Online Master's Students' Perceptions of Institutional Supports and Resources: Initial Survey Results

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Abstract

This article presents the quantitative findings of an exploratory mixed methods study that investigated first- and second-year online graduate master's students': 1) perceptions of the importance of, and satisfaction with, administrative, academic, technical, and online community supports; 2) personal factors and grit level; and 3) differences, if any, that existed among students, in these areas. Findings showed that a large majority of students rated course-level supports (e.g., instructor support, embedded help, library) as important, in contrast to supports that might be needed on rare occasions (e.g., career services, bookstore) or by fewer students (e.g., veteran and international student services, writing center). Data stratification revealed differences between white and non-white students for career and counseling services, which white students rated "unimportant" and non-white students rated "very important." Differences in students' perceptions of importance and satisfaction with some services highlighted instructor and technical support as areas of focus for potential improvements. The study raises several questions important to online graduate education, such as: 1) Which supports and resources should be offered by institutions of higher education to promote success in online learning for online master's graduate students? and 2) Are there strategies that need to be developed to better address the individual needs of a diverse student body, including nontraditional and underrepresented minority students?

Introduction

Graduate online students have unique needs that may not be fully met by the traditional, on-campus student support services offered at many universities (Haydarov, Moxley, & Anderson, 2012-2013). At one large, private university in the United States, online students have access to 24-7 technical support and other support services such as the Writing Center and Disability Support Services. However, it is unclear whether

these services are fully meeting the needs of the institution's rapidly expanding population of online graduate students. Many students entering online graduate programs have been out of school for several years and may require academic supports and assistance in understanding graduate school expectations in order to be successful. Online graduate students are often managing competing demands of family and work at the same time as attending school. In addition to these challenges faced by many nontraditional students, underrepresented (URM) minorities and international students have unique needs that are often overlooked. In an effort to better address these needs, the university's Office of Diversity and Inclusion funded a study of online graduate master's students' experiences with, and perceived importance of, administrative, academic, technical, and online community supports. This paper presents the quantitative results of the first phase of the study.

Literature Review

The recent report, *Grade change: Tracking online education in the United States* (Allen & Seaman, 2014), underscores the importance of establishing effective infrastructures to support the growing population of online learners. Despite a downward trend in the annual growth rate of online enrollments over the past few years, the percentage of higher education students enrolled in online courses continues to grow, with 33.5% of students taking at least one online course in 2012. Online learning has become a core educational delivery method at most institutions of higher education (IHEs); in fact, 66% of chief academic leaders reported that online learning is critical to their long-term strategy. However, many of these leaders, according to Allen and Seaman (2014), also noted that retaining students is a greater problem for online courses than it is for face-to-face courses (F2F). Persistence has long been a concern in IHEs, and the reported lower persistence rate among online learners magnifies these concerns (Hart, 2012; Patterson & McFadden, 2009; Shea & Bidjerano, 2014; Xu & Jaggars, 2011). However, as Rovai (2003) contends,

> There is no simple formula that ensures student persistence. Adult persistence in an online program is a complicated response to multiple issues. It is not credible to attribute student attrition to any single student, course, or school characteristic. There are numerous internal and external factors that come into play, as well as interactions between factors. (p. 12)

Yet, as online programs become even more established within IHEs, it will become increasingly important to study the internal and external factors that promote learner persistence, particularly those for which institutions have the most control: academic and institutional support services.

Need to Study the Support Needs of Graduate Online Learners

According to the National Center for Education Statistics (NCES, 2014), graduate online program enrollments (22%) were double that of undergraduate online enrollments (11%) in 2012. Additionally, graduate programs in education and the health sciences also experienced the greatest first-time enrollments of women (Allum, 2014). As programs and enrollments in graduate online education grow and outpace that of undergraduate education, it will be imperative to investigate the unique characteristics, supports, and needs of graduate online learners. In doing so, as Haydarov, Moxley, and Anderson (2012-2013) emphasized, it is crucial to comprehend that "[t]he learner characteristics of online graduate students are fundamentally different from traditional undergraduate students" (p. 430). Online students generally tend to be older than F2F students and typically work at least part-time (Layne, Boston, & Ice, 2013; Park, Bowman, Care, Edwards & Perry, 2009). In addition, graduate online students who enroll in graduate programs years after earning a bachelor's degree may have other unique needs, such as being underprepared for graduate study because they have been out of school for several years (Pintz & Posey, 2013).

Graduate online learners often display some of the characteristics of "nontraditional students," such as items 2, 3, 4, and 5 below. Choy (2002) defined nontraditional students as those who have one or more of the following seven characteristics:

1. Delays enrollment (does not enter postsecondary education in the same calendar year that he or she completed high school);
2. Attends part time for at least part of the academic year;
3. Works full time (35 hours or more per week) while enrolled;
4. Is considered financially independent for purposes of determining eligibility for financial aid;
5. Has dependents other than a spouse (usually children, but sometimes others);
6. Is a single parent (either not married or married but separated and has dependents); or
7. Does not have a high school diploma (completed high school with a GED or other high school completion certificate or did not finish high school). (pp. 2-3)

Graduate online students, including URM students, who have not been in school for several years, have never participated in online graduate work, and/or are international students, commonly experience challenges transitioning to being students again, and have unique needs that are often overlooked. For instance, Hyun, Quinn, Madon, and Lustig (2006) found that nearly half of the graduate students who participated in their study expressed knowing another student who had experienced emotional or financial stress in the previous year. Graduate online students are likely to have a myriad of unique support needs, yet student support efforts at many IHEs typically focus primarily on the needs of traditional, on-campus undergraduates (Pontius & Harper, 2006)—and not online graduate students.

