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Sense of Belonging from a Distance: How Online Students Describe, Perceive, and Experience Belonging to the Institution

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Sense of Belonging from a Distance: How Online Students Describe, Perceive, and

Experience Belonging to the Institution

by

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A dissertation submitted in partial fulfillment of the
requirements for the degree of

Doctor of Education
in
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Abstract

The availability and ease of access to online bachelor's degree programs has led to a dynamic shift in the world of higher education. While overall, there has been a decrease in student enrollments, distance student enrollment has been growing. According to a report by the Babson Survey Research Group, between the fall of 2012 and the fall of 2016 students pursuing higher education at all levels across degree-granting institutions fell by 3.8%. During the same four-year period, the percentage of those students choosing to take all or some of their courses at a distance increased from 25.9% to 29.7%. Among all students taking courses at a distance, approximately half are exclusively taking online courses. In light of this national student data, some argue that distance education is in fact shifting into the mainstream of higher education, rather than being marginal or unconventional.

While growing online enrollments may breed optimism, online students are more likely to experience feelings of isolation and lack of motivation and self-direction, often contributing to high attrition rates and low completion rates compared to their on-campus counterparts. Institutions struggle to find ways to best support online learners and address common challenges that most students face who enroll exclusively in online degree programs. Studies have demonstrated that sense of belonging is a critical component to the retention of students enrolling in traditional campus courses, but a substantial gap exists in the literature on sense of belonging in online learners. This study filled a gap in the research by focusing on distance learners and sense of belonging, specifically if they experience it, if it matters to their satisfaction, persistence and academic success, and how

the institution fosters a sense of belonging among them. This mixed methods study

sought to fill a gap in the research by asking (a) To what extent do distance students

report a sense of belonging to the institution? (b) Does a sense of belonging play a central

role in distance students' satisfaction, persistence, and success at the institution? and (c)

What can the institution do to promote a sense of belonging in distance students?

Through the use of an online survey, this study found that distance students

experience a sense of belonging to the institution, measured by the University Belonging

Questionnaire (UBQ), and that belonging was strongly correlated with their satisfaction

and intent to persist. Additionally, both quantitative and qualitative data indicated that

faculty and staff play a critical role in facilitating distance students' belonging.

Participants reported that attending university events, either in their area or on campus,

specifically made them feel most connected to the institution. Finally, data analysis

indicated that White students experienced stronger sense of belonging to the institution

than students identifying as other race/ethnicity groups. Implications for practice and

recommendations for universities managing online programs are discussed.

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I would like to thank my chair, Dr. Sybil Kelley, for all of her support and kindness throughout this process. I would also like to acknowledge my committee for the great time and thought they have dedicated to my research—Dr. Karen Haley, Dr. Ellen Skinner, and Dr. Janelle Voegele.

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Last, but certainly not least, I want to thank the faculty, support staff, and my classmates in the Educational Leadership and Policy program, who have all contributed to my growth over the last three years. I hope I was able to return the favor.

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Chapter One: Introduction

The availability and ease of access to online bachelor's degree programs has led

to an interesting shift in the world of higher education. While overall there has been a

decrease in student enrollments, distance student enrollment is growing. According to a

report by the Babson Survey Research Group (Seaman et al., 2018) utilizing the National

Center for Educational Statistics (NCES) Integrated Postsecondary Education Data

System (IPEDS), students pursuing higher education at all levels across degree-granting

institutions fell by 3.8% between the fall of 2012 and the fall of 2016. During the same

four-year period, the percentage of those students choosing to take all or some of their

courses at a distance increased from 25.9% to 29.7%. Among all students taking courses

at a distance, approximately half were exclusively taking online courses. In light of this

national student data, Xiao (2018) argued that distance education—education that uses

technology to deliver synchronous or asynchronous instruction to students separated from

the physical campus—is in fact shifting into the mainstream of higher education, rather

than being marginal or unconventional.

With uncertainty around national funding for higher education at an all-time high,

student attrition impacts institutional bottom line. Institutions that implement practical

solutions to enhance the student experience and better support a growing population of

online degree-seeking students will weather the impacts of reduced government funding

in higher education far better than those who cannot. Simpson (2008) explained that an

investment in higher education provides returns for students, institutions, and

governments, and that the return on investment for institutions that provide distance and

online learning depends largely on retention rates. Simpson cited a long history of institutions using proactive support of online students to positively impact distance learner retention. For example, Ohio State University invested $345,000 to increase retention rates by 5%, a 625% return on investment, which yielded $2.25M in increased tuition revenues. A national study on student satisfaction that included 641,800 students from 896 colleges and universities showed that online learners (73%) were more satisfied overall with their educational experience and more likely to enroll when compared with various groups of students, including students attending four-year public (56%) and private (56%) institutions, adult undergraduate students (69%), graduate students (67%), and community college students (64%) (Ruffalo Noel Levitz, 2018). The author speculated that the significant representation of adult learners in the community college, graduate school, and online environments contributes to higher satisfaction rates. However, most research has cited high attrition rates and low completion rates in online learning, indicating there is much work to be done.

While growing online enrollments may breed optimism around overall declining enrollments, online students have been more likely to experience feelings of isolation and lack of motivation and self-direction (Abrami & Bures, 1996; Rush, 2015), often contributing to high attrition rates and low completion rates compared to their on-campus counterparts. Attrition rates for distance students are estimated to be between 10% and 80% (McClendon et al., 2017). Given the IPEDS data above, it is clear that universities have a much harder time retaining distance students than they do recruiting them. Institutions struggle to find the best ways to support online learners and to address common challenges that most students face when enrolling exclusively in online degree

programs. Studies have demonstrated that sense of belonging—a students' feeling of connection to the institution—is a critical component to the retention of students enrolling in traditional campus courses; however, there is limited research focused on distance learners and sense of belonging. Furthermore, there is minimal research focused on how institutions foster sense of belonging in students studying at a distance. This mixed methods study aimed to fill a gap in the existing research by exploring if online learners experience a sense of belonging to the institution, how they describe that experience, whether belonging is connected to metrics of student success, and what role the institution can play in fostering that sense of belonging.

Chapter 1 includes the background of this topic, the conceptual underpinnings for the study, purpose of the study, research questions and methods, and definitions of key terms.

Background

On a foundational level, the problem of practice at the center of this study is the poor retention and support of online learners. Research of online learner success has historically focused on the academic aspects of distance learning—pedagogy, course design, and the curricular experience. This study focused on the student experience of online leaners outside of the classroom, their sense of belonging in the online environment, and what institutions may do to nurture sense of belonging. To properly examine the issue of poor retention in distance students and why it is a concern, enrollment trends must be understood.

A report on distance education enrollment found that in 2015, almost 5 million undergraduate students and just over 1 million graduate students were enrolled in

distance courses (Allen & Seaman, 2017). Distance education has become more the norm than the exception in the last decade and primarily serves nontraditional adult learners nationally (Merriam & Bierema, 2014). Increased enrollments coupled with high attrition rates indicate an urgent need for evidence-based solutions that address the success of distance students.

According to Merriam and Bierema (2014), adult online learners should belong to online communities that encourage positive social interactions. While literature often points to various external variables of student success and challenges for adult and online learners, such as time management, family and employment obligations, and access to support resources, we know that online learner retention is affected by internal variables as well. Those internal variables include self-esteem, sense of belonging, and ability to connect to peers, faculty, and staff (Merriam & Bierema, 2014). Internal variables can be more difficult for adult learners to address when studying online as they have less opportunity to build connections to campus, faculty, staff, or fellow students. Many support services targeting adult and online learners primarily address external variables. Services designed to increase self-esteem, provide connections to support faculty or staff, and foster a sense of belonging could help mitigate high attrition rates in distance learners.

Conceptual Underpinnings for the Study

According to Jevons (1984), the "distance" in distance education is in fact not only specifically geographic in nature but also a metaphor for the student's integration into the institution. Aspects of integration that appear in the literature, such as social integration, sense of belonging, and sense of community, are largely interrelated.

McMillan and Chavis (1986) provided a broad definition of sense of belonging as "a feeling that members have of belonging, a feeling that members matter to one another in the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). The concept of integration, often the foundation of belonging in higher education research, begins with one of the most often-cited works exploring social integration of college students, *Leaving College: Rethinking the Causes and Cures of Student Attrition* (Tinto, 1987). In this work, Tinto highlighted students' peer relationships in terms of their impact on positive social integration and therefore retention at the university. More recently, Strayhorn (2012) developed a working definition of sense of belonging that refers to "students' perceived social support on campus, a feeling or sensation of connectedness, the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group (e.g., campus community) or others on campus (e.g., faculty, peers)" (p. 3). He argued that the human need to belong takes on varied and heightened importance in situations where individuals or groups may feel especially unsupported or unwelcomed. Based on this argument, it is reasonable to assert that distance learners experience support and acceptance differently than traditional on-campus learners mainly because their access to and interaction with campus is distinctly different. Therefore, it is plausible that sense of belonging in online students may vary from that of traditional on-campus learners.

Research on sense of belonging in postsecondary students explains that students will foster this sense in various areas of the institution and at multiple levels. When a student feels a sense of belonging in a particular class, or *class belonging*, they are more confident and motivated to accomplish success in the classroom (Freeman et al., 2007).

The authors asserted that the feeling of belonging is demonstrated by increased participation in class discussions and a higher level of mastering the material presented in the class. The concept of class belonging is especially salient in online learning environments because most of distance students' interactions with the institution occur through their coursework. However, another concept explored by the authors is one of a broader sense of belonging on campus, or *university-level belonging*, not often considered in reference to distance learners. Freeman et al. (2007) found that a student's social acceptance was a significant positive predictor of a sense of university-level belonging. Furthermore, the results from their study indicate that "students' sense of social acceptance, by both fellow students and university personnel, might be the most important variable in relation to the sense of belonging" (Freeman et al., 2007, p. 216). If university-level belonging is critical to sense of belonging, institutions serving distance students should pay more attention to how they are fostering this among online learners outside of the course experience.

University-level belonging and campus climate go hand in hand. Cress (2008) defined campus climate as "the metaphorical temperature gauge by which we measure a welcoming and receptive, versus a cool and alienating learning environment" (p. 96). While online students experience campus climate and university-level belonging differently than their counterparts on campus, they are important to the student experience, nonetheless. Due to large online populations at many institutions, it is conceivable that distance students are in fact creating their own campus climate within those institutions. However, few studies exist that examine the role of belonging in the online student experience. This study, meant to explore sense of belonging of online

learners at a large public institution with strong online degree programs, will shed some

light on students' experience with sense of belonging in an online environment.

Sense of belonging is an aspect of the student experience that the institution can

influence by offering intentional and relevant student support. Using predictive modeling

to explore attrition of online students, Brindley (2014) stated that dropouts most often

occur during the first distance education course, indicating that early institutional support

focused on belonging could increase retention of distance students. In further exploration

of online student support services, Brindley cited the Western Cooperative for

Educational Telecommunications (WCET) model for developing online learner support

(Figure 1). This model consists of a suite of five integrated student services

recommended to support online learners—administrative core, communications and

information, academic services, personal services, and student communities.

Figure 1.1

WCET Model for Developing Online Student Services

Student Services for Online Learners
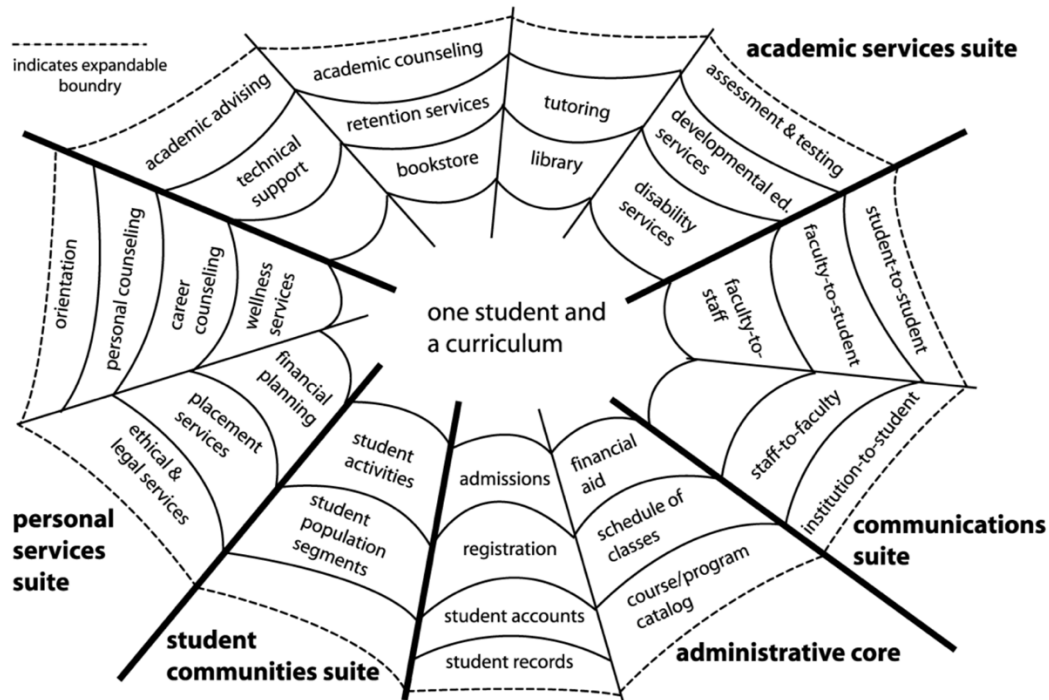
Note. From "WCET LAAP Project: Beyond the Administrative Core: Creating Web-Based Student Services for Online Learners," by P. Shea and S. Armitage, 2002, WCET, p. 3 (https://eric.ed.gov/?id=ED536193).

One strategy institutions have used to address online learner support is offering services intended to help students build community, shown in the WCET model as the "student communities suite" (Figure 1.1). However, this segment includes only two services, student activities and student population segments, neither of which indicates a strong university commitment to sense of belonging. The practices alone of offering student activities and student population segments do little to contribute to an overall sense of belonging. The model fails to acknowledge that online students may be seeking

real connections both to campus-based communities and other online communities within

the university, both of which could foster a sense of belonging in distance students. Sense

of belonging is impacted by a student's perception of feeling supported, accepted, and

cared about by others at the institution. It is reasonable to explore other aspects of the

online student experience to understand how belonging is experienced by students

studying at a distance. More importantly, it is worth examining the institution's role in

fostering belonging in online students and what universities can do to improve that sense

from afar.

Purpose of the Study

The problem presented in this study is that of poor retention and completion rates

among online learners. Research has shown that sense of belonging significantly impacts

retention of on-campus students; however, there is little known about the impact of

belonging on distance students. A proposed solution to low retention of online students is

to foster a sense of belonging among distance students and explore what services and

experiences increase that sense of belonging. To do this, we must know if online students

experience a sense of belonging; if it impacts their persistence, satisfaction, and success;

how they describe the experience of belonging; and what the institution can do to foster

their sense of belonging to the university. The purpose of this study was to measure

distance students' belonging to the university, give voice to their experiences of

belonging in the online environment, and explore the role of the institution in

contributing to their sense of belonging. There is little research on sense of belonging in

online learners, which may be true for two reasons. First, lack of research could be based

on the assumption that it is not important to this group of students compared to those in

traditional on-campus environments. Second, we do not actually know what contributes

to a sense of belonging in distance students. For that reason, the following research

questions guided this study.

Research Questions

1. To what extent do distance students report a sense of belonging to the institution?

2. Does a sense of belonging play a central role in distance students' satisfaction, persistence, and success at the institution?

3. What can the institution do to promote a sense of belonging in distance students?

Research Methods

This study used convergent mixed methods design, collecting both quantitative

and qualitative data in a single phase, analyzing the data separately, then merging data

sets to interpret results (Creswell & Creswell, 2018). The goal of this study, to develop a

deeper insight into sense of belonging in online learners, required the use of a mixed

methods design. Many aspects of belonging can be measured quantitatively through a

survey instrument. In this study, comparison of self-perceived belonging and instrument-

driven belonging scores and whether or not belonging matters to distance students'

satisfaction, persistence, and success were analyzed using quantitative data. However,

there is also a need to understand how online students describe and experience the

concept of belonging more robustly and the institution's role in that experience;

therefore, a qualitative component to the study was required as well.

This study sought to generalize findings across a population, adult and online

learners, but also sought to develop a more detailed understanding of the concept of sense

of belonging for that same population, therefore warranting a survey that used both open

and closed questions. This study used retention and persistence theory combined with

adult learning theory as the overarching conceptual framework to guide the research

addressing poor retention of online learners. Sense of belonging, as a tool for retention

and persistence of online learners, served as the theoretical framework through which this

study addressed the problem. For this study, the combination of quantitative and

qualitative data allowed for the development of a more complete understanding of

belonging in online learners as well as the institution's role in fostering belonging,

implicating programmatic changes that may need to be considered by institutions serving

online learners (Creswell & Creswell, 2018).

Data was gathered from Oregon State University (OSU), a large public land grant

university situated in the Pacific Northwest of the United States. It enrolls approximately

30,000 students per year and has strong online degree programs, enrolling close to 10,000

purely distance undergraduate and graduate students each year. At the time of this study,

OSU offered more than 55 fully online degree programs to students in all 50 states and

more than 50 countries around the world.

The data for this study were collected through an online survey distributed to

students who were pursuing their OSU degree completely online, were enrolled in spring

2019 or summer 2019 quarters, and had completed a minimum of 24 credits at OSU. The

online survey gathered information from participants on their sense of belonging using

questions developed by the researcher as well as questions about their satisfaction,

intentions to persist, and success at the university. The survey also asked open-ended

questions about students' positive and negative experiences as well as times they felt both

connected or a lack of connection to the university to better understand how students

experience and describe a sense of belonging and what OSU has done to contribute to

their sense of belonging. The survey also included all 24 questions from the University

Belonging Questionnaire (Slaten et al., 2018), but some language modifications were

made to be inclusive of distance students. Finally, the survey collected demographic

information from each participant.

Definition of Key Terms

The topics explored in this study are distance education, online learners, and sense

of belonging. To ensure consistency and clear understanding of this research study, the

following terms have been defined.

According to the *Digital Learning Compass: Distance Education Enrollment

Report 2017* (Allen & Seaman, 2017), the term *distance education* is defined 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" (p. 6). They also define

a *distance education course* as one that is exclusively delivered via distance education.

Therefore, the term *distance student,* for the purposes of this study, has been defined as a

student who is pursuing a degree exclusively through distance education courses. In this

study, the terms *distance student* and *online learner* are used interchangeably.

