic advising.
Support from Faculty	Discusses the support received from the course faculty.
Support from OIE	Discusses support received from the OIE (e.g., faculty or advising)
Support Philosophy	Discusses their philosophy for supporting students in an online environment.

Code	Definition
Telephone	Faculty discusses calling or talking with the student on the phone to provide support.
Timely	Discusses the timely response to student's request for assistance (e.g., email or messages in Blackboard).
Virtual Tutoring	Student discusses their experience in the virtual tutoring sessions with the academic coach.
VOH (chat only)	Discusses providing virtual office hours to students in which a chat session was used.
VOH (live instruction)	Discusses providing pre-scheduled instruction to students during virtual office hours.
Webcam	Discusses the use of webcam and video streaming during virtual office hours.
Workload	Faculty discusses their workload for the Fall semester.

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