Online Student Persistence

Rovai (2003) developed the Composite Persistence Model to explain factors that affect student persistence in online education. His model synthesized and built upon Bean and Metzner's (1985) and Tinto's (1975, 1987, 1993) persistence models, which focused on on-campus, and not online students. Rovai's model, as illustrated in Figure 1, consists of student characteristics and skills that exist before students apply for admission, as well as numerous internal and external factors after admission that affect student persistence in online programs. Comprehension and investigation of these factors can help administrators and faculty of online programs better understand and institute supports to help increase online students' persistence. For instance, although student life crises might occur at any point in time while enrolled in a program—or not at all—universities can provide student support services such as student counseling services if and/or when the need arises. Similarly, internal factors such as academic and social integration also play a role in student persistence. Faculty members can develop online community within courses and administrators can survey students to find out how socially integrated students might report feeling. An important aspect of the model is that it is multifaceted and can be used by administrators to identify students in need, as well as "topics for student intervention" (Rovai, p. 13). Rovai also explained that "online courses typically require a high level of discipline and self-direction, and enough time each week to complete all assignments" (p. 14). The constructs of "goal commitment," "study habits" and "commitment" in the Rovai model are consistent with the work of Duckworth, Peterson, Matthews and Kelley (2007), who have examined a personality trait that predicts the pursuit of "long-term goals with sustained interest and effort over time," which they have termed "grit" (p. 1087). According to Duckworth and colleagues (2007), grit is defined as "trait-level perseverance and passion for long-term goals." They found associations between grit and lifetime educational attainment (Duckworth et al., 2007), prediction of teacher effectiveness (Duckworth, Quinn, Seligman, 2009; Robertson-Kraft & Duckworth, 2012), academic performance at top tier universities (Duckworth et al., 2007), and rank in the National Spelling Bee (Duckworth, Kirby, Tsukayama, Berstein & Ericsson, 2011; Duckworth et al., 2007). Grit was also associated with a higher retention rate at West Point. Grit predicted student retention more than SAT score, high school rank, or self-control (Duckworth et al., 2007). The concept of grit may be emerging as a personality characteristic that predicts success in various settings, including graduate online education. By predicting whether a student may be at risk, schools and programs may be able to offer support to students to enhance their ability to succeed in online programs.

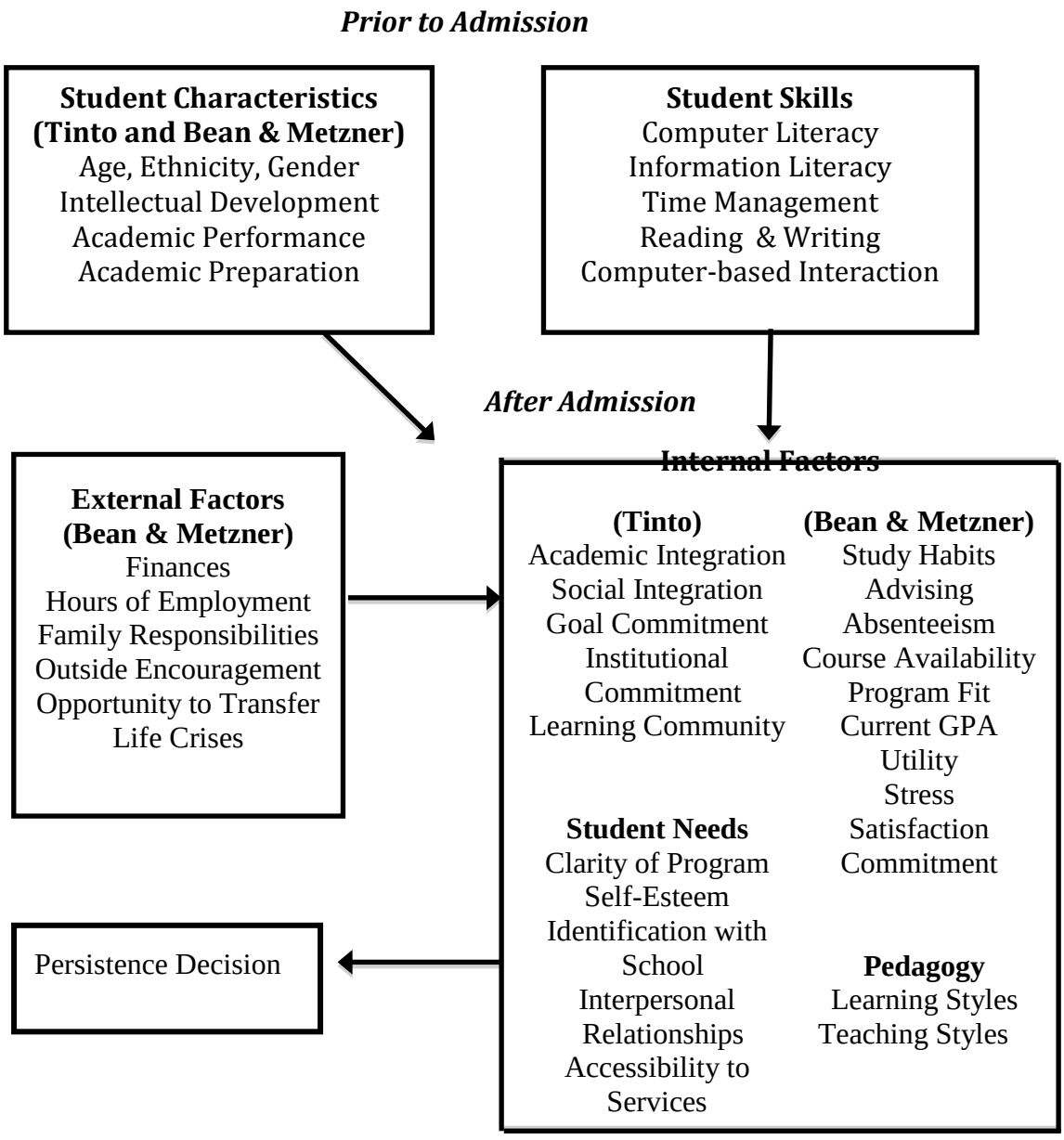

Figure 1. Rovai's Composite Persistence Model (Rovai, 2003, p. 9)

Persistence and Retention Studies

Research related to the persistence and retention of online students can help to inform IHEs in planning strategies and services to promote online learners' success. A few studies have focused specifically on graduate-level online learners. Based on a literature review of graduate online nursing students, Gazza and Hunter (2014) observed that a wide range of factors may contribute to student success, and suggested that course quality, socialization, and attention to individual student characteristics may facilitate student retention. In a mixed-methods study of 278 doctoral-level students in a distributed educational leadership program, Ivankova and Stick (2007) compared graduates with withdrawn/inactive students and found that comfort with the online learning environment, individualized attention and support from instructors, satisfaction with support services, and self-motivation to achieve their degrees positively affected students' persistence in their programs. Academic advising and external factors, including family and employment, did not significantly affect students' persistence. On the other hand, a qualitative case study of 18 postgraduate online business students who were delayed in their progress or had exited their program before completion found that situational factors (i.e., employment and family commitments), as institutional factors (i.e., course relevance, student support systems, student orientation programs), and a lack of clear, realistic goals for their studies, had a negative impact on student retention (Carroll, Ng, & Birch, 2013). At the undergraduate level, Lee, Choi and Kim (2013) discovered that persistent students differed significantly from those who dropped out of school in terms of metacognitive self-regulation for learning and having an internal locus of control, but did not find a significant difference in academic self-efficacy, time and environment management, or support from family and work.