The term *sense of belonging* for the purposes of this study has been defined using

Strayhorn's (2012) definition: "students' perceived social support on campus, a feeling or

sensation of connectedness, the experience of mattering or feeling cared about, accepted,

respected, valued by, and important to the group (e.g., campus community) or others on

campus (e.g., faculty, peers)" (p. 3). The term *belongingness* is used in this study to indicate the sense of belonging one feels.

Summary

The purpose of this study was to give voice to distance learners, exploring their experiences of sense of belonging in the online environment and the institution's role in fostering their sense of belonging, demonstrating a need for further research into the topic. This chapter offers a background of the problem, poor retention and completion rates in online learners, with supporting enrollment and attrition data. This chapter also outlined the conceptual underpinnings of the problem, including the role sense of belonging plays in student retention and how online learner support services can impact sense of belonging. Next, this chapter stated the purpose of the study, provided a brief overview of the methodology to be used, and defined key terms. Chapter 2 offers a more advanced and thorough review of the literature related to adult learning theory, retention and persistence theory, and sense of belonging. Chapter 3 provides an overview of research methods, research questions and hypotheses, data and collection, validity and reliability, and data analysis. Chapter 4 presents findings, and Chapter 5 provides discussion, implications, limitations of the study, and suggestions for future research.

Chapter Two: Literature Review

The availability and ease of access to online bachelor's degree programs has led to a dynamic shift in the world of higher education both in terms of overall enrollment and more equitable access to higher education by diverse populations. Overall, there has been a decrease in student enrollment; meanwhile, distance student enrollment has been growing. While growing online enrollments may breed optimism, online students are more likely to experience feelings of isolation and lack motivation and self-direction, often contributing to high attrition rates and low completion rates compared to their on-campus counterparts (Abrami & Bures, 1996). Throughout the literature, attrition rates for distance students are estimated to be between 10% and 80% (McClendon et al., 2017), which translates to a substantial loss of tuition revenue for universities in a time when uncertainty surrounds national funding of higher education. Furthermore, the attrition of these diverse adult learners results in issues of equity and creates a direct conflict with the access-focused mission of distance education. Institutions struggle to find ways to best support online learners and address common challenges that most students who enroll exclusively in online degree programs will inevitably face, such as time management, family and employment obligations, and access to support services. Studies have demonstrated that sense of belonging is a critical component to the retention of students enrolling in traditional campus courses (Freeman et al., 2007; Hurtado & Carter, 1997; Morrow & Ackermann, 2012; O'Keeffe, 2013; Strayhorn, 2012), but a substantial gap exists in the literature on sense of belonging in online learners. This mixed methods study sought to fill a gap in the research by asking (a) To what extent do distance students report a sense of belonging to the institution? (b) Does a sense of

belonging play a central role in distance students' satisfaction, persistence, and success at

the institution? and (c) What can the institution do to promote a sense of belonging in

distance students?

      The literature reviewed for this study falls within three primary topic areas.

Retention and persistence theory and adult learning theory combine to serve as the

overarching conceptual framework to better understand the phenomenon of poor

retention of online learners. Sense of belonging, explored as a tool for retention and

persistence of online learners, serves as a theoretical framework through which the

problem is viewed and potentially addressed (Figure 2.1).

Figure 2.1

Theory of Change: Retention and Belonging in Online Learners
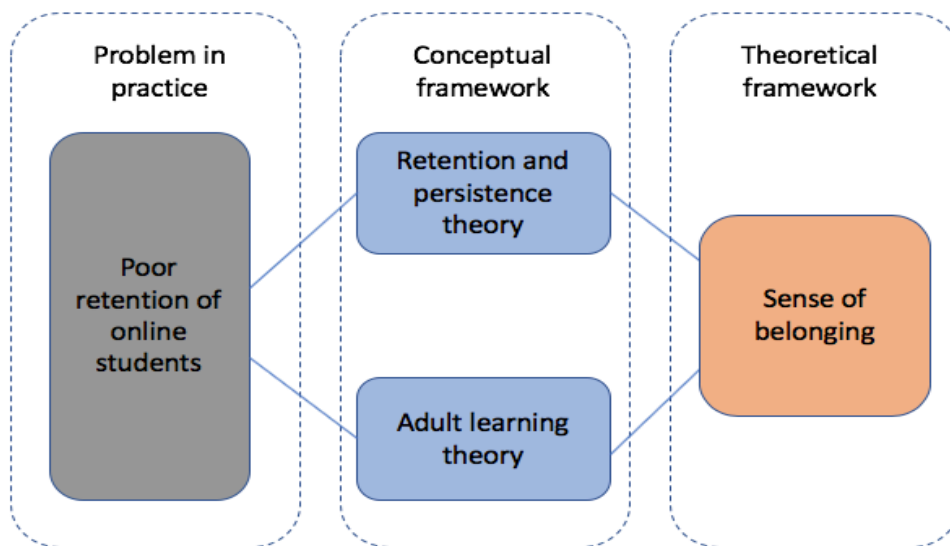
The issue of poor retention in online learners demands attention as enrollments in distance education continue to increase. Institutions have begun to realize the financial benefits of offering degrees online, but few have addressed high attrition rates in distance students, which impact the degree to which universities can rely on this source of tuition revenue. Students pursuing a degree from a distance, often adult learners, are managing various aspects of life in addition to pursuing their education. This can lead to distractions as well as feelings of isolation in regards to the institution and their peers. Sense of belonging has been found to be integral to on-campus student persistence and is worth exploring as an aspect of the online student experience.

Adult Learning Theory

Given that the primary audience of distance education in the United States has been nontraditional adult learners (Merriam & Bierema, 2014), the concept of adult learning theory must be explored as a foundational framework from which to view the problem of poor retention in online learning. Adult learners bring various and unique perspectives to higher education, including that of their own experience in the workforce, which often differs from the traditional-aged college student pursuing their degree shortly after completion of high school. As institutions have not historically catered educational offerings to those at a distance or with conflicting obligations, adult learners' access to higher education has been limited. Online learning presents adult learners with accessible opportunities to re-engage with their education on their terms and in their time. Adult learning theory, by no means a new concept, has evolved over the last 70 years starting with the work of Malcolm Knowles (1950), who acknowledged that at the very root of adult learning is a desire to improve oneself because there is a gap between one's goals

and one's reality. Regardless of the motivations in which adult learners seek higher education, Knowles claimed that adult learners were negotiating many competing interests and navigating multiple responsibilities outside of their pursuit for education, which still holds true today. These added obligations have the potential to influence progression towards their educational goals and are worth educators' attention in preparation of serving adult learners.

Most of the research to date investigating the online student experience has focused on teaching and pedagogy. Knowles (1950) offered 11 principles of adult teaching, not all of which are relevant to this particular study. Five principles in particular align with other topics throughout this review of the literature, including the development of a friendly and informal learning environment, the assumption that students want to learn, the recognition and use of the students' experience in learning activities, the allowance of students to learn at their own pace, and the assurance that the student is aware of their progress and accomplishment (Knowles, 1950). Similarly, Merriam and Bierema (2014) suggested that adult online learners must have both technical skills and open attitudes toward online learning, be prepared for and interested in learning and pursuing education, and most importantly should belong to online communities that encourage positive and social interactions, indicating that Knowles' research is still applicable today.

Following Knowles' initial work, adult education theorists around the world began studying and developing the theory of adult learning. At the same time as the expansion of research, we saw increased government spending towards adult education (Knowles, 1970), acknowledging a trend worth our nation's attention. In 1970, Knowles

introduced the concept of andragogy as "the art and science of helping adults learn" (p.

38). He explained that the concept of andragogy recognizes that adult learners possess

unique characteristics that require different techniques, principles, and strategies than

those used to teach children, known as pedagogy. He went on to explain that:

> Andragogy is premised on at least four crucial assumptions about the
> characteristics of adult learners that are different from the assumptions about child
> learners on which traditional pedagogy is premised. These assumptions are that,
> as a person matures, 1. His self-concept moves from one of being a dependent
> personality toward one of being a self-directing human being; 2. He accumulates
> a growing reservoir of experiences that becomes an increasing resource for
> learning; 3. His readiness to learn becomes oriented increasingly to the
> developmental tasks of his social roles; and 4. His time perspective changes from
> one of postponed application of knowledge to immediacy of application, and
> accordingly his orientation toward learning shifts from one of subject-
> centeredness to one of problem-centeredness. (Knowles, 1970, p. 39)

This set of assumptions is applicable to modern-day adult learners given the self-directed

nature of online learning, which allows students the opportunity to utilize and build on

existing skills from the workplace, apply new skills to their work immediately, and

continue to find motivation in their identity and goals other than ones related to

education.

However, Merriam and Bierema (2014) outlined various critiques of andragogy

that must be acknowledged. First, the research exploring Knowles' assumptions about the

characteristics of adult learners has delivered mixed results. Each of these assumptions

appears to be "situation-dependent," meaning that adults can be motivated or pressured to

pursue education for a number of reasons, some of which may not be intrinsic in nature,

and others may be completely rooted in the student's joy of learning for the sake of

learning. Second, in their review of many critiques of andragogy, Merriam and Bierema

(2014) cited that it over-generalizes a rather diverse population. The adults in Knowles'

studies were primarily White men from middle-class backgrounds who were educated

(Merriam & Bierema, 2014). Nonetheless, while adult learners tend to represent broad

diversity in age, gender, race, ethnicity, and purpose for pursing higher education, they

also tend to bring a common set of characteristics. Commonalities often include working

full or part time, caring for dependents or aging family members, being financially

independent, and overall taking on more roles in their lives than traditional-aged students

(Bourdeaux & Schoenack, 2016). Many of these characteristics overlap with those of

distance students, who are utilizing technology to access higher education when they

want and from where they want while managing various other aspects of their lives. The

fact that online education primarily serves adult learners is evidence of the commonalities

in the two student populations. Many researchers have written about the diversity of adult

learners and the many identities they bring with them as a response to the historically

homogenous definition of andragogy (Bronte, 1997; Nesbit, 2005). Studies that have

brought a more inclusive perspective to the field of andragogy have both challenged and

extended the work of Knowles and given researchers a more stable foundation from

which to explore issues related to adult learner success.

In a long-term study of careers, Bronte (1997) interviewed 150 people and found

that more than half of participants experienced their most creative period of life at the age

of 50, closer to retirement than initially thought. Three distinct groups surfaced in this

study of adults. Homesteaders, who stayed in the same career throughout their lifetime,

had all chosen careers that held significant intrinsic variety. Transformers were those who

had made one major career change at some point in their lifetime. The causes for the one-

time shift varied, including being let go from an existing job, revisiting earlier career

aspirations, or simply wishing for a change. The third group that emerged, explorers, were those who appeared to experience growth in each career by mastering it, then moving on to find a new challenge. Explorers experienced multiple career changes throughout their lifetime. This study demonstrated the diversity in which adults experience and change careers and concluded that as life expectancies lengthen in society, education will become a recurrent activity. Continuing to serve individuals at different stages of life and with unique and varied motivations for seeking education demonstrates the diversity of the adult learners we serve in higher education. Another key difference that exists among adult learners is social class, which is responsible for constructing unique barriers to education.

In a review of the literature addressing socially constructed identities and adult education, Nesbit (2005) found that the topic of social class was often absent from the conversation. He insisted that "although social class is rarely evident in adult education discourse, no one should doubt its existence" (Nesbit, 2005, p. 12), indicating that exclusion of the topic in research does not translate to an absence of social class diversity in adult learners. Securing economic stability and becoming more engaged citizens, Nesbit pointed out, are the results of expanded access to education for many adult learners. Differences in social class often come with contrasting access to money, mobility, and encouragement to pursue higher education.

As adult learning theory literature continues to include more diverse learners, we find an overarching concept that encourages practitioners to honor each student and the experience they bring with them into the learning environment. Adult learning theory will continue to be a significant guiding framework as support of adults, especially ones

studying online, evolves into proactive and scaffolded support that aims to gradually allow learners to hold themselves accountable for learning and success in the classroom (Brindley, 2014). While research on adult and online learner success often points to various external variables and challenges for adult and online learners, we know that online learner retention, similar to that of on-campus student retention, is affected by internal variables as well. Internal variables can include self-esteem, sense of belonging, and ability to connect to peers, faculty, and staff (Merriam & Bierema, 2014), which tend to be more difficult for adult learners to address when studying at a distance. Combining adult learning theory with research on college student retention and persistence provides a conceptual framework and foundational understanding of uniqueness among college student populations. The retention and persistence of adult and online learners is worth further exploration, both from a research perspective and in search of practical strategies to ensure institutions can support the increasingly diverse population that online learning is attracting.

Retention and Persistence Theory

Adult learners will choose to leave an institution if the environment is not suitable for their need for autonomy (Knowles, 1970). To better understand how adult and online learners can be retained and encouraged to persist through graduation, the research on retention and persistence at the postsecondary level related to traditional students must be explored on a basic level. This section identifies key pieces of literature focused on retention and persistence of all students, then shifts focus to the target population of this study, adult and online learners. It is worth noting that the literature on retention and

persistence often includes the inverse concept of attrition, which is threaded throughout this section as well.

In his own review and synthesis of empirical literature, Spady (1970) identified two operational definitions of college dropout that are generally accepted. The first includes anyone leaving the college in which they are registered, and the second includes anyone who has enrolled but never received a degree from any college. While the first definition is easier to track and assess and is often cited as the definition in studies and literature, the second is a more accurate representation. The second definition acknowledges the nature of modern-day students to enroll in and depart from multiple institutions before completing their degree. This is especially relevant when approaching retention as a national problem across many institutions. Knowles (1950) claimed that the purpose of higher education is to "produce mature people, and through them, a mature society" (p. 8). If this is true, then we must recognize that where a student graduates from is not as meaningful as whether or not they do in fact graduate. Researchers cannot ignore that students will enroll and withdraw until they find a place or time in which they can succeed. As Spady (1970) pointed out, "Given the diversity and range of institutions of higher education in the United States, mobility between institutions and availability of alternative colleges certainly play a role in the attrition process" (p. 66). Almost 50 years later, that holds true as the market has expanded with advances in technology streamlining distance education. Today, students have more options than ever, which makes the tracking of retention and attrition far more difficult.

According to the Integrated Postsecondary Education Data System (IPEDS), completion of a degree is only reported and tracked by the institution in which the student

received a degree from (U.S. Department of Education, n.d.). For example, a student may

be counted in attrition data at one institution, but if they have re-enrolled elsewhere and

found success, they will be counted in retention and completion data at a second

institution. This student would remain a point of failure for their first institution, when in

reality the student did end up succeeding, though it was elsewhere. Historically,

institutional retention and attrition were seen as an academic issue; however, Spady

(1970) made the bold statement that both "academic and social systems of the university

are regarded as important frameworks from which the dropout process must be

examined" (p. 64). His work helped to lay the foundation for future retention theorists,

such as Vincent Tinto and Alexander Astin.

College Student Retention and Persistence

When American higher education was being established and education was

considered to be a privilege not accessible by all because of prohibitive costs and

unidentified need to attend (Cohen, 1998), it is likely that retention and persistence may

not have been concerns. However, the American higher education system became more

accessible with the addition of the Morrill Act of 1862, which granted state and federal

land to institutions seeking to provide education to all. As our paradigm has shifted and

we have continued to transform into a system that does not seek to weed students out,

college student retention naturally arose as a research area within education. In

examining the research around college student retention and attrition, three themes

surfaced as relevant to this study: the integration of the student into the institution, the

role of the institution in retaining students, and the intersection of those as a shared

responsibility.

While Spady (1970) was the first to state that universities must look at both academic and social structures when examining student retention, Tinto took that a step further. In his 1987 work *Leaving College: Rethinking the Causes and Cures of Student Attrition*, Tinto sought to develop a theory of student departure, exploring the character and causes of the phenomenon as well as the nature of successful retention programs. Tinto reported that approximately 44% of new college entrants were departing their first institution by the start of their second year in college. Of those departing, less than half transferred to other institutions; the rest left the system entirely at that time. Out of concern for those patterns, he introduced the concepts of academic and social integration as critical components of the retention, persistence, and completion of college students. Academic integration was described as students' connections to the intellectual aspect of college and social integration as students' connections and relationships outside of the classroom. Similarly, Astin (1994) explored questions around lack of community in the modern university, with a focus on causes, consequences, and possible solutions. He highlighted sense of community as a component of student attrition, which asserts that a lack of student community negatively affects a students' overall satisfaction with their college experience. He went on to state that "as a matter of fact, lack of student community has a stronger effect on satisfaction than any of the other 150 institutional characteristics that we included in our study" (Astin, 1994, p. 17). Astin found that a lack of community also impacted the academic development of many skills associated with the goals of higher education—critical thinking, writing skills, cultural awareness— confirming the potential effect on student persistence in a university environment. Spady, Tino, and Astin's theories centered on concepts of community, academic, and social

integration and are student-centric, focusing on the student and their opportunity to integrate into the campus culture in order to persist and succeed. The focus, however, should be on the institution's role and responsibility to decrease attrition by providing opportunities for students to find community.

At a fundamental level, it made sense to focus on the student as researchers began to explore issues with retention and attrition, but as studies progressed, researchers examined this phenomena with a critical eye. Nearly 25 years after his first book, Tinto (2012) published *Completing College: Rethinking Institutional Action,* in which he asserted that although access to higher education had more than doubled—from 9 million students in 1980 to over 19 million in 2011—overall graduation rates had barely improved. At this time, approximately 63% of incoming college students would complete a four-year degree. In light of this, Tinto emphasized the institution's role in helping students achieve with calls to action focused on organizational change and culture. He stated that institutions need to be "intentional, structured, and proactive in their pursuit of student success" (Tinto, 2012, p. 103), highlighting the need for collecting and analyzing student data, developing plans and interventions to enhance student support, and actively pursuing student success as an institutional goal.

Even with a shift to institutional responsibility, Tinto's work illustrated the existence of a systemic problem and how the student experience impacts persistence and completion. However, many critics of Tinto's work have pointed out that his models and theories cannot be effectively applied, nor are they inclusive of many marginalized student populations—students of color, students with low socioeconomic status, and non-traditional learners. As higher education continues to serve a more diverse population,

research in retention and persistence must be inclusive of the evolving demographic that

we strive to serve. Tinto himself outlined three limitations specifically of his model of

student disengagement from higher education: (a) insufficient emphasis of the role of

finances on student persistence; (b) inadequate differentiation of institutional transfer and

total withdrawal from higher education; and (c) absence of attention to the varying

experiences of students of different gender, race, and social status background (Tinto,

1982). In the same article, Tinto (1982) stated that we cannot be discouraged by existing

models that do not account for diversity in settings in which higher education takes place

but rather encouraged to explore other areas not yet adequately addressed by current

research. In response to Tinto's work, researchers emerged who primarily focused on

developing theory and models of retention that were inclusive of diverse populations (e.g.

Hurtado & Carter, 1997; Hurtado et al., 2010; Lane, 2016; Swail et al., 2003).

Subsequently, in search of models that were more inclusive and therefore

representative of an authentic student experience, researchers approached retention and

persistence by examining what lies at the intersection of student integration and

institutional responsibility, and using that information to develop models that can be

broadly applied across student populations. For example, Swail, Redd, and Perna (2003)

developed Swail's Geometric Model of Student Persistence and Achievement (Figure

2.2). In this model, academic, social, and institutional factors converge to create the

student experience. According to Swail et al., the triangle is representative of complex

internal processes that foster a student's ability to persist where the three sides of the

model "each represent a particular force on a student, represented by the area inside the

triangle" (p. 76). The area external to the triangle, Swail et al. pointed out, symbolizes the

outside variables that impact a student's development and decision making in college. The social factors listed in Swail's model include characteristics and backgrounds that students bring with them to their college experience, while the institutional factors cover the services provided by the college. The academic factors represent the intersection of student and institution as these factors are often the result of students realizing gaps in their preparation for university studies and both the offering and utilization of institutional services to develop the skills needed to succeed.

Figure 2.2

Swail's Geometric Model of Academic, Social, and Institutional Factors Impacting Student Persistence and Achievement
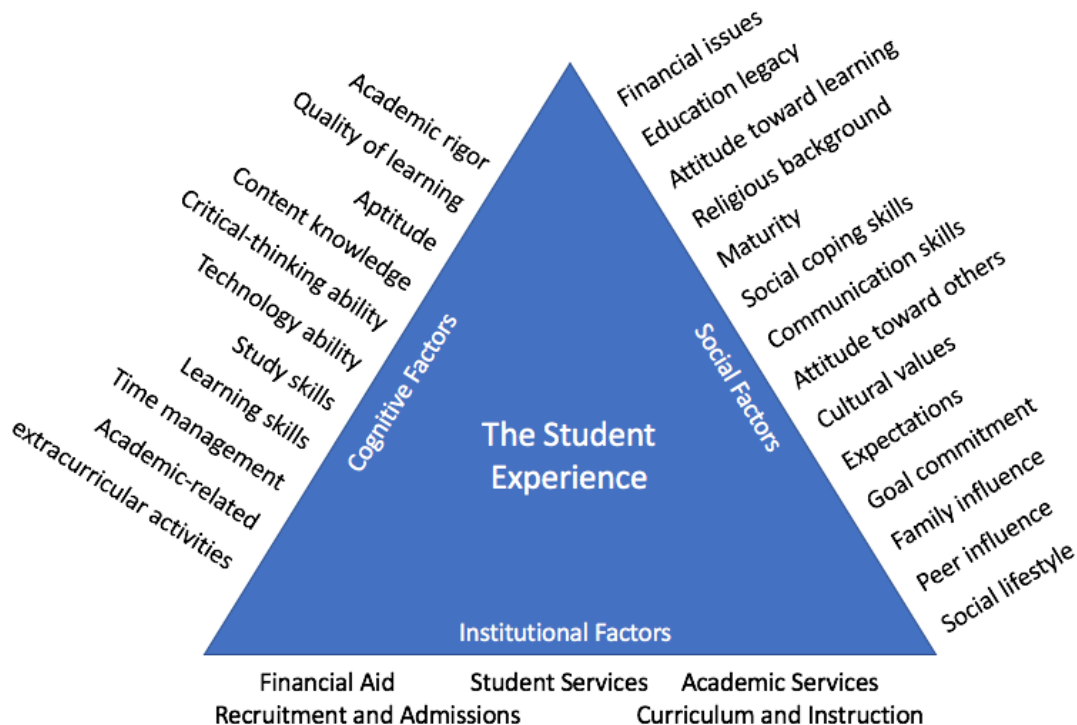
Note. From *Retaining Minority Students in Higher Education: A Framework for Success*, by W. S. Swail, K. E. Redd, and L. Perna, 2003, Wiley, p. 77. Copyright 2003 by Wiley Periodicals. Reprinted with permission.

Swail's model was intended to help practitioners understand student persistence, the factors that interact to support or hinder persistence, and how the institution is involved in the process that leads to retaining students. In this model, student persistence is achieved when the student is in equilibrium, meaning that the forces of academic, social, and institutional factors are balanced to provide opportunities for growth and development resulting in persistence. Attrition therefore occurs when the student is not in equilibrium. The triangle is almost never truly equilateral, according to Swail et al. (2003), as each student is unique in their needs requiring the model to shift and evolve in many ways while still providing balance for that individual student to persist in their education. Swail's model, however, fails to acknowledge that persistence, often associated with success, is defined and experienced very differently by students from various backgrounds. The exploration of how students define and experience success in higher education is pertinent to retention, persistence, and attrition studies as they often seek to identify models that apply generally to populations.

One study by Yazedjian, Toews, Sevin, and Purswell (2008) elicited students' definitions of success in college and discovered three themes in their study of 22 second-year students—good grades, social integration, and the ability to navigate the college environment. Implications cited in this study include the institutional commitment to providing services that support students' academic success as well as promote personal development and social integration. Personal development and social integration in this specific case should include opportunities for students to develop meaningful relationships with peers that will support rather than hinder academic success and encourage students to develop mentoring relationships with upperclassmen. Other studies

have found that student engagement in educationally purposeful activities can positively

impact academic outcomes and persistence of first-year college students (Kuh et al.,

2008; Tinto, 2012).

Models for college student persistence and attrition are deeply researched and

well established, but often they are focused on traditional-aged students in face-to-face

learning environments. The literature has identified many variables that contribute to

retention, but this section is focused on the concepts of academic and social integration,

institutional responsibility, and the intersection of student and institution responsibility in

creating conditions that will influence retention. As we shift to focusing on distance

students, we see that variables influencing online student retention and persistence can

vary both in presence and manifestation (Boston et al., 2011). Boston et al. (2011)

acknowledged that "part-time and adult learners may have different factors than full-time

traditional age students that affect engagement and persistence in higher education" (p.

3). While much of the research on college student retention started long before online

education became commonplace in higher education, online learning is considered to be

one of many settings that characterizes modern higher education and therefore should be

present in the research on college student retention. As online education has continued to

grow, literature on retention and persistence of college students has broadened to include

research on adult and online students.

Online Student Retention and Persistence

Most research on retention and persistence in higher education has been

conducted on traditional students entering college for the first time soon after completing

high school. However, the development of online programs and technology have allowed

broader populations of students, primarily those classified as adult learners (Merriam &

Bierema, 2014), to pursue higher education at different points in their lives. While

traditional-aged college students are of adult age by law, the literature primarily classifies

adult learners as older than average students who have multiple demands on their time

outside of school (e.g., family, work, etc.). Attrition rates for students taking online

courses are 10-20% higher than those learning in a face-to-face environment (Angelino et

al., 2007; Frankola, 2001; Herbert, 2006). Frankola (2001), who explored online learning

in a corporate training context, found that factors leading to drop out included lack of

support, individual learning preferences, poorly designed courses, lack of motivation, and

inexperienced instructors, among others. Accordingly, Shelton and Saltsman (2015)

analyzed current research and found that many factors contributed to attrition in online

education, including busy lives outside of school, lack of experience with online

education or higher education in general, low GPA's, age, and number of previous

courses taken online. However, in a study that sought to identify significant variables

impacting online retention, Herbert (2006) found that students ranked faculty

responsiveness to student needs as the most important variable impacting success in the

course. This finding demonstrates that regardless of course modality, students still expect

faculty to interact with them and support them and further confirms that connections to

faculty can contribute to student retention. It is obvious that the research into online

student retention and attrition highlights both student and institutional variables.

Literature on attrition of online students generally has examined why they leave,

when they leave, and what can be done to prevent them from leaving. This review

focused on why they leave and how to prevent departure as they align most closely with

this study of belonging in online students as a mechanism for retention. A persistence study conducted with online students found that the top reason they were not successful in their online course was that they got behind and found it too difficult to catch back up (Fetzner, 2013). The following reasons in order of importance were personal problems (health, job, caring for others), combined workload of coursework and life, dissatisfaction with online format, lack of alignment with instructor's teaching style, technical difficulties, the amount of time it took to focus on coursework, lack of motivation, registering for too many courses at once, and the course being too difficult (Fetzner, 2013). This same study found that almost a third of the students indicated they would not likely take another online course in the future, demonstrating an existent problem with retention of online students.

In a study guided by Tinto (1987) and Bean's (1980) retention models to research the needs of online learners, Rovai (2003) developed the composite persistence model for online students. In addition to using other retention models for guidance, Rovai also considered the skills required for online students to succeed. This model considers characteristics present prior to admission and after admission to predict student persistence. Characteristics identified prior to admission include student demographics, prior academic performance and preparation, and student skills (e.g., time management, computer literacy, etc.). Those present after admission include both internal factors— levels of academic and social integration, self-esteem, accessibility to services, study habit, and stress—and external factors—employment, family responsibilities, and outside support. Theoretically, institutions using this model can identify students at risk of dropping out, determine practical interventions, and effectively decrease student attrition.

In *Motivating and Retaining Online Students: Research-Based Strategies That Work,* Lehman & Conceicao (2014) laid out common reasons for online student attrition and how those reasons affect students. Most notably, at the top of the list is physical separation, which affects students by fostering feelings of isolation and disconnection. Other reasons of note related to the topics outlined here were lack of intrinsic and extrinsic motivation, lack of faculty contact, and lack of clarity in direction, all of which could be addressed with the right interventions.

Often the concepts of retention and persistence are interchanged with the term "student success." Many studies have continued to conceptualize student success in college primarily in terms of grades and completion rates (Yazedjian et al., 2008); however, these explanations fall short for online learners. Kuh et al. (2007) broadly defined student success as including academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational objectives, and post-college performance. This definition aligns well with the goals of adult and online learners as they are often less focused on grades received but more on the knowledge and experience attained and the perceived value added to their lives and potentially careers. For example, one study concluded that online students' initial attempt at enrolling in higher education may be more exploratory than the traditional goals of completion that we see in on-campus students (Boston et al., 2011). The idea that students more often test out online education is one reason that attrition rates may be higher when comparing online and on-campus students. Enrolling in an online program is an effective way for students to determine if they can achieve success studying from a distance and whether or not they

believe they will get value from the experience. Whatever the impact this trend has on attrition rates, strategies for decreasing overall attrition in online education must be explored.

In an effort to look more deeply at online attrition rates, Angelino, Williams, and Natvig (2007) conducted an integrative literature review and provided four major strategies for decreasing attrition in online classes—student integration and engagement, learner-centered approaches, learning communities, and accessible online student services—that demonstrate the need for institutions to engage students early, often, and with intentionality. Student integration and engagement, which aligns with Tinto's (1975) theory of retention, can be achieved through faculty and student communications, online student services, and other contacts through email, phone, and online spaces. Learner-centered approaches are rooted in constructivist strategies that allow more active forms of teaching and more engaging review of curriculum. Learning communities are described as spaces where students can work together, connect over experiences, and support each other as they encounter challenges common to distance students. Finally, accessible online student services represent resources that are offered to distance students from afar and available at their convenience. There is significant attention in online education given to the support services that truly meet the needs of this unique population and that remove barriers to processes and practices that were built to serve on-campus populations. These four strategies appear often in the research exploring distance student attrition, and all have a role in fostering a sense of belonging among distance learners.

However, literature focused on the lived experiences of online students in respect to their persistence is not as common but is just as valuable. In a longitudinal study of 20

first-time distance students, researchers used a mixed method approach over three phases

to gather insights on their lived experiences (Brown et al., 2015). While the researchers

found that not all students were open to utilizing support services, they encouraged

institutions to find strategies that discourage students from taking a "lone wolf approach

to distance study" (Brown et al., 2015, p. 12). Furthermore, Brown et al. (2015) stated:

> To build a stronger sense of belonging or relatedness with students distributed at a
> distance, the research findings suggest that there is value in institutions supporting
> opportunities for first-time distance learners to engage in a variety of different
> online places and spaces for learning and knowledge generation. (p. 12)

The implication of offering various and diverse opportunities for students to connect with

each other and institutional personnel is particularly interesting for those who explore

belonging as a tool for retention.

Literature in retention and attrition of online students has tended to focus on

examining why they leave, when they leave, and what can be done to prevent them from

leaving. While predicting adult and online learner success is difficult, Boston et al. (2011)

urged that "it is imperative that a model of prediction concerning student retention in

online learning is found to assist institutions across the higher education community in

preventing attrition and advancing student persistence, therefore setting the path for

matriculation" (p. 4). Strategies cited in the literature to mitigate high attrition rates in

online learners have included social integration, sense of belonging, online student

support services that include learning communities and online orientations, and faculty

and peer engagement (Angelino et al., 2007; Bawa, 2016; Boston et al., 2011; Perna,

2010; Shelton & Saltsman, 2015). Sense of belonging, however, is an aspect of the online

learner experience that has not received much attention in the research. As a rather large

element of student retention in traditional learners, it warrants further investigation in the context of distance education.

Sense of Belonging

The learning climate is particularly important to adult learner success. Knowles (1970) stated that "even more importantly, the psychological climate should be one which causes adults to feel accepted, respected, and supported" (p. 41), and he went on to specifically list that a friendly and informal atmosphere where a student is known by name and valued as a unique individual is critical. The construct of belonging has been discussed throughout higher education literature using various terms, including *community* (Astin, 1994; Blanchard & Markus, 2002; Conrad, 2005; McMillan & Chavis, 1986; Phirangee, 2016; Phirangee & Malec, 2017); *climate* (Ancis et al., 2000; Cabrera et al., 1999; Cress, 2008; Hurtado & Carter, 1997; Johnson et al., 2014; Rankin & Reason, 2005; Yosso et al., 2009); *social integration* (Tinto, 1982, 1987, 2012); and *marginality and mattering* (Maslow, 1954; Rosenberg & McCullough, 1981; Schlossberg, 1989), but almost all definitions include a sense of feeling noticed, valued, and cared about. Other terms or labels used in the literature include belongingness, relatedness, membership, acceptance, support, and affiliation (Strayhorn, 2012). The literature on sense of belonging reviewed for this study relies on seminal works from Maslow, Tinto, Schlossberg, and Strayhorn to define the construct, to identify how students may experience it, and to demonstrate how it impacts retention and persistence of college students. Next, this section highlights newer studies that have expanded this foundational work on sense of belonging in adult and online learners.

To understand sense of belonging at a foundational level, we refer to Maslow's

hierarchy of needs (1954), shown below in Figure 2.3. This model has been cited

throughout literature on student success and mattering. In his model, Maslow identified

five levels of needs that humans seek to satisfy—physiological, safety, belongingness and

love, esteem, and self-actualization. Maslow claimed that people move through levels

sequentially from the bottom to the top. When physiological and safety needs are met,

individuals will then be able to focus on satisfying their need for belongingness and love.

Within that need, intimate relationships, friends, and connections to community are

necessary for one to achieve satisfaction and move forward on the path to achieving one's

full potential, whatever that may be. The concept of belongingness outlined by Maslow is

closely related to the concept of mattering.

Figure 2.3

Maslow's Hierarchy of Needs
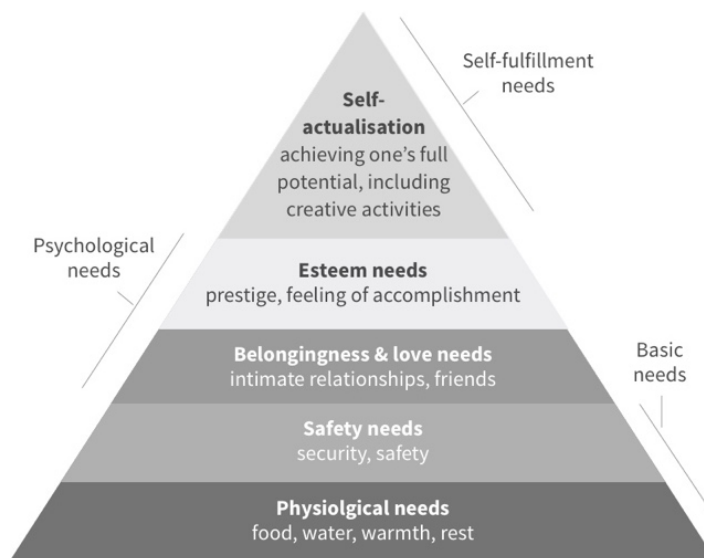
Note. Reprinted from "Maslow's Hierarchy of Needs", by Chiquo, 2019, Wikipedia
(https://commons.wikimedia.org/wiki/File:Maslow%27s_Hierarchy_of_Needs.jpg). CC BY-SA 4.0.
Adapted from *Personality and Motivation* (1st ed.), by A. H. Maslow, 1954, Longman.

Mattering is a concept found in early literature and is described as the "direct reciprocal of significance" (Rosenberg & McCullough, 1981, p. 163), meaning that a sense of mattering is achieved when one feels they are significant in this world. More specifically, Rosenberg and McCullough (1981) stated that mattering is a feeling that: (a) one is the object of another's attention; (b) one is important to another; and (c) one is depended on by another. Further, they asserted that "mattering represents a compelling social obligation and a powerful source of social integration: we are bonded to society not only by virtue of our dependence on others but by their dependence on us" (Rosenberg & McCullough, 1981, p. 165). As a source of social integration and a concept related to sense of belonging, mattering is worth paying attention to in the conversation around online student retention. Adult and online learners, unlike traditional on-campus students, will experience mattering in various aspects of their life, but our focus here is on how they experience mattering as they socially integrate into their institution or ,in other words, experience a sense of belonging to the university.

Social integration, which Tinto (1987) described as students' relationships outside of the classroom, or in the distance student's case, outside of their coursework, is a critical component to belonging. Widely spread criticism of Tinto's early work on social integration highlighted the absence of consideration for students from different backgrounds and experiences. For example, students studying from a distance have less of an opportunity to socially integrate into their institution because they are so deeply ingrained in their own lives outside of school, making it difficult for distance students to connect to peers within the university. The complexities of social integration for many populations create unique barriers for each group. However true these critiques of Tinto's

theories are, Schlossberg (1989) pointed out that "even with our differences, we are

connected by the need to matter and the need to belong" (p. 14). This demonstrates how

the need to belong may be constructed differently and satisfied in much more complex

ways for those from different backgrounds and justifies further exploration into the

concept of belonging for unique populations.