A number of studies of online student persistence and retention have focused on community college level students. In contrast to previous studies showing higher rates of attrition among online learners at community and technical colleges (cf. Xu & Jaggars, 2011), Shea and Bidjerano (2014) found that students who took online course(s) in the early semesters of their academic programs were more likely to complete their programs than those who did not. Notably, unlike previous studies, these authors controlled for personal, familial, and institutional variables that could impact learner persistence. They also found that females, older students, students from larger families, students with higher institutional aid and loans, and to a lesser extent students living farther away from campus and those at a higher risk of not completing their degrees, were more likely to enroll in online courses. These findings underscore the importance of understanding the unique characteristics and needs of online learners in determining the types of supports that are most likely to have a positive impact on their persistence.

Another study by Fetzner (2013) examined the survey responses of 438 "unsuccessful online students" at Monroe Community College in New York. Unsuccessful students "were defined as those who received a grade of F or W" (p. 13). The telephone survey was administered in 2000-2001, 2005-2006, and 2009-2010. The top three reasons for students' lack of success were: 1) "19.7%—I got behind and it was too hard to catch up;" 2) "14.2%—I had personal problems (health, job, child care);" and 3) "13.7%—I couldn't handle combined study plus work or family responsibilities" (p. 15). Similarly, a literature review of online course dropouts in post-secondary education conducted by Lee and Choi (2010) found three major categories of factors influencing online dropout rates; they were: 1) student factors (i.e., academic background, relevant experiences, relevant skills, and psychological attributes), 2) course/program factors (i.e., course design, institutional supports, interactions), and 3) environmental factors (i.e., work commitments and supportive environments). Although these are not areas instructors or support staff can control, early alert systems such as those that are embedded in most course management systems, as well as third party products like Hobsons's Starfish Retention Solutions (See: http://www.starfishsolutions.com/) utilized by Britto and Rush (2013), might be worthwhile using, particularly in courses/programs where the instructor-student ratio is high. Such systems can help instructors and support staff to identify strategies and/or services that may foster student success.

One other key finding in Fetzner's study is "[t]he best chance of an online student getting a grade

of C or better occurs when they register five or more weeks before the start of the semester" (p. 17). This is important because, if students enroll late in an online course, they might start off on the 'wrong foot' and have a hard time catching up. To help allay this problem, programs may offer an orientation to their online students. As demonstrated by Jones (2013), community college students who completed a mandatory online orientation before enrolling in online or hybrid courses reported feeling more confident about and better prepared for online learning in general, as well as using the course learning management system. Students also contacted the Help Desk less than in previous years; and the student retention rate increased 7.7% after completing orientation "and continues to remain between 80-84% three years later" (p. 44). Other studies evidenced positive results at the undergraduate (Ali & Leeds, 2009) and graduate levels (Pintz & Posey, 2013) for programs that offered online orientations.

Supporting & Retaining Graduate Online Learners

To better support adult learners outside of the classroom, institutions may adopt a range of strategies and supports. The Council for Adult and Experiential Learning (CAEL, 2012) developed the *Principles of Effectiveness for Serving Adult Learners* to address this need. Table 1 shows each principle and its description of how institutions can excel in each area.

Table 1

CAEL's Principles for Serving Adult Learners Effectively

Principle	Description
Outreach	Conducts outreach to overcoming barriers in time, place, and tradition to create lifelong access to educational opportunities.
Life & Career Planning	Addresses life and career goals before or at the onset of enrollment to assess and align its capacities to help learners reach their goals.
Financing	Promotes choice using an array of payment options to expand equity and financial flexibility.
Assessment of Learning Outcomes	Defines and assesses acquired knowledge, skills, and competencies acquired —both from the curriculum and from life and work experience—to assign credit and confer degrees with rigor.
Teaching-Learning Process	Uses multiple methods of instruction (including experiential and problem-based methods) to connect curricular concepts to useful knowledge and skills.
Student Support Systems	Uses comprehensive academic and student support systems to enhance students' capacities to become self-directed, lifelong learners.
Technology	Uses technology to provide relevant and timely information and to enhance the learning experience.
Strategic Partnerships	Engages in strategic relationships, partnerships, and collaborations with employers and other organizations to develop and improve educational opportunities.
Transitions	Supports guided pathways that lead into and from the institution's programs and services to ensure learning will apply usefully to educational and career goals.

Source: http://www.cael.org/alfi#Discover CAEL's Principles for Serving Adult Learners Effectively

IHEs can use these principles, along with CAEL's Adult Learning Focused Institutions (ALFI) assessment tools (see: http://www.cael.org/alfi), to improve supports for graduate online learners.

Studies of retention in online programs provide additional insight into the services and supports that may impact learner success. Although there are many different reasons why online students may not complete a program of study, providing appropriate supports and services for these students appears to be key to their persistence. Moore and Fetzner (2009) synthesized a variety of student support factors that have contributed to high course completion rates, including personalized access to administrative and programmatic contacts; advisors and coaches; online and/or on-campus orientations to online learning; a 24/7 technical support help desk; academic support and tutoring; and enabling students to support each other through online community websites, courses or student associations. Another best-practice student support model described in the literature includes orientations to available support services, policies, procedures and the online learning platform; on-going workshops to support academic success; online tutoring; just-in-time advising; and access to technology and support (Lenrow, 2009). Online learners' sense of community or "social presence" in online courses has also been shown to be a significant predictor of persistence (cf. Boston et al., 2009; Drouin, 2008).

Student satisfaction is another important factor to examine when investigating student retention. There is evidence that students who drop out of their online programs have lower levels of satisfaction than those who persist, and that lack of satisfaction contributes to students' decisions to dropout (Levy, 2007). Building on this research, Lee and Choi (2013) surveyed 282 undergraduates to explore the relationships among internal academic locus of control (ALOC), learning strategies, flow experience (i.e., learners' deep involvement in a learning activity), student satisfaction, and retention in online learning courses. They found that ALOC and satisfaction had a significant effect on retention. Although flow did not have a direct impact on retention, it did have an indirect effect through the mediator of satisfaction. The authors also discovered that, by contributing to flow, learning strategies had an indirect effect on satisfaction.

Hirt, Cain, Bryant, and Williams (2003) conducted a study of online students across the United States to learn about their perceptions and satisfaction with the support services they received. The two-part study consisted of an online survey completed by 162 students, as well as responses to open-ended questions by 15 of these students in an online discussion board. The researchers found that several types of support were unimportant to the students; these were "support services," "financial services," and "personal/social services" (p. 108). On the other hand, academic support services were moderately important to them. With regards to their levels of satisfaction with these services, researchers discovered that respondents "were either dissatisfied or only moderately satisfied with the services they received" (p. 112). Among the study's sample, 57% of students lived within 25 miles of the IHE in which they were enrolled in an online course. Also, many of the study's participants were only taking an online course to supplement their on-campus experiences. Therefore, the needs of students who live on or near campus and who attend courses on campus might be different than that of those who enroll in courses 100% online.

The unique needs and challenges of online graduate students should be viewed as opportunities to tailor support strategies and services to foster their professional growth and academic success. Yet, little is known about online graduate students (Haydarov, Moxley, & Anderson, 2012-2013) or the types of supports they view as important to their success. Although there are a few studies focused specifically on graduate online learners, most research related to the factors and supports that may contribute to online learner retention has centered on undergraduate and community college students. Gathering and analyzing online graduate students' perceptions related to the administrative, academic, technical and community supports identified in the literature as important to student performance and retention, along with demographic and personal factors that may impact their success, is a critical first step in guiding IHE's investment in developing appropriate services and supports to meet their unique needs. This research will help shed light on these issues and potentially reveal opportunities for more innovative, macro- and micro-level support strategies.

Method

Research Design

This article summarizes the first phase of an exploratory "QUAN → qual sequential mixed methods study" (Morse, 2003, p. 198) with two overarching goals: (1) Investigate the resources, strategies, and practices that have supported online master's students, or that they perceive could have supported them, for success in online learning; and (2) Determine if nontraditional students, those with diverse backgrounds (e.g., URMs), or those who have been out of school for several years, and/or have not participated in online education, have unique needs based on their distinctive demographic characteristics. Sequential mixed method design studies, which fall under the mixed method umbrella, consist of two methods that occur in different phases of a study, each applying *different* methods, and conducted sequentially. The quantitative phase informed the design of interview questions and the selection of participants in the qualitative phase.

Quantitative methods used in the first phase of the study involved the administration of a web-based survey in August 2014 of the master's students enrolled in two 100% online programs: Master of Arts with a concentration in Education Technology (ET) and Master of Science in Nursing (MSN) at the same university in the United States. The survey was created and administered via PsychData (http://www.psychdata.com/) and data were analyzed using descriptive statistics in SPSS. Only aggregated data are reported in the present study to ensure confidentiality and anonymity of the study's participants.

Instrument

The survey was created after reviewing the literature and other existing instruments (i.e., Dare, Zapata, & Thomas, 2005; Lee, Choi, & Kim, 2013; Newberry & DeLuca, 2014; Rovai, 2003). We used portions of Rovai's Composite Persistence Model as the conceptual framework for the design of the survey and most of Dare, Zapata, and Thomas's (2005) survey questions and format for the development of our survey questions. To reduce response burden, we selected specific aspects of Rovai's Composite Persistence Model that focused on student characteristics (i.e., student demographics and personal factors/life experiences) and social integration/learning community. In addition, the survey included questions assessing students' grit (Duckworth et al., 2007) to better comprehend students' personality traits. We also examined students' perceptions of the importance of, and satisfaction with, various supports available to them from their university (i.e., academic, administrative, and technical support services).

The instrument consists of the following sections: (1) Demographics (19 questions); (2) Administrative Support Services (19 questions); (3) Academic Support Services (11 questions); (4) Technology Support Services (11 questions); (5) University Online Community Supports (31 questions); and Personal Factors (20 questions). Survey items related to the support services asked students to rate the importance of, and satisfaction with, each of the specific services within each category, on a 5-point Likert scale. Because students may not have used some services, the satisfaction scale also included a "Not Applicable" (N/A) option.

In addition, we were interested in exploring the concept of grit in our study. We included the Short Grit Scale (Grit-S) developed by Duckworth and colleagues at the University of Pennsylvania (Duckworth & Quinn, 2009). The Grit-S contains eight items using a 5-point scale (1 = "not like me at all," 5 = "very much like me"). Four items describe the tendency toward sustained effort for long-term goals, and four other items describe sustained, focused interest (as opposed to frequently changing goals) over time. The internal consistency was $\alpha = .82$ for the overall grit scale, and .70 and .83 for the effort and interest subscales, respectively (Duckworth & Quinn, 2009).

Sample

All first- and second-year master's students in the ET and MSN online programs enrolled in fall 2012 through summer 2014 were asked to complete the survey. Each program is taught 100% online. Student demographics in these programs are very similar as Table 2 shows. All of the student services are available online via email, web conferencing services (e.g., Skype), and/or telephone. Students may have enrolled during the fall, spring, or summer semesters. The rationale for inviting only these "newer" students was to ensure that the study was current in its examination of available supports and resources. Also, the newer students may better remember their initial transition to online learning. We sent email requests to 341 students inviting them to complete the survey. We used existing institutional contact information for these students. Of those, 64 students completed the survey resulting in a response rate of 19%.

Table 2

ETL and MSN Student Demographics – 2014 - 2015 (Entire Program)

	ETL	**MSN**
Average Age	43	38
Gender		
Female	72%	91%
Male	28%	9%
Race/Ethnicity		
American Indian or Alaskan	1%	1%
Asian	2%	9%
Black/African American	15%	11%
Hispanic/Latino	2%	6%
Nonresident Alien	7%	1%
Unknown	6%	8%
White	65%	64%

Data Analysis

Quantitative data analysis involved descriptive analyses of survey data using SPSS. Additionally, sub-group analyses were conducted using various participant demographics and characteristics (i.e., age, school, gender, etc.). For age, we grouped participants into two primary groups: "younger than 40 (<40)" and "41 and older (≤41)" to investigate any differences attributed to these age groups. Also, initially we examined students' responses based on the race/ethnicity categories in the survey but did not find any significant differences. We then grouped students into white and non-white categories to determine if there were any differences in responses. The results of these analyses are shared in the Results section.

Results

In this mixed method study, we examined first- and second-year online graduate ET and MSN master's students': 1) perceptions of the importance of administrative support services, academic support services, technical supports and online community supports; 2) personal factors and grit level; and 3) differences, if any, that exist among students, in these areas. We provide findings of *only* the quantitative portion of the study. We also investigated the demographics of these students.