Described more broadly and inclusively than Tinto's theory of academic and

social integration, Schlossberg (1989) introduced her theory of marginality and mattering,

defined in the context of the university student experience. She defined mattering as the

feeling that others are interested in us, depend on us, and are concerned about us.

Marginality is in conflict with mattering in that it is the absence of acceptance and often

leads to confusion about where and to which group(s) we belong. Building on Rosenberg

and McCullough's (1981) work on mattering as a foundation, Schlossberg incorporated

four aspects of mattering—attention, importance, ego-extension, dependence—into her

work exploring how mattering was experienced in various settings. In her own research,

she discovered a fifth aspect—appreciation—to add to the construct of mattering.

Attention was described as feeling that one draws the interest and notice of another

person and importance as the belief that someone else cares about our thoughts, desires,

and actions or is concerned with our fate (Rosenberg & McCullough, 1981). Ego-

Extension was explained as the feeling that our accomplishments and failures will foster

pride or sadness, respectively, in others (Schlossberg, 1989). Dependence was the sense

that both our behaviors and actions are influenced by our own dependence on others and

their dependence on us (Rosenberg & McCullough, 1981). Finally, Schlossberg stated

that appreciation acknowledges the importance of feeling that our efforts are appreciated by others.

Similarly, McMillan and Chavis (1986) identified a broad definition of sense of belonging as "a feeling that members have of belonging, a feeling that members matter to one another in the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). This definition consists of four elements: (a) membership, a sense of relatedness to a group; (b) influence, a mutual sense of mattering between the group and individual; (c) integration and fulfillment of needs, the sense that a members' needs are being met as a result of membership to the group; and (d) shared emotional connection, the belief that members have or will share a history, place, or experience together. The authors' description of belonging connects aspects of importance, dependence, and ego-extension to membership, influence, and shared emotional connection respectively. These themes continue to appear in contemporary studies of belonging in college students.

In *College Students' Sense of Belonging: A Key to Educational Success for All Students*, Terrell L. Strayhorn (2012) shared his working definition of sense of belonging that referred to "students' perceived social support on campus, a feeling or sensation of connectedness, the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group (e.g., campus community) or others on campus (e.g., faculty, peers)" (p. 3). Strayhorn also laid out seven core elements of sense of belonging:

1. Sense of belonging is a basic human need.

2. Sense of belonging is a fundamental motive, sufficient to drive human behavior.

3. Sense of belonging takes on heightened importance (a) in certain contexts, (b) at certain times, and (c) among certain populations.

4. Sense of belonging is related to, and seemingly a consequence of, mattering.

5. Social identities intersect and affect college students' sense of belonging.

6. Sense of belonging engenders other positive outcomes.

7. Sense of belonging must be satisfied on a continual basis and likely changes as circumstances, conditions, and contexts change. (pp. 18-23)

Adults learners, especially those studying from a distance, fit into the social contexts that Strayhorn referred to. While Strayhorn did not include a chapter in his book about sense of belonging in adult or online learners, some insights can be translated from his work to address this unique population. Building from Maslow's hierarchy of human needs, Strayhorn reasons that "if sense of belonging is a basic human need, then it also is a basic need of college student" (p. 18), then it can be assumed that it is a basic need of adult and online learners as well. The satisfaction of this basic need drives and motivates other behaviors. In the context of higher education, students who have developed a sense of belonging can shift focus to achieving academic success.

Strayhorn (2012) goes on to cite many times in his work that this human need to belong takes on varied and heightened importance in situations where individuals or groups may feel especially unsupported or unwelcomed. This is particularly true for certain groups, at certain times, and in certain contexts. It is reasonable to assume that adult learners studying online fall into this category, where the need for belonging may be different or heightened. Mattering—a related concept discussed earlier in this

section—is a concept that Strayhorn connected to belonging in his core elements. This inclusion of mattering connects well with adult learners and their expectation that faculty be responsive to their needs (Herbert, 2006; Lehman & Conceicao, 2014). Strayhorn did, however, acknowledge that social identities affect belonging and that although the need to belong is universal, it does not equally apply to all people. He asserted that social identities, such as race/ethnicity, gender, and class, "converge and intersect in ways that simultaneously influence sense of belonging" (Strayhorn, 2012, p. 22). This is something to be aware of as the population pursuing online education continues to expand and diversify. When the need for belonging is satisfied, Strayhorn insisted that positive outcomes—engagement, achievement, wellbeing, and happiness—are achieved as well. Research has demonstrated that sense of belonging at the university positively influences persistence intentions (Hausmann et al., 2007), which is arguably a positive outcome. Strayhorn stated that "the goal is to develop campus environments that foster sense of belonging so students feel 'stuck' to others on campus, to such a degree that severance of those bonds not only seems difficult and unpopular but impossible" (p. 22). This translates well to online learning environments in which we seek to develop inclusive environments where distance students build connections that extend beyond the classroom. This leads to Strayhorn's final core element, that of continual satisfaction with belonging as circumstances, conditions, and contexts change. Distance students' engagement is most represented through their participation in coursework, which lasts 10–16 weeks, depending on the institution. This highlights the need for universities to create online spaces and connections for distance students outside of their coursework, where they can continue to satisfy their need for belonging without interruption at the end

of a term or semester. We know that if universities can devote resources—time, money,

and personnel—to the concerns of adult learners and provide relevant and adequate

services that address their need for belonging and community, students will feel

connected and involved, often leading to success (Schlossberg, 1989).

　　　　While the work of Tinto, Schlossberg, Strayhorn, and others focused on the

impacts of belonging among traditional on-campus students, their models and findings

serve as the foundation for which social integration, mattering, and belonging can be

explored in the context of other student populations. Newer studies have expanded on

their work to explore these concepts in the online learner population. For example, in a

multi-year study of an online graduate student cohort, Conrad (2005) found that

community is critical to the success of distance learners and defined that community as

connection, belonging, and comfort among members of the group who are working

towards a shared purpose or common goal. She went on to state:

> The creation of community simulates for online learners the comforts of home,
> providing a safe climate, an atmosphere of trust and respect, an invitation for
> intellectual exchange, and a gathering place for like-minded individuals who are
> sharing a journey that includes similar activities, purpose, and goals (Conrad,
> 2005, p. 2).

In her study of online learners in a large Canadian university that offered both face-to-

face and distance education, she found that learners considered community to be an

important component to their learning. Conrad concluded that "community grows; it is

not made or given" (p. 17), indicating that faculty, staff, and administrators cannot give a

sense of belonging to students, but they can pay careful attention to the design and

facilitation of online learning in their institutions and create environments where

community can grow and be sustained.

Beck and Milligan (2014) framed sense of belonging in terms of institutional commitment and outlined nine factors of the distance student experience that influence that commitment. These nine factors were cited as being statistically related to retention, and at the top of the list is academic and social integration. In their study, the researchers used the College Persistence Questionnaire (CPQ), which includes measures of student backgrounds and student experiences. Within student experience is a section on social integration meant to measure sense of belonging, shared values, and positive involvement behaviors. Beck and Milligan found that the student experience measures predicted institutional commitment far better than the student background indices, meaning that educators' inclinations to blame student characteristics for lack of preparedness are inherently wrong. Social integration was found to be statistically significant in determining institutional commitment; however, the most significantly associated indices were academic integration and degree commitment, which is not surprising given what we know about adult and online learners' motivations for returning to school.

Two additional prominent areas of literature related to sense of belonging in adult and online learners are social presence and self-determination theory. Social presence is defined most succinctly as "the degree to which a person is perceived as a 'real person' in mediated communication" (Gunawardena & Zittle, 1997, p. 9). According to Aragon (2003), when students participate in online learning, the physical and geographic distance they experience diminishes their ability to establish interpersonal relationships with other students because their interactions are entirely online. Gunawardena and Zittle found that a strong predictor of student satisfaction in online environments was social presence, which is believed to be one of many that contribute to fostering a sense of belonging and

community among distance learners. While social presence is a valuable part of the conversation around fostering a sense of belonging in online learners, it is reasonable to assert that students are also craving presence and interaction outside of the learning management system but still within the institution.

Research on self-determination theory in online education is worth noting in this literature review as connections to belonging are evident. According to Deci and Ryan (1985), self-determination is described as the capacity that one has to make choices and to determine their own actions. Similar to Maslow's hierarchy of needs, self-determination theory suggests that we have three universal and basic needs—autonomy, competency, and relatedness—that when satisfied allow us to achieve improved psychological well-being. Relatedness includes feeling included and connected with others, which is closely related to belonging. Self-determination theory is used as a theoretical framework in Chen and Jang's (2010) study that proposed and tested a model for online learner motivation. The researchers chose this theory because the three basic needs of autonomy, competency and relatedness corresponded to aspects of online education such as the flexible nature of online learning, the use of computers to aid in communication and social interaction, the challenge of learning new technology, and the idea that contextual support is needed from faculty, staff, peers, and technical support personnel. Chen and Jang asserted that previous research has demonstrated that self-determination theory can predict a number of learning outcomes, including persistence, and has the potential to address student attrition in online education.

Sense of belonging and other similar concepts, while well documented throughout the literature on college student success, have not been as prevalent in studies of adult

and online learners. Many institutions serving distance students have sought out practical

strategies to increase retention, but they have failed to recognize the influence sense of

belonging can have on student retention. Analyzing the problem of poor retention rates of

online learners through the lens of belonging has the potential to help educators

understand the needs of their distance students.

Sense of Belonging as a Theoretical Framework

Studies have shown that students' sense of belonging in academic environments

can impact their experience and therefore persistence (Beck & Milligan, 2014; Brindley,

2014; Ferdousi, 2016; Hurtado & Carter, 1997; Kuh et al., 2008; Ludwig-Hardman &

Dunlap, 2003; Morrow & Ackermann, 2012; O'Keeffe, 2013; Schlossberg, 1989;

Strayhorn, 2012; Willging & Johnson, 2009). Many scholars have called for further

investigation into how sense of belonging impacts adult learners, what services might

increase sense of belonging, and how students experience this construct in online

learning.

For the purpose of this study, Strayhorn's (2012) framework for belonging has

been used to guide the research. Strayhorn's framework was chosen for this study

because it was developed with a diverse perspective of who our students are, what sorts

of backgrounds they bring with them to the university, and the emphasis of context on

belonging. Specifically in his seven core elements of belonging, Strayhorn insisted that

belonging is a consequence of mattering and that its importance varies at certain times

and among certain populations, both of which relate to adult learning theory.

Strayhorn's (2012) definition of sense of belonging has also been used in this

study, specifically in qualitative data analysis to compare how students themselves

describe the construct of belonging as an online learner. In terms of college students,

Strayhorn defined sense of belonging as "students' perceived social support on campus, a

feeling or sensation of connectedness, the experience of mattering or feeling cared about,

accepted, respected, valued by, and important to the group (e.g., campus community) or

others on campus (e.g., faculty, peers)" (p. 3). This definition pulled in many themes

from the literature reviewed around community, mattering, and belonging and is the most

inclusive of adult and online learners, representing a good fit for this study. In his

definition, Strayhorn (2012) also acknowledged the roles of the campus community as

well as faculty and staff in fostering a sense of belonging among students.

Distance students utilize resources differently to connect with peers, faculty, and

staff, all important in developing a sense of belonging to the institution. In a study

exploring the cause of attrition as well as potential solutions, O'Keeffe (2013) stated that

"a sense of connection can emerge if the student has a relationship with just one key

person within the tertiary institution and this relationship can significantly impact upon a

students' decision to remain in college" (pp. 607–608). Additionally, it has been

recommended that universities create meaningful opportunities for students to connect

socially and one-on-one with others at the institution (Slaten et al., 2014), including

faculty and staff, in an effort to increase feelings of belonging. Even Malcom Knowles in

1950 stated that "good program building is a matter of understanding what each

individual really needs and wants, and being skillful in creating opportunities in which

people will find the satisfactions they seek" (p. 11). To increase retention of distance

learners, institutions will need to explore ways to facilitate these types of connections in

pursuit of fostering a sense of belonging among students. Furthermore, institutions will

need to have an understanding of how to measure sense of belonging as well as the

aspects of the student experience that may impact belonging.

How Sense of Belonging is Experienced and Measured

Research relating sense of belonging to postsecondary students has stated that

when a student feels a sense of belonging in a particular class or *class belonging*, they

feel more confident and motivated to accomplish success in that class (Freeman et al.,

2007). The authors asserted that this is demonstrated by increased participation in class

discussions and a higher level of mastering the material presented in the class. More

broadly, research has shown that instructor presence (Sithole et al., 2019), active course

facilitation and management (Martin et al., 2019), and faculty satisfaction (Stickney et

al., 2019) are all critical to quality online programming. In a study exploring expectations

and challenges for faculty teaching online courses, Sithole et al. (2019) stated that "social

presence of the instructor throughout the course is considered one of the most important

aspects of online instruction, especially when it comes to keeping the online students

connected to the class" (p. 69). Sithole et al. went on to assert that delayed feedback and

response times lead to discouragement and attrition for distance students. It is reasonable

to suggest that students notice a lack of instructor presence and interpret this as a message

from the faculty, and sometimes the institution, that they don't matter.

In addition to class belonging, another concept explored by Freeman et al. is that

of a broader sense of belonging on campus, or *university-level belonging*, and they found

that students' social acceptance was a significant positive predictor of a sense of

university-level belonging. Furthermore, the results from their study indicated "that

students' sense of social acceptance, by both fellow students and university personnel,

might be the most important variable in relation to the sense of belonging" (Freeman et al., 2007, p. 216). Similarly, by analyzing survey data from 272 respondents at 127 colleges, Hurtado and Carter (1997) found that students who frequently participated in discussions around course content and engaged in conversation with faculty members were more likely to experience a sense of belonging. Another study discovered four domains in which undergraduate students came to experience sense of belonging at the university—valued group involvement, meaningful personal relationships, environmental factors, and intrapersonal factors (Slaten et al., 2014).

The practice of measuring belonging in students, however, has been harder to solidify over the years. Hausmann et al. (2007) stated that the "sense of belonging is most often implied as the result of social and academic integration, rather than specified and measured as an independent construct" (p. 806). In exploring literature on belonging, this is not only accurate but demonstrates a larger need for the construct of belonging to be studied as it relates to student persistence and completion.

Multiple instruments have been developed to measure sense of belonging, yet there appears to be no clear consensus on which one provides the most accurate data. Most notable in the literature are the social connectedness scale (Lee & Robbins, 1995), the Belonging to the University Scale or BUS (Karaman & Cirak, 2017), and the University Belonging Questionnaire or UBQ (Slaten et al., 2018), which have all been used to evaluate this construct specifically with college students. All of these instruments measure aspects of belonging, such as university affiliation, faculty and staff connections, peer interactions, and general feelings of fitting in. However, there are other instruments that have been modified for use in university settings though they are not meant

particularly for adult learners, such as the Psychological Sense of School Membership (Goodenow, 1993).

Conclusion/Summary

There is much to be gained if institutions can put forth the effort to truly improve the online learner experience, including their connection to the institution and its community. Schlossberg (1989) concluded that "institutions that focus on mattering and greater student involvement will be more successful in creating campuses where students are motivated to learn, where their retention is high, and ultimately, where their institutional loyalty for the short- and long-term future is ensured" (p. 14). Given the influence that sense of belonging can have on the online student experience and the stark difference in their experience compared to the traditional on campus student, it is reasonable to explore the construct of belonging in adult and online learners.

Much of the literature exploring sense of belonging in online learners has focused on academic integration and practices that can be used in the online classroom. While the literature on the Community of Inquiry model and presence in online courses abounds, a significant gap in the literature exists when exploring social integration, development of sense of belonging, or the relationship between perceptions of community and sense of belonging among online learners. Many articles have made note of further research needed to investigate factors or combinations of factors that lead to success and belonging of online learners (Masika & Jones, 2016). Slaten (2014) stated that it is unclear "how students actually conceptualize and define the construct" of belongingness (p. 2), further indicating an absence in the literature of work exploring how students themselves describe the experience of belongingness, especially those pursuing degrees

in the online environment. This study fills a gap in the literature by exploring the

construct of belonging within online learners—if they experience it, how they describe

that experience, if it matters to their satisfaction, persistence, and success, and what

aspects of the distance learner experience is fostered by the institution—as well as

determining and comparing their belonging scores through the use of a validated

instrument and their own perceived sense of belonging.

Chapter Three: Research Methods

Chapter 1 provides an introduction to the issues around retention and degree completion of online learners in a marketplace that is growing substantially quicker than traditional higher education. The chapter also introduces the construct of sense of belonging and its potential to impact the online student experience. Chapter 2 included a comprehensive review of the literature, focusing on three separate concepts—adult learning theory, retention and persistence theory, and sense of belonging—and an identification of gaps in the literature. Adult learning theory combined with retention and persistence theory served as the overarching conceptual framework for this study and sense of belonging as the theoretical framework. The problem of practice at the center of this study is the poor retention and support of online learners and the role sense of belonging plays in student retention.

The current research study examined sense of belonging to the institution in online learners: if they have a sense of belonging, how they've experienced belonging in online learning, if it matters to their satisfaction, persistence, and success, and what role the institution has played in fostering belonging. Furthermore, the purpose of this study was to identify the relationship between online learners' perceived and measured sense of belonging to justify further exploration into the phenomena of belonging in distance learners. This chapter presents the details of this research problem, overview of the purpose, research questions and hypotheses, and the methods that were used in this mixed methods study, including a description of the data used, instrumentation, and procedures for data collection and analysis.

Problem and Purpose

Online education is expanding at an unprecedented rate, and many institutions are struggling to envision how to best support the growing population of online learners. Retention rates for distance students are substantially lower than their on-campus counterparts (McClendon et al., 2017), as they are more likely to experience feelings of isolation and lack of motivation and self-direction. Increased retention and completion rates would translate directly to revenue for universities who are struggling to maintain funding levels while hopelessly trying to avoid the vicious cycle of annual tuition increases and cuts in government spending to support higher education. To address feelings of isolation, we turn to the construct of sense of belonging to identify how that manifests in the online learning environment and what support services may foster a sense of belonging in distance learners. There is limited research on the construct of belonging through the lens of retaining adult learners and less still describing practices the institution can adopt to foster a sense of belonging among online students and how belonging impacts intent to persist and complete. Additionally, multiple instruments have been developed to measure sense of belonging, yet there is no clear consensus on which provides the most valid assessment.

The purpose of this mixed methods study was to understand the concept of sense of belonging in online learners. This exploration is supported by research that demonstrates the impact of sense of belonging on institutional commitment and learner success and demonstrates the need for future research into the phenomenon of belonging in distance learners. Research shows that learners who engage in educationally purposeful and social activities report higher levels of satisfaction with their college

(Zhao & Kuh, 2004). This translates to the distance learner experience and satisfaction as well (Brown et al., 2015). For the purpose of this study, sense of belonging has been defined as the "perceived social support on campus, a feeling or sensation of connectedness, the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the group (e.g., campus community) or others on campus (e.g., faculty, peers)" (Strayhorn, 2012, p. 3). This research study was guided by three primary research questions.

Research Questions

The goals of this study were to explore whether online learners experience sense of belonging, how they experience belongingness, if belonging impacts satisfaction, persistence, and success, and what role the institution has played in fostering their sense of belonging. The primary research questions that guided this study were:

1. To what extent do distance students report a sense of belonging to the institution?

2. Does a sense of belonging play a central role in distance students' satisfaction, persistence, and success at the institution?

3. What can the institution do to promote a sense of belonging in distance students?

Research Design

Creswell and Creswell (2018) outlined three approaches to academic research—qualitative, quantitative, and mixed methods. This study used a mixed methods approach as it is useful when either qualitative or quantitative methods alone do not sufficiently address the research questions and can be helpful in minimizing limitations (Creswell & Creswell, 2018). Furthermore, Creswell and Creswell stated that "more insight into a problem can be gained from mixing or integration of the quantitative and qualitative

data" (p. 213). Specifically, this study used convergent mixed methods design, collecting both quantitative and qualitative data in a single phase, analyzing the data separately, then merging both data sets to interpret results (Creswell & Creswell, 2018).

This study sought to generalize findings across a population, adult and online learners, but also sought to develop a more detailed understanding of the concept of sense of belonging for that same population, therefore warranting a survey used both open and closed questions. The study was informed by a postpositivist worldview, used primarily to test, verify, or refine existing theories in new contexts. This study utilized the concept of belonging and the collection of quantitative and qualitative data from online students to develop a holistic understanding of the relationship between belonging and distance learners. Creswell and Creswell (2018) also pointed out that mixed methods does pose unique challenges to the researcher, including extensive data collection and the time required to analyze both qualitative and quantitative data, both of which have been taken into consideration in the planning for this study.

This study contributed to a gap in the research about sense of belonging in online learners and the role of the institution in contributing to a sense of belonging in this unique population. Furthermore, the comparison of perceived versus measured sense of belonging, students' descriptions of when they have experienced belongingness, and whether or not that sense of belonging matters to satisfaction, persistence, and success is lacking in the literature. Recent dissertation studies have looked at connections between distance students' sense of belonging and student services (Emmanuel-Frenel, 2017), and the influence of coaching on distance student retention (Bosworth, 2006; Vadell, 2016), but neither have used a mixed methods approach to explore the concept more broadly.

Few, if any, have broached the topic of how online learners actually describe the experience of belongingness or whether or not it matters to metrics of student success.

The researcher relied on quantitative data to address the research questions in this study in a number of ways and to identify group statistics by various demographics. First, quantitative data was used to determine the extent to which distance students experienced belonging to OSU and to better understand the relationship between their perceived belonging and measured belonging utilizing a modified version of the University Belonging Questionnaire (UBQ). Furthermore, quantitative data generated from the instrument revealed the impact of the three UBQ subscales—university affiliation, university support and acceptance, and faculty and staff relations—on distance students' belonging to the institution. Second, the quantitative data collected in this study helped the researcher better understand how sense of belonging impacts student satisfaction, intent to persist, and academic achievement. Finally, the researcher used quantitative data in this study to explore belonging scores across participants from the institution and within various demographics, including age, gender, race/ethnicity.

The goal of understanding how distance students experience sense of belonging in an online environment and what the institution does to foster that sense of belonging required a qualitative component to the study. Qualitative data was collected through four open-ended survey questions and used to develop themes around participant-informed experiences as well as institutional factors related to sense of belonging in the online environment. Analysis of the themes generated are important in discussion around the relationship between the UBQ-generated score and the participants' perceived sense of belonging.

Data

Data were gathered at Oregon State University (OSU), a large, public land grant university situated in the Pacific Northwest of the United States. It enrolls around 30,000 students per year and has strong online degree programs offered through its Ecampus division; OSU enrolls close to 10,000 purely distance undergraduate and graduate students each year. At the time of this study, OSU offered more than 55 fully online degree programs to students in all 50 states and more than 50 countries around the world. Distance education at the university started around 1910 with the delivery of correspondence courses by mail and using demonstration trains to deliver information across the state. In the 1920s, OSU started using radio broadcasting to educate state residents. Fall of 1957 brought new technology, as the university started to televise its first educational courses on TV. In 1982, OSU introduced its first complete distance degree program, Liberal Studies, via correspondence and VHS video cassettes. Finally, in 1996 online degree programs were developed and offered by the university.

In 2018-19 (the most recent full year of data available and the year in which the study was conducted), OSU enrolled 9,752 distance students, accounting for 31.47% of the total student population at the university. Of those 9,752 distance students, 38% were undergraduate-level degree-seeking students, 10% were graduate-level students seeking a degree or certificate, 27% were post-baccalaureate students (seeking a second bachelor's degree), and 25% were non-degree seeking students (often taking courses or course sequences to transfer back to home institutions). The average age of all OSU distance students was about 31, close to 55% were female identified, 24% resided within the state of Oregon, and an estimated 17% identified as first-generation college students. This

study focused on undergraduate, degree-seeking, distance students at OSU because they are the largest student population studying online at the university and the population on which most of the online retention literature is focused.

OSU was chosen as the research site because of the researcher's easy access to data and participants. At the time of this study, the researcher was serving in the role of director of student success at OSU Ecampus and overseeing the unit and staff responsible for providing student services and developing success initiatives focused on distance learners. Additionally, OSU is a leader in online education and attracts students from all over the world, which means this study represents a large and diverse sample of distance students that may increase the potential for findings to be generalized.

Data Collection

The data for this study were collected through an online survey for two primary reasons: (a) to ensure anonymity of participants, and (b) to provide an easily accessible instrument for students who are located around the world and are comfortable using the internet regularly to access course materials. This study utilized an online survey tool, Qualtrics, to build, distribute, and collect participant responses. Within the survey settings, the option to "anonymize response" was selected, meaning that Qualtrics did not record any personal information and removed contact association from each survey record. This ensured that Qualtrics did not collect or track IP addresses of survey participants. The decision to make this survey anonymous was based out of consideration for the sensitive nature of the topic of belonging and intent to collect authentic data from student participants. Identifying information, such as student ID or major, would not add to the researcher's ability to address the research questions.

The OSU registrar's office was asked to provide a list of eligible students to invite to participate in the survey. The target population for this study, who received an invitation to participate in the survey, was 1,576 OSU students. The number of respondents for this study was 173, generating a response rate of 10.97%. Students eligible to participate in the study met the following criteria at the time the invitation was sent:

- Currently an Undergraduate degree seeking student;

- Currently coded as a purely distance student (DSC campus code in the Student Information System), meaning the student was pursuing a degree completely online;

- Had been enrolled in either the spring 2019 or summer 2019 quarters; and

- Had completed a minimum of 24 credits at OSU—demonstrating enough time at the university to have a good sense of their experience and belonging to the institution.

Distribution

Only students' university email addresses were used to invite them to participate in the online survey. The sole use of university-provided email addresses, protected by two-factor authentication, will ensure that only students in active status with OSU received and completed the survey. Each student received three emails inviting them to complete the survey over the course of four weeks (Appendix A). Due to the use of an anonymous survey link and the setting within the survey described above, students who had completed the survey continued to receive reminders until the survey closed. However, settings in Qualtrics were enabled to prevent participants from taking the survey more than once. The email invitation to students included a description of the research study, the adult consent form (Appendix B), and a link to the online survey

(Appendix C). As an incentive, students who completed the survey had the option to enter into a raffle to win one of three $25 Visa gift cards.

Instrumentation

The online survey used for this study was designed after reviewing literature (Emmanuel-Frenel, 2017; Slaten et al., 2014, 2018) and seeking guidance from research professionals and the researcher's dissertation committee. Slaten et al.'s (2018) University Belonging Questionnaire (UBQ) served as a critical component of the survey tool used for this study. The UBQ was developed out of the pursuit for a scale that accurately measured the construct of university belonging. Many previous measures of belonging were specifically developed for youth in K-12 schools and were not directly transferrable to a university population. Slaten et al. (2018) identified a need to allow students to identify perceptions of support and belonging in various parts of the university experience, stating that "to measure and understand the construct of university belonging accurately, scholars must acknowledge and seek to understand the meaning of belonging at the university level" (p. 636). Thus, measurement items within the UBQ instrument were developed through a review of literature, previous work on belonging research, and in consultation with other researchers studying belonging as a construct.

The study began with a list of 40 items believed to correspond to students' university experiences and relationship to the university. Based on initial testing through exploratory factor analysis, 16 statements were eliminated from the tool, leaving a total of 24 remaining. To examine the convergent, divergent, and incremental validity of the UBQ, the researchers looked for correlations with other tools measuring university belonging, general belonging, social support, social connection, and loneliness. Slaten et

al. (2018) found internal reliability of the UBQ instrument both in total score and each

subscale, stating, "with a α = .93 for the total score and α = .89 for university affiliation,

α = .85 for university support and acceptance, and α = .88 for faculty and staff relations"

(p. 644). The researchers further stated that their results "provide evidence of the

construct, divergent, and incremental validity of the UBQ and its three subscales" (Slaten

et al., 2018, p. 646). Instrument reliability is critical to quantitative studies in ensuring

that findings are accurate and indicative of true results. Beyond the quantitative

soundness of the study in which the UBQ was developed, the instrument has been chosen

for the current study for three primary reasons. First, development of the UBQ revealed

that peer items, included in the original 40 statements, did not meet factor loading

requirements to justify use moving forward. The researchers presented one possible

explanation for this, stating that "although peer relationships are important to university

students, perhaps they are seen as separate from the sense of university belonging"

(Slaten et al., 2018, p. 646). The current study sought to explore sense of belonging in

distance students, a population that has considerably less peer interaction than their on-

campus counterparts, which demonstrates alignment between the sample population and

the UBQ instrument. Second, the UBQ subscales aligned with the research of sense of

belonging as a university-level concept, which is demonstrative of the distance student

experience. And finally, the UBQ instrument appeared to need less modifications for

application to an online student population and most accurately and directly addressed the

research questions and population of this study. Consent to use the UBQ instrument for

the current study was obtained from Dr. Christopher D. Slaten via email communication

(Appendix D).

Through the use of three subscales—university affiliation, university support and

acceptance, and faculty and staff relations—the UBQ considers and measures four

concepts to generate a university belongingness score for each participant. The

belongingness score is the sum of all scores from each of the 24 statements, meaning

participants' university belonging score will range from 24–96, with higher scores

indicating a higher level of belonging. Each of the four concepts—valued group

involvement, intrapersonal factors, meaningful personal relationships, and environmental

factors—are described below in Figure 3.1. The researcher modified the UBQ instrument

to ensure the language was inclusive and welcoming to distance students. Changes made

to the instrument included using "at OSU" instead of "on campus." A copy of the original

UBQ instrument, highlighting modifications made for this study, can be viewed in

Appendix E.

Figure 3.1

Conceptual Illustration of the Construct of University Belonging Based on Study Results

Valued Group Involvement
- Being affiliated /member of an organization on campus
- Engaging in meaningful group activities
- Feeling valued within one's major

Intrapersonal Factors
- Intrinsic motivation to seek out relationships with others
- Opportunities for self-awareness and growth
- Balancing social and academic lives

University Belongingness

Meaningful Personal Relationships
- Having similar experiences as others
- Having healthy relationships with faculty/staff
- Building strong friendships with peers
- Having family members that are alumni

Environmental Factors
- Global sense of university culture and/or pride
- Influence of living community (e.g., dorms, apartments)
- Classroom environment
- The importance of diversity and inclusivity

Note. From "The Development and Validation of the University Belonging Questionnaire," by C. D. Slaten, Z. M. Elison, E. D. Deemer, H. A. Hughes, and D. A. Shemwell, 2018, *The Journal of Experimental Education*, *86*(4), p. 637 (https://doi.org/10.1080/ 00220973.2017.1339009). Copyright 2018 by Taylor & Francis. Reprinted with permission.

Other components of the online survey were developed in consultation with quantitative methods experts to ensure survey questions aligned with the research questions outlined in this study. The online survey (Appendix C) used for this study consisted of the following sections: (I) student satisfaction (4 questions); (II) sense of belonging (31 questions); (III) intent to persist (3 questions); and (IV) demographics (5 questions). As shown in Table 3.1, each section includes various types of questions that will be used to address the guiding research questions.

Table 3.1

Sequence of Measures on Survey

Section	Topic	Space	Research Question Addressed
I – Student satisfaction (Qn)	Satisfaction with online educational experience at OSU	2 questions	R2
I – Student satisfaction (Ql)	Positive and negative student experiences at OSU	2 questions, unlimited space	R2
II – Sense of belonging (Qn)	Student perceptions of belonging to OSU	5 questions	R1
II – Sense of belonging (Qn)	UBQ: University affiliation subscale	12 questions	R1
II – Sense of belonging (Ql)	Example of feeling connected and disconnected to OSU	2 questions, unlimited space	R3
II – Sense of belonging (Qn)	UBQ: University support and acceptance subscale	8 questions	R1, R3
II – Sense of belonging (Qn)	UBQ: Faculty and staff relations subscale	4 questions	R1, R3
III – Intent to persist (Qn)	Intent to persist and complete at OSU	3 questions	R2
IV – Demographics (Qn)	Student demographics	5 questions	R1, R3

The introduction of the survey included a brief description of the research study,

an explanation of how to enter a raffle anonymously, and the researcher's contact

information. Section I (Student Satisfaction) of the online survey began with questions

about participants' satisfaction with OSU and likelihood of recommending OSU to

others, followed by two open-ended questions asking students for examples of both

positive and negative experiences as an OSU online student. Section II (Sense of

Belonging) first asked participants to respond to a series of five statements using a 5-

point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 =

strongly agree). Statements addressed student's perceptions of belonging in courses and

to the institution, peers, instructors, and staff. Next, participants were given a series of 12

modified statements from the UBQ university affiliation (UA) subscale (Slaten et al.,

2018), then asked to indicate their level of agreement with each statement on a four-point

scale (1 = strongly disagree; 4 = strongly agree). Participants were then asked two open-

ended questions eliciting examples of times when they felt a sense of connection and a

sense of disconnection at OSU. Section II ended with the remaining UBQ subscales,

university support and acceptance (USA) and faculty and staff relations (FSR), for a total

of 12 remaining statements to respond to on a four-point scale.

Next, Section III (Intent to Persist) included three statements to measure the

participants' intent to register for courses at OSU in the following term, belief they will

earn a degree from OSU, and the degree to which they consider dropping out, all

requiring a response on a four-point scale (1 = strongly disagree; 4 = strongly agree).

Finally, Section IV (Demographics) asked participants to (a) state their overall

OSU GPA; (b) indicate the number of credits they had completed online at OSU (24-36,

37-60, 61 or more); (c) select their age range (under 24, 25-34, 35-44, 45-54, 55 or over);

(d) select the gender they identified with (male, female, trans male/trans man, trans

female/trans woman, genderqueer/gender non-conforming, different identity, prefer not

to identify); and (e) select the race(s)/ethnicity(ies) with which they identified (American

Indian or Alaska Native, Asian, Black or African American, Hispanic or Latina/o, Middle

Eastern or North African, Native Hawaiian or Pacific Islander, White, another race or ethnicity, I prefer not to respond). A full draft of the survey instrument used for this study (Appendix C) as well as the UBQ with modifications (Appendix E) are included. Upon completion of the survey, participants were provided with instructions and an anonymous link to enter their name into a raffle for one of three $25 Visa gift cards. The researcher did not have access to or manage the raffle to ensure that anonymity of survey responses was maintained.

Positionality

Researcher positionality was a rather large concern due to the study being conducted at the site in which the researcher was serving as the director for online student success and managing the team that provided student services and developed student success initiatives. To address this concern, OSU Ecampus Research Unit staff reviewed the open-ended responses and removed any mention of major or names of faculty and staff members before the data was given to the researcher for further processing.

Beyond professional positionality, I must also acknowledge that sense of belonging has been a critical part of my own experience, success, and failure both in higher education and in the workplace. I believe wholeheartedly that sense of belonging is an important component of the student experience and one that can have resounding effects on a student's ability to succeed or fail. To address these concerns, I ensured that I was consciously looking for data that supports alternate explanations and arranged for meetings with the OSU Ecampus Research Unit and committee chair to support, challenge, and deepen insights gleaned from my analysis.

Validation, Reliability, and Ethics

The UBQ has been validated by the group of researchers who developed the instrument (Slaten et al., 2018); however, other validity issues may be present. The primary threats to validity in this study, due to the design and use of a survey tool, included limited sample size and researcher positionality. While the overall sample size was out of the researcher's control, the researcher addressed concerns about unequal sample size by monitoring survey submission numbers as the survey was open to determine if additional recruitment was needed. Due to eligibility criteria for the purposes of exploring belonging with undergraduate degree-seeking students who had been at the university long enough to complete at least 24 credits, this study had a limited sample size and low response rate (10.97%).

Merriam and Tisdell (2016) discussed quite extensively the argument of what reliability means in a qualitative study, which includes conducting investigations in an ethical manner. Inevitably, reliability was determined by explicitly acknowledging my role as the researcher and my relationship to the study, being clear about my process for conducting the study, and making a convincing and accurate presentation of the findings at the culmination of the study. For this study, the researcher utilized provisional coding of the qualitative data. Provisional coding requires establishing a list of pre-determined codes based on categories or themes that arise in the literature review (Saldaña, 2016). The pre-determined list can be revised, modified, excluded, or expanded upon collection and analysis of the data. The researcher kept an electronic log of the process in which coding of qualitative data took form as well as documentation of the established provisional code list. Consistent and thorough examinations of the codes and themes by

the researcher's advisor, committee, and other research colleagues have ensured

reliability of my qualitative data and provided a check of my own biases and dispositions

in the research process. In data collection, reliability was addressed by only using

students' university email addresses, protected by two-factor authentication, when

inviting them to participate in the online survey. This practice ensured that only active

and authenticated OSU students received an invitation and therefore completed the

survey. The researcher used Qualtrics, a survey tool that is approved by and licensed

through OSU for all survey and assessment projects. All data is stored on the researcher's

personal drive provided by the university and password protected. The researcher did not

collect personally identifiable information about survey participants. All participants

were given the informed consent and informed that by clicking on the survey link, they

acknowledged that informed consent.