Demographics

Of those who completed the survey, 39.0% were from the ET program and 60.9% were from the MSN. The average age of these students was 40.6 years. Additionally, 78.1% of students identified as female and 21.9% as male. The race/ethnicity breakdown of students was 62.5% White, 16.9% African American/Black, 11.2% Other, and 9.4% Hispanic/Latino. Respondents also reported that their primary language was English (87.5%) and had a spouse (75%) or domestic partner (4.7%). The primary language

for 12.5% of respondents was not English and 20.3% were not married nor did they have a domestic partner. The primary reasons (respondents could select more than one) why students chose to enroll in an online graduate program were: 1) "To accommodate work schedule" (62.1%); 2) "I live too far away to commute" (56.1%); and 3) "Accommodate family/other obligations" (48.5%).

All of the survey respondents had at least one child. The majority had one child (32.8%), and most of their children's ages (31.3%) ranged between 5-12 years. Additionally, 22.7% of the respondents reported having responsibility for the care of an aging or ill family member. With regards to their work status, 53.1% reported working full time and 20.3% part-time in their field of study. Only 9.4% of respondents were not working at all, nor did they have children to care for at home.

Support Services

Generally, higher percentages of students reported that the registrar's and admissions offices' support services were important to them compared to other university support services, as Table 3 shows. The percent of students who were satisfied or very satisfied with these services also varied. Notably, relatively high percentages of students selected "N/A" when asked to rate their level of satisfaction on those services that were rated as important by a fewer number of students, which may indicate that services such as career counseling, the counseling center, student organizations, veterans services and international services were used by a relatively small number of students.

Table 3

Administrative Support Services Rated as Important/Very Important or Satisfied/Very Satisfied

Services	**Importance**		**Satisfaction**		
	n	%	n	%	N/A
Registrar	64	92.2	56	83.9	9.1
Admissions Office	63	87.5	58	89.7	6.1
Financial Aid	64	65.6	31	80.6	48.5
Career Counseling	63	38.1	8	62.5	81.8
Counseling Center	62	35.5	20	30	65.2
Bookstore	63	34.9	40	57.5	34.8
Student Organizations	63	27.0	12	50.0	77.3
Veteran Services	64	17.2	10	80	80.3
International Services	64	9.4	3	33.3	89.4

However, when students' responses were grouped by white/non-white and then compared, both Career Counseling and Counseling Services resulted in stark differences between these two groups, as Figures 2 and 3 illustrate.

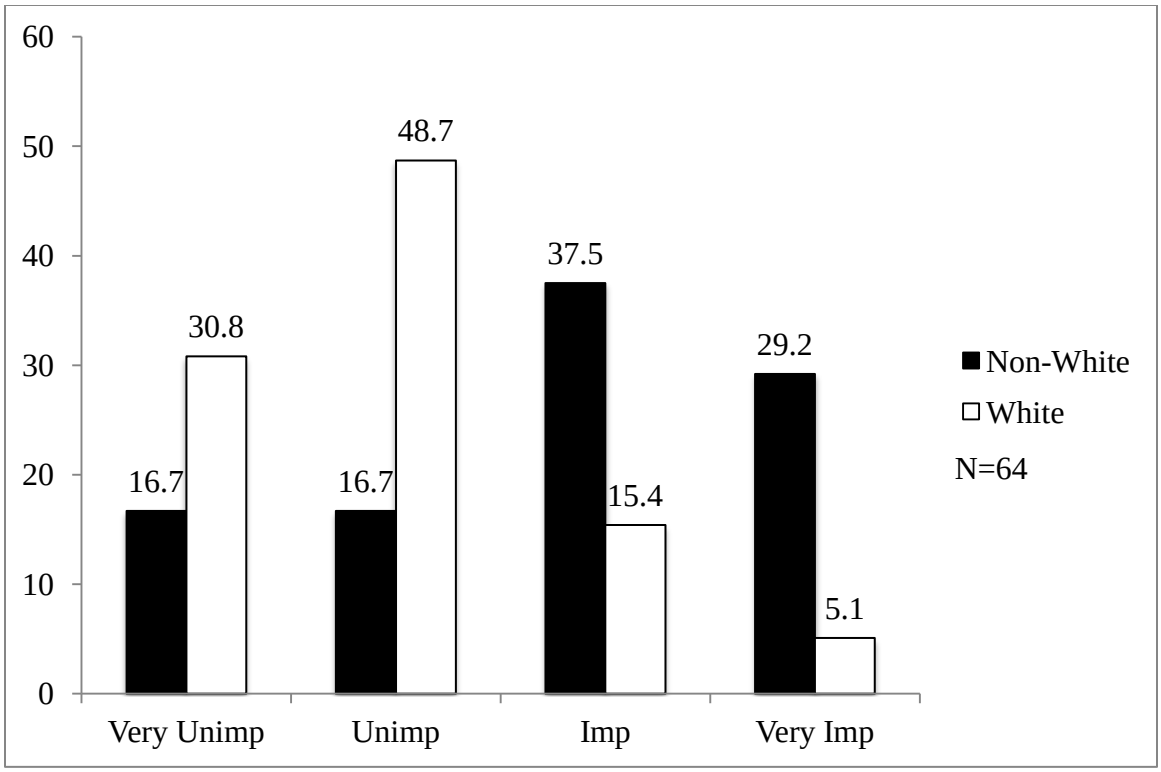

Figure 2. % of Non-White vs. White Participants' Rating of Career Counseling Services as Very Unimportant, Unimportant, Important or Very Important