Upon approval by the doctoral committee, the researcher prepared and submitted

an Institutional Review Board (IRB) application through OSU as well as an IRB

authorization agreement to Portland State University, the researcher's doctoral institution,

which ceded IRB oversight of this study to OSU. In July 2019, IRB approval was granted

for this study (Appendix G). The researcher completed the CITI online training course

and was awarded a certificate of completion (Appendix F) prior to submitting an

application for IRB approval. Each participant received three formal emails inviting them

to participate in the study (Appendix A) and informing them of purpose of the study,

assurance of confidentiality, researcher's contact information, the length of time to

complete the survey, and a link to the survey. The adult consent form (Appendix B) was

included in the introduction to the online survey. A notation was included in the consent

form indicating that the participant was providing consent for participation in the study

once the online survey had been submitted.

Data Analysis

      This study used convergent mixed methods design, collecting both quantitative

and qualitative data in a single phase, analyzing the data separately, then merging both

data sets to interpret the results and address the guiding research questions. The primary

and secondary research questions for this mixed methods study were:

1. To what extent do distance students report a sense of belonging to the institution?

    a. What are the average levels of sense of belonging to the institution that students are reporting, according to the direct questions about belonging and the University Belonging Questionnaire (UBQ)?

    b. Are the two indicators of belonging, direct questions about belonging and the UBQ, significantly correlated or significantly different in mean level?

    c. Do levels of belonging to the institution differ for students from different demographic groups (gender and students of color), according to both the direct questions about belonging and the UBQ?

2. Does a sense of belonging play a central role in distance students' satisfaction, persistence, and success at the institution?

    a. What is the relationship between a student's sense of belonging and their satisfaction with the university, intent to persist, and academic success?

    b. When students are asked about their most positive and negative experiences as online students at OSU, to what extent do they mention experiences that involve belonging and connection versus lack of belonging and disconnection?

3. What can the institution do to promote a sense of belonging in distance students?

    a. What institutional factors are associated with students' sense of belonging at OSU?

b. To what extent do students' experiences with those institutional factors differ for those from different demographic groups, specifically by gender and race and ethnicity?

c. When students are asked about their experiences of belonging and disconnection to the institution, what themes about institutional factors emerge?

Data analysis was initiated after the survey had closed and any identifying data had been removed by the OSU Ecampus Research Unit staff member. First, the researcher performed quantitative data analysis using IBM SPSS 26 (Statistical Package for the Social Sciences) statistics software. SPSS allows for hypothesis testing, identification of statistical errors, and correlation coefficients. The researcher prepared and entered the survey data into SPSS to compile demographic data about the sample population and calculate respective belonging scores, both perceived and measured by the UBQ subscales. Table 3.2 lists each research question requiring quantitative data analysis and the corresponding statistical test to be run in SPSS 26. Statistical significance is measured by the p value, which "refers to the risk we want to take in saying we have a real non-zero correlation when in fact this effect in not real" (Creswell & Creswell, 2018, p. 152). A p value of $p < .05$ was considered significant. It is important to note that participants were not required to answer any specific questions on the survey and that all questions were optional. This was at the recommendation of the researcher's committee. Any scored questions left unanswered by participants were filled in with the average score of that survey item.

Table 3.2

Quantitative Analysis by Research Questions

RQ	Question	Statistical Test
1a	What are the average levels of sense of belonging to the institution that students are reporting, according to the direct questions about belonging and the UBQ?	Group statistics for belonging scores (means, standard deviations, minimums, maximums) Frequency data (distribution of scores)
1b	Are the two indicators of belonging, direct questions about belonging and the UBQ, significantly correlated or significantly different in mean level?	Correlation – Pearson's correlation test (all variables considered to be continuous) Significant mean level difference – Normalize both scores, independent sample *t*-test
1c	Do levels of belonging to the institution differ for students from different demographic groups, according to both the direct questions about belonging and the UBQ?	Group statistics (means, standard deviations, minimums, maximums) Frequency data (distribution of scores) Significant mean level difference - independent sample *t*-test
2a	What is the relationship between a student's sense of belonging and their satisfaction with the university, intent to persist, and academic success?	Group statistics (means, standard deviations, minimums, maximums) Frequency data (distribution of scores) Correlation (satisfaction, net promoter, intent to persist) – Spearman's Rho correlation test (not all variables are continuous) Correlation (OSU GPA) – Pearson's correlation test (all variables are considered to be continuous)
3a	What institutional factors are associated with students' sense of belonging at OSU?	Group statistics (means, standard deviations, minimums, maximums) Frequency data (distribution of scores) Correlation (subscales to both measures of belonging) – Spearman's Rho correlation test (not all variables are continuous)
3b	To what extent do students' experiences with those institutional factors differ for those from different demographic groups?	Group statistics (means, standard deviations, minimums, maximums) Frequency data (distribution of scores) Significant mean level difference - independent sample *t*-test

Second, the researcher analyzed qualitative data collected from the four open-ended survey questions asking participants to describe positive and negative experiences as an online learner at OSU and examples of when they felt a sense of connection and sense of disconnection to the university. The researcher first became familiar with the data by reading through survey responses multiple times before starting the process of coding. Both provisional and structural coding were used for the qualitative data analysis in this study. Provisional coding requires starting with a list of codes the researcher generates based on investigation of the literature prior to collecting and analyzing the data (Saldaña, 2016). This initial list of codes can change, expand, or contract once data analysis and coding has begun. Structural coding is described as applying "a content-based or conceptual phrase representing a topic of inquiry to a segment of data that relates to a specific research question" (Saldaña, 2016, p. 98). Structural coding, while appropriate for almost all qualitative studies, is especially useful for studies with multiple participants, standardized data-gathering protocols, or exploratory investigations meant to identify major categories or themes. Structural coding was specifically used for coding open-ended responses by themes related to the UBQ subscales—University Affiliation, University Support and Acceptance, and Faculty and Staff Relations. This analysis required coding the responses that survey participants provided, then collapsing into broader themes to explore how they aligned or conflicted with definitions of belonging in the literature.

An invitation to participate in the online survey was sent to 1,576 OSU distance students who met the eligibility criteria for this study. After two additional email

reminders, a total of 173 surveys were completed (Table 3.3), generating a response rate

of 10.97%.

Table 3.3

Total Responses to Survey

Survey No.		
N	Valid	173
	Missing	0

Once response rate had been confirmed as comparable to other student surveys

administered to the OSU Ecampus population, and prior to the researcher receiving the

data file, survey data was exported from Qualtrics and cleaned by a member of the OSU

Ecampus Research Unit to remove program/major name, names of advisors, instructors,

and other staff to protect the identities of participants and eliminate conflict of interest

given the researcher's position with the institution. Scoring and coding of the survey data

was conducted after the collection and cleaning of the data. The analysis of quantitative

data was done using IBM SPSS (Statistical Package for the Social Science) statistics

version 26 software. A variety of statistical tests was used to analyze survey data (Table

3.2), which is covered in the findings section of this chapter.

Multiple sections of the online survey required scoring after data collection. First,

perceived belonging was measured by 5 survey questions each on a five-point Likert-type

scale (1 = strongly disagree, 5 = strongly agree), generating a score between 5–25, where

a higher score indicates a higher perceived sense of belonging. Second, the survey

included the UBQ, which consists of 24 questions divided into three subscales—

University Affiliation (12 questions), University Support and Acceptance (8 questions),

and Faculty and Staff Relations (4 questions)—all on a four-point Likert-type scale (1 =

strongly disagree, 4 = strongly agree). The overall UBQ score falls between 24–96, and

each subscale score was also calculated. Similarly, higher scores on the UBQ overall and

on each subscale indicate increased sense of belonging. In order to run tests for

significance in mean level scores— independent sample t-test in this case—the scales

must be the same (Field, 2018). However, the perceived belonging scale and UBQ scale

were not the same, so the researcher was advised to re-scale the scores before running an

independent sample t-test. The equation used to rescale scores was $[X_{new} = (X-

X_{min})/(X_{max}-X_{min})]$ (Stephanie, 2015), where X_{new} is the rescaled score, X is the original

score, and X_{min} and X_{max} are the minimum and maximum, respectively, in the original

scale. Additionally for easy comparison, mean belonging scores may be presented on

scales of 1–4 for the UBQ and 1–5 for perceived belonging. Finally, a series of three

survey questions on a four-point Likert-type scale were used to determine each

participant's intent to persist score. Two of the three statements were presented positively

and were left coded as scaled (1 = strongly disagree, 4 = strongly agree). However, the

third statement was framed as a negative statement and therefore required reverse coding.

Intent to persist scores can range from 3–12, where a higher score indicates a stronger

intent to persist at OSU.

  The analysis of qualitative data consisted of both provisional and structural

coding. Provisional coding, which required establishing a list of pre-determined codes

based on categories or themes that are present in the literature (Saldaña, 2016), was used

to identify themes related to belongingness and the student experience. The pre-

determined list was then revised and modified to exclude or expand upon themes

emerging from the data (Appendix H). Structural coding, which applies conceptual

themes based on investigation or research questions, was used for coding open-ended

responses by components included in the UBQ subscales—University Affiliation,

University Support and Acceptance, and Faculty and Staff Relations. Frequency of codes

and themes were reported on the basis of participants who mentioned each particular

theme, rather than the total number of times the theme appeared throughout the open-

ended survey responses (Saldaña, 2016). In other words, codes were based on literature in

the field of belonging as well as aspects of the instrument used in this study to effectively

connect the quantitative and qualitative data gathered.

Summary

This mixed methods study explored the phenomena of belonging in distance

students through the use of an online survey. This survey allowed the researcher to

examine the relationship between distance students' perceived sense of belonging and

their measured (UBQ) sense of belonging, better understand how distance students

experience belongingness, if it matters to their satisfaction, persistence and success, and

what role the institution plays in fostering their belonging.

Chapter 3 outlined the goals of the study, purpose of the research, research

questions and hypotheses, design, data, data collection, and data analysis. This mixed

methods study targeted undergraduate degree-seeking distance students at OSU who were

enrolled in Spring and Summer quarters of 2019 and had completed 24 or more credits at

the university. The data was collected using an online survey to determine participants'

self-perceived belonging scores as well as belonging scores measured with the UBQ, to

analyze the importance of belonging related to satisfaction, persistence, and success, and

to ask students to describe in their own words how they had experienced belonging as

well as feelings of disconnection to the institution. Chapter 4 provides a detailed analysis

of data collected to answer three primary research questions and presents findings based

on the research methodology presented in this chapter.

Chapter Four: Findings

This mixed methods study was designed to explore the phenomena of belonging in distance learners through the use of an online survey to gather both quantitative and qualitative data around students' sense of belonging to the institution. The survey used a variety of questions developed by the researcher as well as the University Belonging Questionnaire (UBQ), a tool developed and validated by Slaten et al. (2018) to effectively measure college student belonging.

This chapter provides a detailed analysis of data collected to answer three primary research questions and a series of sub-questions, and it presents findings based on the research methodology presented in Chapter 3. The primary research questions guiding this study were:

1. To what extent do distance students report a sense of belonging to the institution?

2. Does a sense of belonging play a central role in distance students' satisfaction, persistence, and success at the institution?

3. What can the institution do to promote a sense of belonging in distance students?

This study used a convergent mixed methods design, collecting both quantitative and qualitative data in a single phase, analyzing the data separately, then merging both data sets to interpret results (Creswell & Creswell, 2018). An online survey was used to gather data from online students at Oregon State University (OSU), a large public land-grant research university situated in the Pacific Northwest of the United States that enrolls around 10,000 distance undergraduate and graduate students annually. Only students who met eligibility criteria—enrolled as a distance degree-seeking

undergraduate student in either spring or summer of 2019 and had completed a minimum

of 24 credits at OSU—were invited by email to participate in the survey. The anonymous

online survey used 43 questions to measure satisfaction, belonging, and intent to persist

and to gather experiences and demographic information. The UBQ (Slaten et al., 2018)

provided 24 of the 43 survey questions, and the remaining came from existing university

evaluations and the researcher's dissertation committee.

Chapter 4 includes sections on participant demographics, findings laid out in

order of research questions, and a summary of major findings that are used in the

discussion to follow in Chapter 5.

Participant Demographics

An invitation to participate in the online survey was sent to 1,576 OSU distance

students who met the eligibility criteria for this study. After two additional email

reminders, a total of 173 surveys were completed, generating a response rate of 10.97%.

The survey included questions collecting demographic information such as age, gender,

and race and ethnicity data (Table 4.1) from participants willing to provide this

information. Survey participants were asked to select their current age by the ranges

presented. The majority of participants (66.5%) were between 25–34 years old (37%) and

35–44 years old (29.5%), which aligns with demographic trends in online education

nationwide. However, an unexpectedly high proportion of participants (14.5%) selected

24 years old and under. Participants were also asked to select the gender with which they

identify and given a total of seven options to choose from. Participants overwhelmingly

identified as female (69.4%), and while more females overall were enrolled in distance

degree programs at OSU, this is more heavily skewed than we typically see. Finally,

participants were given nine race and ethnicity categories and were instructed to select all that applied. While participants were given the option to select more than one category, not a single participant selected more than one option. Participants overwhelmingly identified as White (78%), followed by the next largest group, who preferred not to respond (7.5%), and Hispanic or Latina/o (4.6%).

Table 4.1

Participant Demographics by Age, Gender, and Race/Ethnicity

Demographic	Frequency	Percent	Valid Percent	Cumulative Percent
Current Age				
24 years old and under	25	14.5	14.5	14.5
25 - 34 years old	64	37.0	37.0	51.4
35 - 44 years old	51	29.5	29.5	80.9
45 - 54 years old	21	12.1	12.1	93.1
55 years old or over	12	6.9	6.9	100.0
Total	173	100.0	100.0	
Gender				
Female	120	69.4	69.4	69.4
Male	46	26.6	26.6	96.0
Trans female/Trans woman	1	.6	.6	96.5
Trans male/Trans man	1	.6	.6	97.1
Different identity	2	1.2	1.2	98.3
Prefer not to identify	3	1.7	1.7	100.0
Total	173	100.0	100.0	
Race/Ethnicity				
American Indian or Alaska Native	4	2.3	2.3	2.3
Asian	3	1.7	1.7	4.0
Black or African American	3	1.7	1.7	5.8
Hispanic or Latina/o	8	4.6	4.6	10.4
Middle Eastern or North African	1	.6	.6	11.0
Native Hawaiian or Pacific Islander	2	1.2	1.2	12.1
White	135	78.0	78.0	90.2
Another race or ethnicity	4	2.3	2.3	92.5
I prefer not to respond	13	7.5	7.5	100.0
Total	173	100.0	100.0	

The survey also contained questions about academic progress at OSU, including the number of credits participants had completed online at the institution, factoring in their current term, given the ranges presented in Table 4.2. There appears to be a rather even split across the ranges. An option was not presented for less than 24 credits due to the eligibility criteria to participate in the survey and the selection of the sample via data pulled by university personnel. In addition to asking participants to share their academic progress in regards to credits completed, participants were also asked to report their overall OSU grade point average (GPA) in a text entry box. Table 4.3 indicates that 137 students responded to this question, with an average reported GPA of 3.44 and a standard deviation of .453522. The minimum reported GPA was 2.00, and the maximum reported GPA was 4.00, aligning with current academic regulations requiring students to maintain a minimum GPA of 2.00 to remain in good academic standing and the maximum achievable GPA of 4.00. Figure 4.1 demonstrates that the reported GPA data is normally distributed.

Table 4.2

Survey Participants by Credits Completed

		Frequency	Percent	Valid Percent
Valid	24 - 36 credits	37	21.4	21.5
	37 - 60 credits	68	39.3	39.5
	61 or more credits	67	38.7	39.0
	Total	172	99.4	100.0
Missing	System	1	.6	
Total		173	100.0	

Table 4.3

Survey Participants by Self-Reported GPA

N	Valid	137
	Missing	36
Mean		3.443800
Std. deviation		.453522
Minimum		2.000000
Maximum		4.000000
Percentiles	25	3.200000
	50	3.500000
	75	3.800000

Figure 4.1

Distribution of Survey Participants Self-Reported GPA
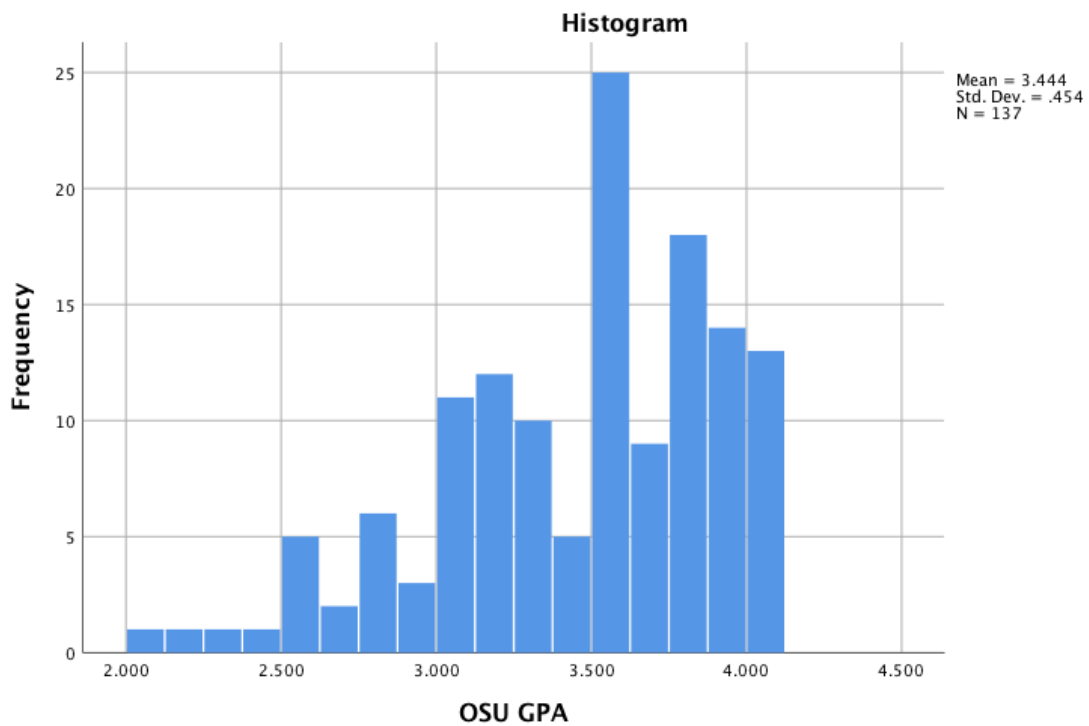
Qualitative Question Response Rates

Participants were given the option to respond to four open-ended questions within the survey. These questions asked students to share specific experiences, both positive and negative, at OSU and specifically around sense of belonging. Table 4.4 shows the response rates for each of the four qualitative survey questions, which are listed in order of appearance in the survey. The survey question asking students to share their most positive experience had the highest response rate (95.95%), followed by the question asking students to share about their most negative experience (93.64%). While the response rate was lower for the question asking about an experience where they felt belonging and connection (77.45%), students were more willing to share experiences in the subsequent question about experiencing disconnection or lack of belonging to the institution (89.59%).