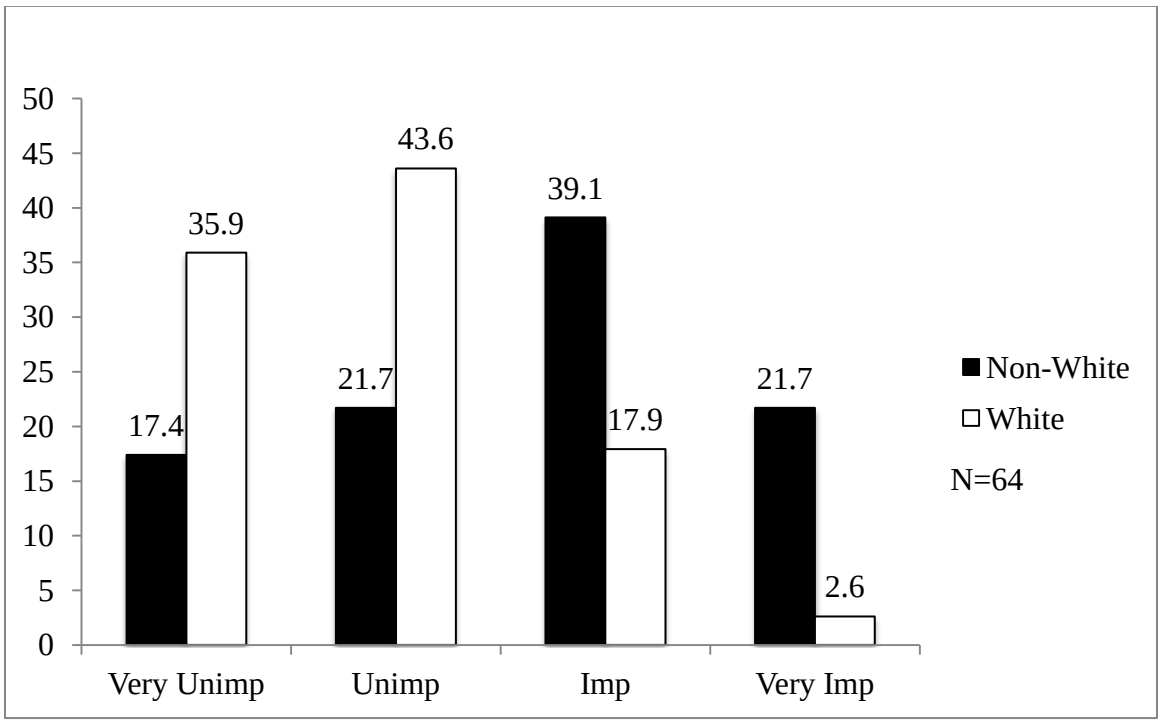

Figure 3. % of Non-White vs. White Participants Rating of Counseling Services as Very Unimportant, Unimportant, Important or Very Important

As shown in Table 4, analysis of participants' responses regarding academic support services displays that almost all of the students (98.4%) noted that individual support from their instructors was "important" or "very important." All of the academic support services appear to be valued by a large majority of students, with the exception of the writing center, which was rated as "important" or "very important" by a lower percentage of students (61.3%) when compared to the other support services. Notably, many courses in the ET and SON MSN programs require a significant amount of writing. In general, most students were "satisfied" or "very satisfied" with the academic support services they received.

Table 4 *Academic Support Services Rated as Important/Very Important or Satisfied/Very Satisfied*

Services	**Importance**		**Satisfaction**		
	n	%	n	%	N/A
Ind. Support from Instructors	62	98.4	60	75.0	0
Libraries	60	95.0	60	85.0	3.0
Academic Program Advising	63	90.4	59	78.0	0
Online Academic Orientation	63	87.3	52	71.2	13.6
Writing Center	62	61.3	23	65.2	43.9

In the area of technical support services, a large majority of students reported that online and just-in-time help was important to them. The percentage of students who were "satisfied" or "very satisfied" with these services was lower than the levels of importance selected, as Table 5 shows. Regarding F2F technology orientation, lower percentages of students indicated high levels of importance or satisfaction when compared to the other types of technical supports. Notably, 60.6% of students indicated "N/A" in response to the satisfaction question, indicating they had not received a F2F technology orientation.

Table 5 *Technical Services Rated as Important/Very Important or Satisfied/Very Satisfied*

Services	**Importance**		**Satisfaction**		
	n	%	n	%	N/A
Instructions/Help Embedded in Courses	62	95.2	54	72.2	12.1
Tech Support Help Line	62	90.3	42	61.9	28.8
Online Technology Orientation	62	88.7	54	61.1	12.1
Just-in-time Online Help	61	81.9	31	61.3	42.4
Face-to-Face Tech. Orientation	59	50.8	21	47.6	60.6

Online Community

Almost all of the respondents reported that the "local" online community established within their online learning experiences (i.e., the community established within a course with "My Instructor" or "Other Students in My Course[s]) was "important" or "very important" to them, as Table 6 illustrates. Indeed, a high majority of students rated all of the opportunities for connection and interaction as "important." Although most students were "satisfied" or "very satisfied" with these connections, the percentages were lower for "satisfaction" than "importance."

Table 6

Connection/Interaction with Others within Online Courses Rated as Important/Very Important or Satisfied/Very Satisfied

Supports	**Importance**		**Satisfaction**	
	n	%	n	%
My Instructor(s)	58	100	59	76.3
My Academic Advisor	58	96.6	59	69.5
My Academic Department	56	96.4	58	62
Other Students in my Course(s)	58	94.9	58	81.1
Other Students in my Academic Program	57	89.5	53	83
University in General	58	84.5	53	73.6

Examination of students' opportunities to connect with faculty and fellow students revealed that more students rated supports that are directly linked to their coursework (i.e., micro-level supports) higher than macro-level connection opportunities, such as on-campus networking and opportunities to participate in student associations or school governance (see Table 7). These findings also highlight that although levels of importance may be high, the levels of satisfaction are not always as high. For instance, although a large majority of the survey respondents noted that asynchronous discussions within courses were "important" or "very important" (92.8%), only 52.1% selected "satisfied/very satisfied." Moreover, this is another area in which grouping of students into sub-groups by white/non-white resulted in differences. For example, as Figure 4 displays, a higher percentage of non-white students responded that having a fellow student buddy was important. For this item, 61.9% of non-white students selected "Very Important" and 33.3% "Important", whereas only 29.7% of white students chose "Very Important" and 35.1% "Important".

Table 7 *Opportunities to Connect with Faculty and Fellow Students Rated as Important/Very Important or Satisfied/Very Satisfied*

Supports	**Importance**		**Satisfaction**		
	n	%	n	%	N/A
Asynchronous Discussions within Courses	58	82.8	48	52.1	13.6
Fellow Student "Buddy"	58	75.9	33	60.6	31.8
Virtual Instructor Office Hours	58	74.1	38	36.8	30.3
Real Time Interactions within Courses (e.g., Webinars)	58	67.3	44	43.2	19.7
Social Network for Your Academic Program	56	66.1	40	40	27.3
Alumni Mentor	57	54.4	13	23.1	68.2
On-Campus Academic and Networking Opportunities	57	54.2	28	35.7	45.5
Student Association	57	36.7	19	42.1	57.6
Opportunity to Participate in Committees/Governance	57	28.1	15	40	65.2

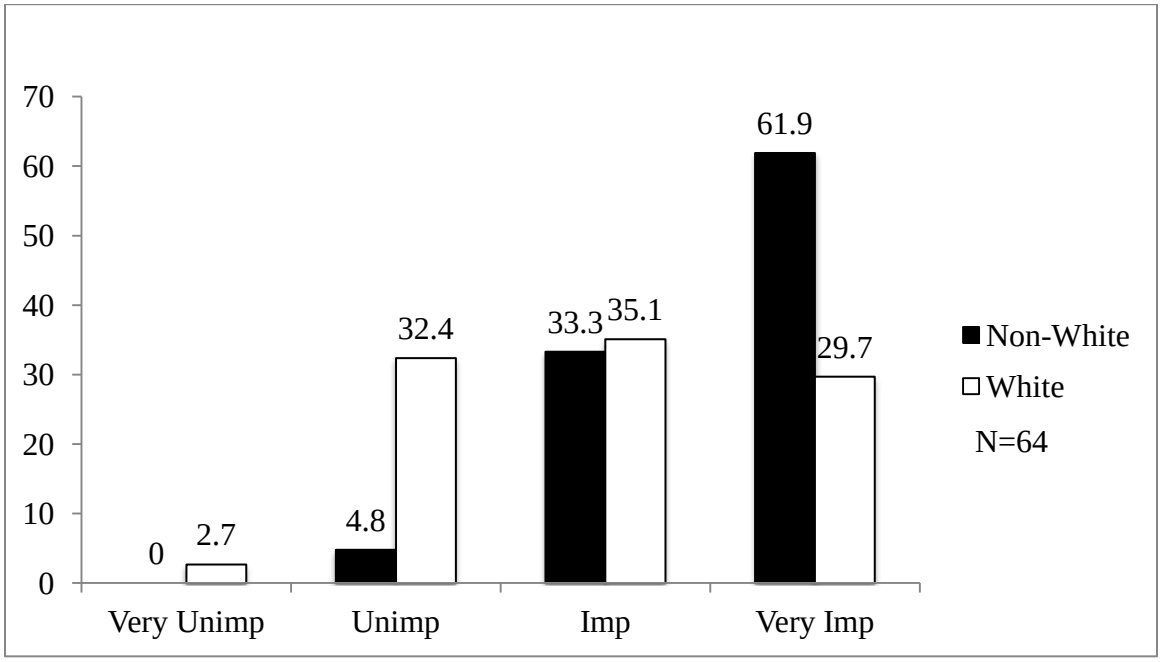

Figure 4. % of Non-White vs. White Participants Rating Fellow Student Buddy as Very Unimportant, Unimportant, Important or Very Important

In the survey, we also explored personal factors that might influence graduate students' success in online study (see Table 8). The survey revealed that relatively few students experienced personal, financial or academic difficulties. A little over half of students (58.9%) faced technical or computer problems, and a majority of students "agreed" or "strongly agreed" with statements that would positively impact their academic success. With regards to technology use, we categorized participants as under and over 40, as approximately half of participants fell into each group, and did not find a significant difference, as is evident in Figure 5.

Table 8

Personal Factors Rated Agree or Strongly Agree

Personal Factors	**n**	**%**
My family and friends support my studies.	55	89.1
If I have questions or need help, I am comfortable contacting my instructor.	56	87.5
Using technology/computers is easy for me.	56	78.5
It is easy to motivate myself to work on my online coursework.	56	76.8
I love learning online.	56	67.8
I have experienced technical/computer problems.	56	58.9
I have financial problems.	55	14.5
My online course(s) is too difficult.	56	10.7
I am having trouble managing my studies and other responsibilities.	48	10.4
I have personal problems (e.g., health, job, childcare).	56	8.9

To gain more insight into personality traits associated with persistence we included the Grit-S Scale. The four negatively worded items were reverse coded. We then performed a reliability analysis using all 8 items. The Cronbach's alpha was 0.72, but item analysis indicated that item 2, " Setbacks don't distract me" did not correlate well with other items. Reliability analysis excluding this item resulted in an acceptable Cronbach's alpha of 0.77. Therefore, we excluded this item when constructing the mean scale score. The distribution of the Grit-S mean scale score was normal, with a mean of 4.10 (SD=0.47), ranging from 3 to 5. Table 9 (next page) depicts the frequencies and percentages of respondents who rated an item, "mostly or very much like me."

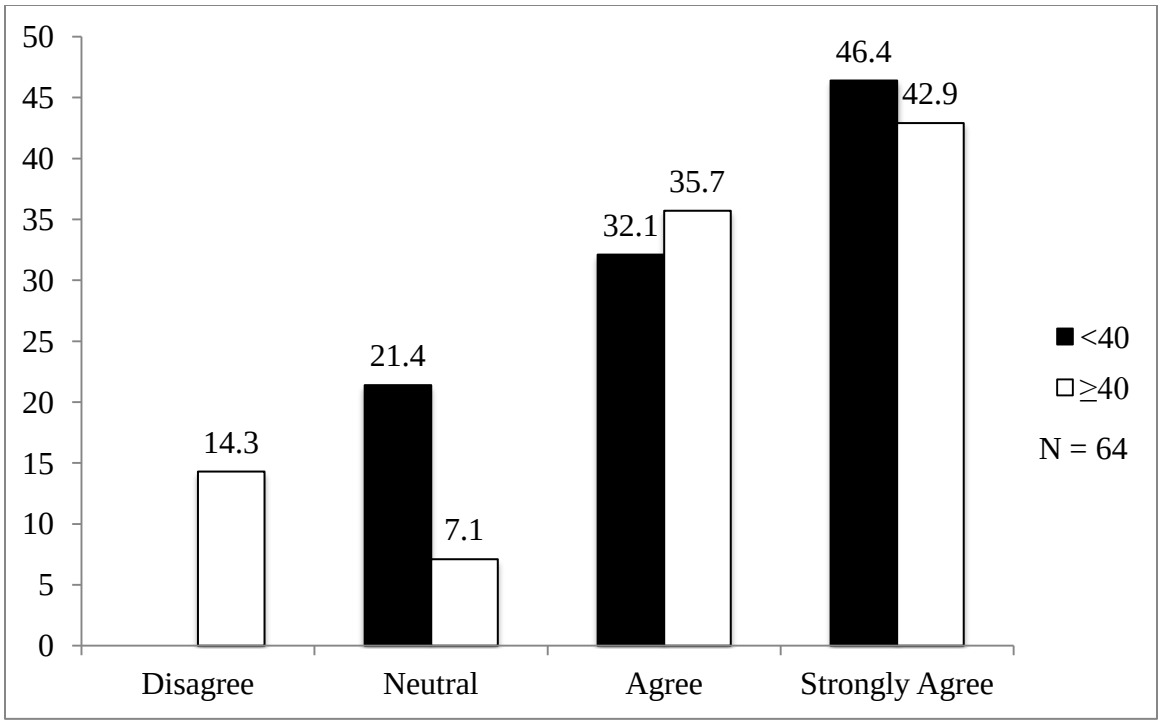

Figure 5. Percentage of Participants Under 40 vs. Older than 40 Agreeing that Using Technology/Computers is Easy for Me

Table 9

Grit-S Scale Rated as Mostly or Very Much Like Me

Grit-S	**n**	**%**
I am a hard worker.	57	100.0
I am diligent	56	98.2
I finish whatever I begin	57	91.2
Setbacks don't discourage me.	56	51.8
New ideas and projects sometimes distract me from previous ones.	52	21.1
I have been obsessed with a certain idea or project for a short time but later lost interest.	49	14.3
I have difficulty maintaining my focus on projects that take more than a few months to complete.	52	7.7
I often set a goal but later choose to pursue a different one	57	5.3

The respondents in this study rated themselves fairly high on the grit scale. We did several subgroup analyses attempting to correlate age, race, or program with higher or lower rates of grit and there were no differences.