Table 4.4

Qualitative Question Statistics

Qualitative Question Topic	N	Response Rate
Positive experience	166	95.95%
Negative experience	162	93.64%
Experience of belonging and connection	134	77.45%
Experience of disconnection or being an outsider	155	89.59%

Findings

This section presents findings, including the data used and analyzed to answer

each of the three research questions guiding this study. Effectively, this study seeks to

answer whether distance students experience sense of belonging to the institution, and if

so, how is that connected to other metrics of success, and what can the institution do to

more effectively promote that sense of belonging in online learners? Each research

question is introduced with sub-questions, a summary of data used to address these

questions, tests and analyses required, and findings. The primary research questions

guiding this study were:

1. To what extent do students report a sense of belonging to the institution?

2. Does a sense of belonging play a central role in distance students' satisfaction, persistence, and success at the institution?

3. What can the institution do to promote a sense of belonging in distance students?

RQ1: To What Extent do Distance Students Report a Sense of Belonging to the Institution?

The first research question guiding this study asked to what extent distance

students were reporting a sense of belonging to the institution and how this might differ

across demographic groups, specifically gender and students of color. Effectively, this

question explored whether distance students at OSU experienced belonging and to what

extent. There are three sub-questions to address this research question:

-   What are the average levels of sense of belonging to the institution that students are reporting, according to the direct questions about belonging and the University Belonging Questionnaire (UBQ)? (Quan)

-   Are the two indicators of belonging, direct questions about belonging and the UBQ, significantly correlated or significantly different in mean level? (Quan)

- Do levels of belonging to the institution differ for students from different demographic groups (gender and students of color), according to both the direct questions about belonging and the UBQ? (Quan)

This research question and all related sub-questions, were answered with quantitative data collected in this study. Specifically, belonging scores, both perceived and from the UBQ, satisfaction data, intent to persist scores, and participant reported GPA, as well as participant demographics, were used to answer this research question.

Participants were asked a series of five direct questions to measure their perceived sense of belonging to OSU. The survey questions asked students about their level of agreement with feeling a sense of belonging in their classes, feeling like they matter, feeling a close connection to other students, feeling like their instructors care about them as a person, and feeling like university staff were there for them. These five questions were each asked on a 5-point Likert-type scale (1 = strongly disagree, 5 = strongly agree). The perceived belonging score was calculated for each respondent by adding up their responses to each of the five questions, generating a possible score range of 0–25. As noted in Chapter 3, any scored questions left unanswered by participants were filled in with the average score of that survey item.

Overall, participants reported a mean perceived belonging score of 15.82, with a standard deviation of 4.485 (Table 4.5), indicating a moderate perceived sense of belonging among participants. Figure 4.2 demonstrates that the perceived belonging scores of participants are normally distributed. Participants' scores are skewing slightly to the higher end of the scale, showing a positive trend toward belonging in distance learners.

Table 4.5

Measures of Belonging

	N	Minimum	Maximum	Mean of Summary Score	Std. Deviation	Mean of Average Score
Perceived belonging score	173	5	25	15.82	4.485	3.16
UBQ score	173	32	95	71.06	12.887	2.96
Valid N (listwise)	173					

Note. Perceived belonging summary scores could range from 5 to 25; Perceived belonging average scores could range from 1 to 5; UBQ summary scores could range from 24 to 96; UBQ average scores could range from 1 to 4.

Figure 4.2

Distribution of Perceived Belonging Scores
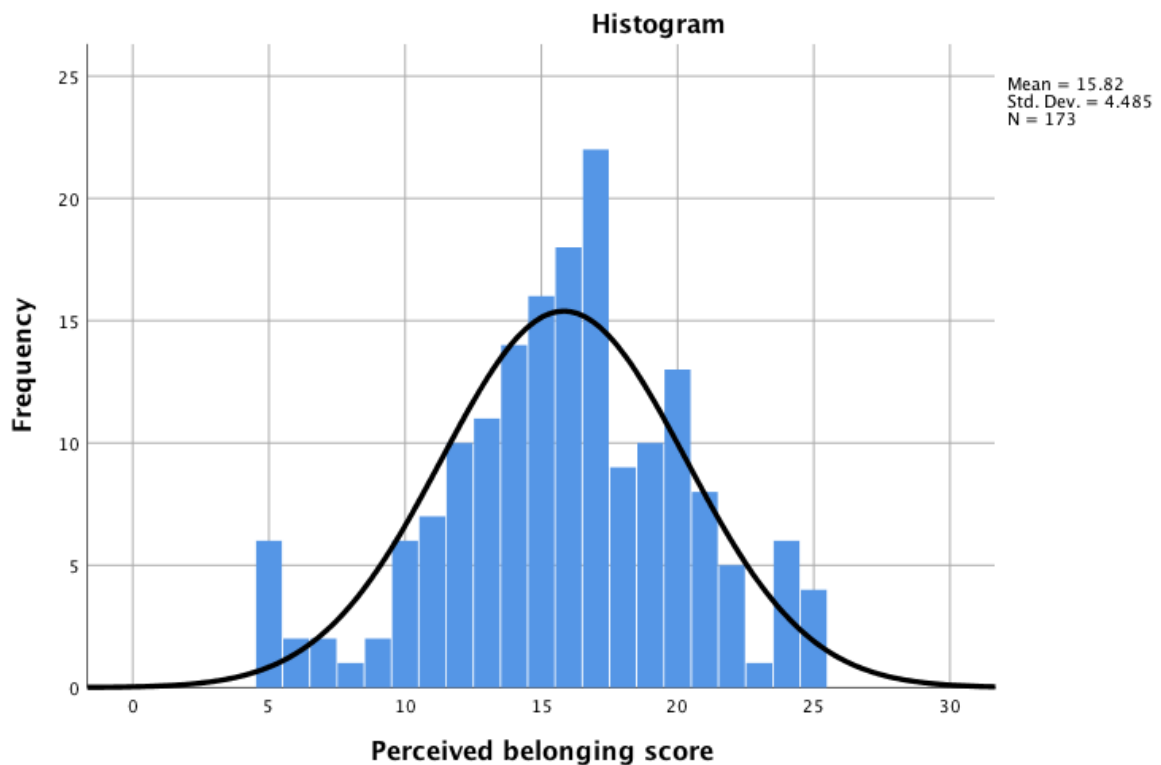
The second measure of belonging included in the survey and a validated instrument, the UBQ (Slaten et al., 2018), was developed to measure belonging in university students. It is made up of 24 questions on three subscales—University Affiliation (UA), University Support and Acceptance (USA), and Faculty and Staff Relations (FSR). Each of the 24 questions requires students to respond in agreement on a 4-point Likert-type scale (1 = strongly disagree, 4 = strongly agree). The UBQ generates total scores ranging from 24–96, with each subscale generating a score based on the number of questions included in that scale (UA–12 questions, USA–8 questions, FSR–4 questions). Overall, students' UBQ summary scores had a mean of 71.06 (SD = 12.887), given a possible range of scores of 24–96, and students' UBQ averaged scores had a mean of 2.96 on a scale of 1 to 4. Both are indications of some sense of belonging among OSU's distance students as measured by the UBQ (Table 4.5), however there is a lot of room for improvement. Figure 4.3 demonstrates that the participants' UBQ summary scores are normally distributed.

Figure 4.3

Distribution of University Belonging Questionnaire Scores
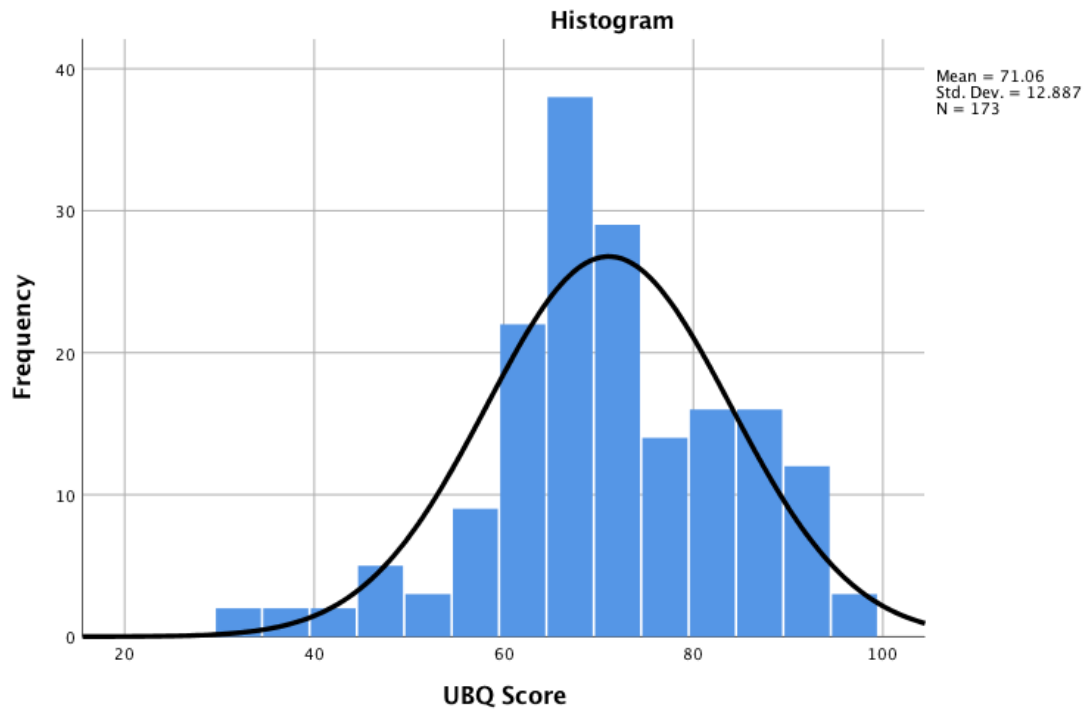
To address the second sub-question and determine if the belonging indicators

discussed in this section, perceived belonging and the UBQ, are significantly correlated

or significantly different in mean level, a Pearson correlation test and an independent

sample *t*-test are required. Pearson correlation is used to measure the linear relationship

of two continuous variables, and an independent sample *t*-test is used to compare the

means of two independent groups to determine if the means are significantly different

(Field, 2018). Before doing this, a check for linearity between the two variables was

conducted. Figure 4.4 shows a scatterplot of perceived belonging scores and UBQ scores

and the linearity of the two variables.

Figure 4.4

Scatterplot of UBQ Scores and Perceived Belonging Scores
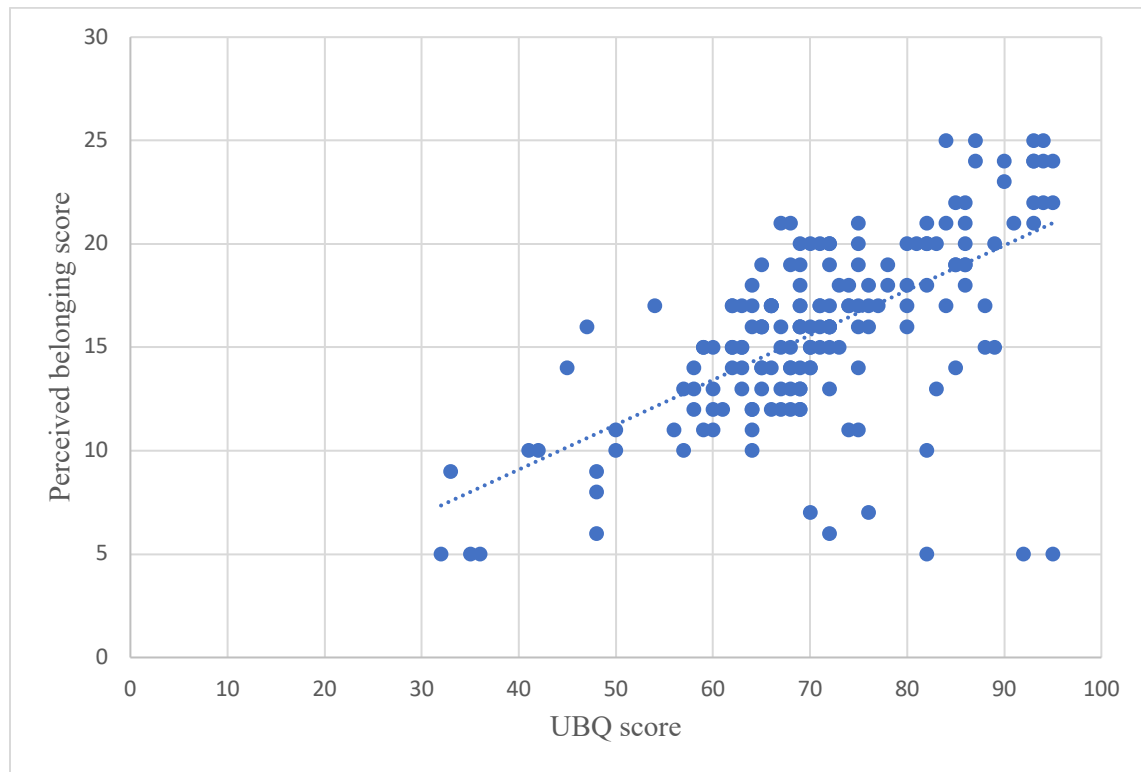
First, the Pearson correlation test results demonstrated that the perceived belonging score and the UBQ scores were positively correlated ($r = .623$, $n = 173$, $p < .001$). This indicated a strong relationship between the two measures of belonging. Next, to compare mean levels, scores from both measures of belonging must be normalized and compared on the same scale. To do this, the data was re-scaled in SPSS using the "compute variable" function. The researcher used a mathematical formula [(R1 – Min)/(Max – Min)] for each response to generate rescaled data points and new variables in SPSS. The new variables used in this test were labeled "Rescaled perceived belonging" and "Rescaled UBQ belonging." Table 4.6 presents statistics on the rescaled data

showing the mean for rescaled perceived belonging is .5410 (SD = 0.22424), and the

mean for rescaled UBQ belonging is .6537 (SD = 0.17898). An independent sample t-test

was conducted on the rescaled scores to compare the means (Table 4.7), which showed a

significant difference in mean level scores between perceived belonging and UBQ

belonging ($t_{327.889}$ = -5.163, $p < .001$), indicating that, despite significant overlap, the two

scales do not measure exactly the same construct.

Table 4.6

Rescaled Belonging Score Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Rescaled perceived belonging	173	.00	1.00	.5410	.22424
Rescaled UBQ belonging	173	.11	.99	.6537	.17898
Valid N (listwise)	173				

Table 4.7

Independent Sample t-Test Rescaled Belonging Indicators

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
| | | | | | | | | | 95% Confidence Interval of the Difference | |
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Score	Equal variances assumed	7.499	.006	-5.163	344.000	.000	-.11262	.02181	-.15552	-.069712
	Equal variances not assumed			-5.163	327.889	.000	-.11262	.02181	-.15553	-.06971

**. Results are significant at the 0.01 level (2-tailed).

The next sub-question under RQ1 looks to determine if levels of belonging to the

institution differ among students from different demographic groups according to both

perceived belonging and UBQ scores. The demographic groups of interest here are

gender and race and ethnicity, both of which were collected on the survey but were

optional for participants to provide. Earlier in this chapter, group statistics were presented

in Table 4.3 on participants' gender, indicating that 166 students identified as either

female or male. Due to low numbers of students identifying as other gender categories,

only female and male groups were explored for this particular data analysis. Table 4.8

shows the mean perceived belonging and UBQ scores for the 166 participants who

identified as female or male on the survey, demonstrating that female participants

reported slightly higher levels of belongingness than male participants across both

indicators. Female participants had a mean perceived belonging score 16.10 (SD = 4.232)

compared to male participants, who had a mean score of 15.15 (SD = 5.312). On the

UBQ, female participants had a mean score of 71.54 (SD = 12.299), and male

participants had a mean score of 70.76 (SD = 14.887).

Table 4.8

Perceived Belonging and UBQ by Gender

Gender	N	Mean	Std. Deviation	Std. Error Mean	Mean of Average Score
UBQ score					
Female	120	71.54	12.299	1.123	3.22
Male	46	70.76	14.887	2.195	3.03
Perceived belonging score					
Female	120	16.10	4.232	.386	2.98
Male	46	15.15	5.312	.783	2.95

To compare levels of belonging between female and male participants, an

independent sample *t*-test was used. Table 4.9 presents the results of the test, which

indicate there was not a significant difference in mean perceived belonging scores

between females and males ($t_{68.030} = 1.085$, $p = .282$). Similarly, there was not a

significant difference in mean level scores between females and males when considering

the UBQ scores ($t_{164} = .345$, $p = .731$).

Table 4.9

Independent Sample t-Test for Gender/Perceived and UBQ Scores

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
UBQ score									
Equal variances assumed	1.266	.262	.345	164.000	.731	.781	2.265	-3.691	5.253
Equal variances not assumed			.317	69.821	.752	.781	2.465	-4.136	5.698
Perceived belonging score									
Equal variances assumed	4.611	.033	1.200	164.000	.232	.948	.790	-.611	2.507
Equal variances not assumed			1.085	68.030	.282	.948	.873	-.795	2.691

**. Results are significant at the 0.01 level (2-tailed).

To further address this sub-question, data on race and ethnicity and belonging scores were explored. Similar to the data collected on gender, students were not required to provide this information, nor were there enough responses in each category to generate groups large enough to explore. Earlier in this chapter, Table 4.1 provides participant demographics, including statistics on participants' race and ethnicity, indicating 78.5% of participants identified as White. Data was recoded for this test to compare belonging scores of White students to students who identified in all other categories. Table 4.10 shows that White students had higher belonging scores across both indicators, scoring a

mean perceived belonging score of 16.33 (SD = 4.371) and a mean UBQ score of 72.37

(SD = 12.249). Students in all other race and ethnicity categories had a mean perceived

belonging score of 13.59 (SD = 4.3), almost 3 points lower than their White counterparts.