Discussion/Conclusions

Overall, the participants in our survey rated the majority of supports and services available to them with high levels of importance and satisfaction, with some exceptions. These findings contradict those of Hirt et al. (2003) who conducted a study of online students' perceptions of and satisfaction with various support services and found that several types of support were unimportant to the students. However, they suggested that the respondents might have been mostly on-campus students who also took an online course and not students enrolled in programs offered 100% online.

Our findings show that a large majority of survey participants rated course-level supports (i.e., interactions with instructors, individual instructor support, help embedded in courses, library) as important. Relatively fewer students rated supports that might be needed on rare occasions (e.g., career services, bookstore) or by students with unique needs (e.g., writing center, international student and veteran's services, counseling center) as important. These findings provide some evidence for more focused attention on, or investment in, faculty development, online course design, and other ways to support students at the micro-level than at the macro-level (i.e., through supports provided by the university). Yet, it is important to emphasize that these services are not any less important. Rather, these services may be critical to retaining students with distinctive support needs and those who are at risk for academic or personal reasons. The higher levels of importance for micro-level interactions might be associated with the established need for a "sense of community" in online courses (cf. Boston et al., 2009; Drouin, 2008). Indeed, connection and interactions with instructors, academic advisors, academic department and other students in courses were among the supports rated important by the highest percentages of students.

For some services, there was a notable difference between the number of students who rated certain services as important and the number who were satisfied with their experiences. This raises questions as to how such supports with the largest gaps might be improved or modified to ensure that students report high levels of satisfaction with all supports. For example, while almost all students rated interaction and individual support from instructors as important, only about 75% of students were satisfied with this support. Similar gaps were found in several areas of technical support. In addition, although the counseling center was rated as important by a low percentage of students, only 6 of the 20 students who responded to the satisfaction question were satisfied with this service. Clearly a goal for any IHE is for students to be highly satisfied with all of the supports they receive. These findings are a starting point for further study into the reasons why students were dissatisfied with individual services as a basis for targeted improvements.

Conflicting results between white and non-white students on certain items suggest that the perceived importance of some supports, such as counseling services, may vary by race/ethnicity. This finding is significant if data are collected and are not disaggregated by student demographics. It is possible that administrators may conclude that most students value a support and/or are satisfied with it. However, our findings highlight the need not only to collect demographic data, but also to analyze data by demographic to ensure responses reflect the perspectives of students, particularly those that might diverge from the majority population of students.

Our findings related to personal factors and grit were generally positive. A majority of students reported support from family and friends, comfort in contacting instructors for help, and that it was easy to motivate themselves to work on their online coursework. On the grit scale, nearly all students viewed themselves as hard workers who are diligent and finish whatever they begin. Very few students described personal, financial, or academic difficulties. Notably, while most students reported that using computers

and technology was easy for them, a majority also experienced technical problems, underscoring the importance of technical support for online learners.

Limitations

This study had several limitations. Since it was conducted at one university, our sample is not representative of all graduate online students. Our response rate was only 19%, so we are unable to generalize our findings to other students or settings. In addition, since we used a convenience sample, there may be some selection bias. Our students did not report many personal or academic issues, which may not reflect the experiences of the majority of students, especially those who were struggling academically. The students that responded to the survey may have been the students who were more academically successful. Moreover, the small sample did not allow us to use multivariate statistics to predict or identify relationships between the variables. We plan to continue our research to include a larger sample. In addition to these limitations, because we did not clearly define the survey option "N/A," we cannot be certain that participants who selected this option did not use the service. It is possible they selected this option for another reason. This will be clarified in the next iteration of the survey.

Recommendations

Based on our study's findings, we recommend the following future research:

- **Conduct longitudinal analysis of student support services for online graduate students:** As graduate IHEs expand their online offerings, and as more and more students enroll in online education, it will become increasingly important for the administrators and faculty members of these programs to ensure that adequate supports are available to these students – and for their students to know how and when to access them. These are issues of equity and access, both important not only to increasing student persistence in graduate education, but also student success. However, as resources become increasingly scarce and budgets tighter and tighter, it may be necessary to determine how/where it is best for online graduate programs to invest their limited resources with the greatest return on investment and least impact on instructional quality, equity, and access. The IHE support/resource implications, as Dare et al., (2005) indicated, need careful consideration and planning. Additional study is needed to validate the findings of this study and determine more specifically which types of services and supports are most important to online graduate learner success and retention.
- **Stratify data analysis:** Our findings illustrated some interesting differences among white and non-white students on several survey questions. Had we not stratified our data by race/ethnicity, the differences between white and non-white student demographic categories would have not been discovered. These findings further substantiate Smith's (cf. 2012) research that recommends that IHEs collect and stratify data to help determine divergent needs based on various student demographics to promote equity, access, and inclusion, and the importance of controlling for individual factors when studying online learner retention, as noted by Shea and Bidjerano (2014).
- **Examine ways to strengthen course/program supports:** In this survey, respondents rated the support and interactions at the course and program levels more highly than those available at the university level. Since online learners' greatest interactions typically occur within courses (i.e., student-student, student-instructor, and student-content), this finding is not surprising, and is consistent with research supporting the importance of interaction in online courses as summarized by Swan (2004) and the generally accepted community of inquiry model of instructional discourse in online learning (Garrison, Anderson & Archer, 2001). Given the findings of this study, it would be beneficial for graduate online program administrators to examine whether existing supports at the university level should be embedded within courses. For example, students might find it more beneficial to have a "writing coach" assigned to work with them within a course rather than seeking support from a centralized, university-wide writing center that is available to all of the students across the university.

Our future research will include individual interviews followed by qualitative analysis to further explore survey participants' perceptions related to online learning supports and services; revising, validating, and further testing of the survey; stratified analysis of the survey findings; and development, implementation and evaluation of strategies, based on our research findings, to promote retention and success among graduate online learners.

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