On the UBQ, students in all other race and ethnicity categories had a mean score of 65.59

(SD = 14.37), indicating a flatter distribution and more students within a larger range of

scores.

Table 4.10

Perceived Belonging and UBQ UA by Race/Ethnicity

Race/Ethnicity	N	Mean	Std. Deviation	Std. Error Mean	Mean of Average Score
Perceived belonging score					
White	135	16.33	4.371	.376	3.27
All other categories	34	13.59	4.300	.737	2.72
UBQ score					
White	135	72.37	12.249	1.054	3.02
All other categories	34	65.59	14.370	2.464	2.73

As in the test comparing belonging scores of gender groups, an independent

sample *t*-test was used to compare mean scores for race and ethnicity groups. Table 4.11

presents the result of this independent sample *t*-test, which indicates that given our

significance level, α = 0.05, there is a significant difference in both mean perceived

belonging scores (t_{167} = 3.283, p = .001) and UBQ scores (t_{167} = 2.784, p = .006),

indicating that White students reported higher levels of belongingness than students from

all other categories.

Table 4.11

Independent Samples t-Test for Race/Ethnicity and Perceived/UBQ UA

	Levene's Test for Equality of Variances		t-Test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Perceived belonging score									
Equal variances assumed	.008	.930	3.283	167.000	.001	2.745	.836	1.095	4.396
Equal variances not assumed			3.316	51.547	.002	2.745	.828	1.083	4.407
UBQ score									
Equal variances assumed	.464	.497	2.784	167.000	.006	6.782	2.436	1.972	11.592
Equal variances not assumed			2.530	45.805	.015	6.782	2.680	1.386	12.178

**. Results are significant at the 0.01 level (2-tailed).

In summary, the first research question guiding this study asked about the extent to which students reported belonging to the university and whether some demographic groups reported higher levels of belonging. This question was addressed entirely with quantitative data, and the findings indicate that distance students are reporting levels of belonging to the university that are encouraging. While gender does not appear to significantly impact reported levels of belonging, it is worth noting that females were represented much more than males. However, it is clear that significant differences exist in reported belonging levels among White students and students who identify with all other categories, including those who preferred not to respond to the survey question

collecting race and ethnicity data. Additionally, the perceived belonging scores and

scores on the UBQ are positively correlated, indicating that the instrument can be used to

measure sense of belonging in distance students.

RQ2: Does Sense of Belonging Play a Central Role in Distance Students' Success at the Institution?

The second research question guiding this study asked if a sense of belonging

plays a central role in distance students' satisfaction, persistence, and success at the

institution. Effectively, this explored whether sense of belonging matters in the distance

student experience, and if so, how. To address this question, both quantitative and

qualitative data from the survey were analyzed. There were two sub-questions to address

this research question:

- What is the relationship between a student's sense of belonging and their satisfaction with the university, intent to persist, and academic success? (Quan)

- When students are asked about their most positive and negative experiences as online students at OSU, to what extent do they mention experiences that involve belonging and connection versus lack of belonging and disconnection? (Qual)

To address the first sub-question, quantitative data were analyzed to determine

what the relationship is between belonging and student satisfaction, intention to persist,

and academic success. As previously discussed in the first research question, the survey

collected two measures of belonging to calculate belonging scores, the perceived

belonging score and the UBQ belonging score. Additionally, students were asked to

respond to various questions related to satisfaction, persistence, and academic success.

The first set of questions used for this analysis included two survey questions intended to

gage their overall satisfaction with OSU. One question asked students to rank their

overall satisfaction with their educational experience at OSU on a scale of 1 – 10, 1 being

extremely dissatisfied and 10 being extremely satisfied. The other question asked

students how likely they were to recommend online courses at OSU to a friend or

colleague on a scale of 1 – 10, 1 being not likely at all and 10 being extremely likely,

often referred to as a "net promoter score." Table 4.12 shows that 133 participants

responded to the overall satisfaction question, with a mean score of 7.83 (SD = 1.452),

indicating a strong overall satisfaction with their experience at OSU. Figure 4.5 shows

that the distribution of overall OSU satisfaction scores is relatively normal but skewed

towards the high end of the scale. All 173 participants responded to the net promoter

question with a mean score of 8.87 (SD = 1.695), indicating a likelihood that they would

strongly recommend online learning at OSU to others. Figure 4.6 demonstrates that the

distribution of net promoter scores is relatively normal but strongly skewed toward the

top of the scale, further confirming the strong mean score. This net promoter score

corresponds to the published annual student survey results from 2019 that show a net

promoter score of 8.41 (Perez, 2019).

Table 4.12

Overall Satisfaction and Net Promoter Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Overall OSU satisfaction	133	2	10	7.83	1.452
Net promoter score	173	1	10	8.87	1.695
Valid N (listwise)	133				

Figure 4.5

Distribution of Overall OSU Satisfaction Scores
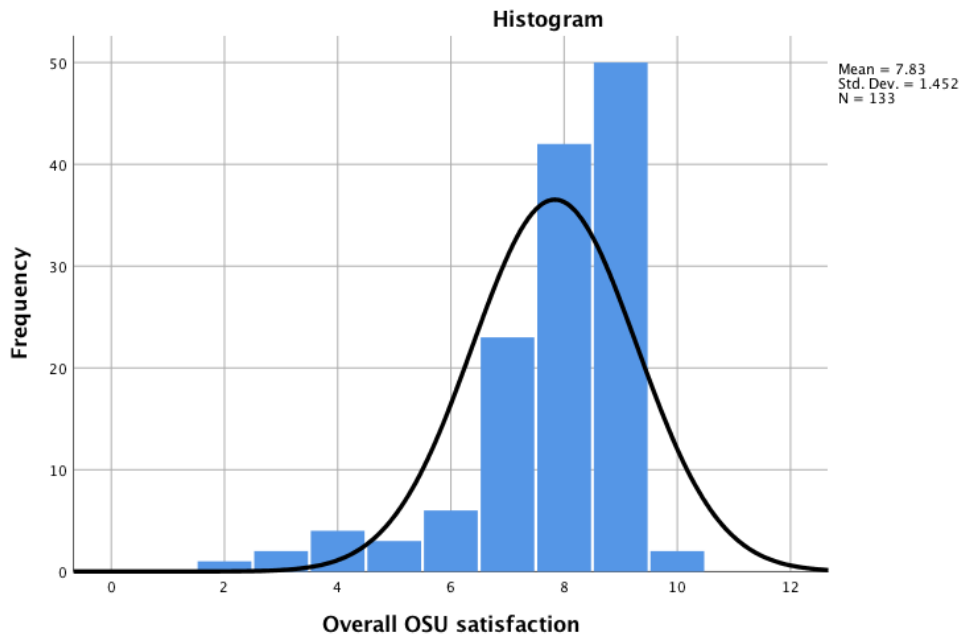
Figure 4.6

Distribution of Net Promoter Scores
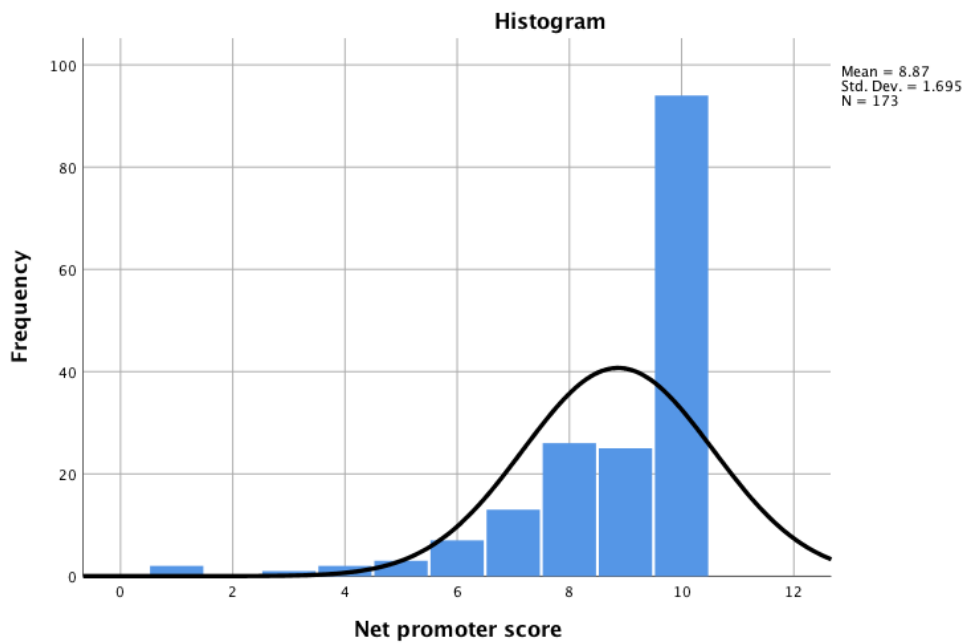
The second set of questions used for this analysis included three survey questions to determine a student's intent to persist or likelihood they would continue taking courses and complete their degree. Students were asked to indicate their level of agreement on a four-point Likert-type scale (1 = strongly disagree, 4 = strongly agree). The following statements were presented to students to gage their intent to persist: (a) I plan to register for online courses at OSU next term; (b) I am positive that I will earn a degree from OSU; and (c) I often think about dropping out of OSU's online classes. The third question was reverse coded due to the negative framing of the statement to generate an accurate intent to persist score. Table 4.13 shows scores for each statement as well as overall intent to persist scores. On a total scale of 3–12, participants achieved a mean intent to persist score of 10.72 (SD = 1.496) or an average of 3.57 on a 4-point scale. Figure 4.7 demonstrates that scores are strongly skewed towards the high end of the range and are not normally distributed in this case, indicating that more participants have a higher intent to persist than expected.

Table 4.13

Intent to Persist Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Confidence to register next term	173	1	4	3.73	.518
Confidence to earn a degree	173	1	4	3.73	.562
Considered dropping out (reverse coded)	173	1	4	3.26	.804
Intent to persist score	173	3	12	10.72	1.496
Valid N (listwise)	173				

Figure 4.7

Distribution of Intent to Persist Scores
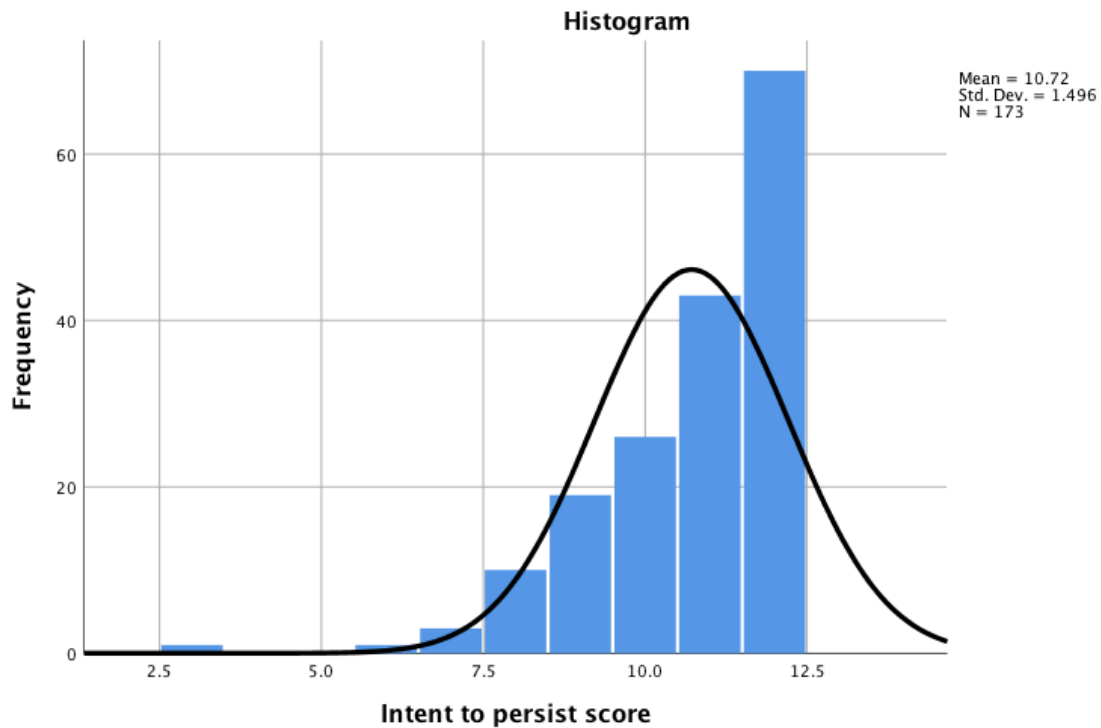
The final question used for this analysis asked participants to report their GPA in an open text box. Table 4.3 presented an average GPA of 3.44 (SD = 0.453522) for 137 participants who responded to the question. Figure 4.1 demonstrated that the reported GPA data is normally distributed.

To determine what the relationship is between belonging and student satisfaction, net promoter score, intention to persist, and GPA, correlation tests were run. The student satisfaction, net promoter, and intent to persist scores are all considered to be ordinal variables, so a Spearman's Rho correlation test was performed (Field, 2018). Conversely, GPA is treated as a continuous variable, and as such, a Pearson's correlation test was

performed (Field, 2018). The results of the Spearman correlations are presented in Table

4.14. The tests indicated that there was a significant correlation between overall

satisfaction and both perceived belonging (rs (131) = .356, $p < .001$) and UBQ scores (*rs*

(131) = .424, $p < .001$). There is also a significant correlation between net promoter score

and both perceived belonging (*rs* (171) = .440, $p < .001$) and UBQ scores (*rs* (171) =

.503, $p < .001$), as well as intent to persist and both perceived belonging (*rs* (171) = .269,

$p < .001$) and UBQ scores (*rs* (171) = .504, $p < .001$). It is worth noting, however, that

the correlation for UBQ in all three cases is stronger than the perceived belonging scores,

suggesting that the UBQ may in fact be a better measure of belonging for distance

students and a more accurate barometer for their success.

Table 4.14

Spearman's Correlations of Belonging, Satisfaction, Net Promoter, and Persistence

			Perceived Belonging Score	UBQ Score
Spearman's rho	Overall OSU satisfaction	Correlation Coefficient	.356**	.424**
		Sig. (2-tailed)	.000	.000
		N	133	133
	Net promoter score	Correlation Coefficient	.440**	.503**
		Sig. (2-tailed)	.000	.000
		N	173	173
	Intent to persist score	Correlation Coefficient	.269**	.504**
		Sig. (2-tailed)	.000	.000
		N	173	173

**. Correlation is significant at the 0.01 level (2-tailed).

The results of the Pearson correlation test are presented in Table 4.15, which indicated that there was not a significant correlation between GPA and either perceived belonging scores (r (135) = .006, p = .947) or UBQ scores (r (135) = .075, p = .387). This revealed that in the context of distance learning, sense of belonging and GPA are not related.

Table 4.15

Pearson's Correlation of Belonging and GPA

		Perceived Belonging Score	UBQ Score
OSU GPA	Pearson Correlation	.006	.075
	Sig. (2-tailed)	.947	.387
	N	137	137

**. Correlation is significant at the 0.01 level (2-tailed).

To address the second sub-question, qualitative data gathered from two of the four open-ended survey questions were analyzed. In these two survey questions, participants were asked to share both their most positive and most negative experiences as an online student at OSU. Overwhelmingly, faculty and instructors were significant impactors on the distance student experience, both negatively and positively, but many additional themes surfaced in the open-ended responses.

When asked to share positive experiences, 64 of the 166 students who responded to this survey question (38.5%) mentioned faculty or instructors in their examples of interactions, support, or communication that lead to a positive experience. These experiences included responsiveness to students' needs, showing care, prompt grading

and feedback, and other forms of showing that students mattered to faculty and

instructors. Additionally, 27 participants (16.2%) mentioned student and peer

interactions, often in the form of group work, discussion boards, and face-to-face study

abroad experiences, and 25 participants (15%) mentioned staff, advisors, or success

coaches when sharing positive experiences. While not necessarily connected to aspects of

belonging, 62 participants (37.3%) cited flexibility, accessibility, and course organization

as the most positive aspect of their online experience, indicating that for some distance

students, the nuts and bolts of their education is really where the most positive impact can

be achieved. Table 4.16 presents a sampling of participant responses to this question with

accompanying themes.

Table 4.16

Sampling of Positive Experience Quotes and Themes

Quote (emphasis added)	Theme(s)
My most positive experiences have been with the classes and opportunities offered through OSU. The classes are actual classes with detailed subject knowledge, teachers who are knowledgeable and active in their fields, and coursework that is challenging yet doable. As for the opportunities offered, I absolutely love that we as Ecampus students can go on study abroad trips, join clubs, and take certain courses that allow us to go to campus for a short period of time. These opportunities really ***make me feel like an OSU Beaver***.	Campus involvement Course material Faculty engagement University affiliation
One of the most positive aspects to attending online classes at OSU is the effort(s) made by professors and administrators to reach out and ***connect***. I have gotten the impression by many of my professors that they wanted to see me succeed.	Outreach by institution Faculty caring Faculty/Staff relations

Sampling of Positive Experience Quotes and Themes (continued)

Quote (Emphasis Added)	Theme(s)
I have a lot of health problems which makes school difficult at times. All my professors have been amazingly *supportive*. Their support makes me feel confident that I can reach my goals. I am so *proud to go to school at OSU*. As a poor, chronically ill with debilitating health issues, domestic violence survivor, single mother; having a college degree will change my life by opening doors that didn't exist to me, previously. I know I wouldn't be able to do it without the *support and encouragement from my teachers*.	Flexibility Support Encouragement Faculty/Staff relations
Professors who have *taken a keen interest in my learning* and gone to great effort to provide an environment which more closely resembles that of an on-campus classroom.	Faculty interaction Faculty/Staff relations
Consistent feedback, and timely feedback, from Instructors on my assignments. Since face-to-face communication is not available, the only means of communication are via email, canvas, and written feedback from Instructors. When I receive responses to emails in a timely manner, and constructive in-depth feedback from Instructors, *I feel that my education is important to the institution* and that my tuition dollars are respected, as I could have chosen an alternate University.	Faculty communication Faculty/Staff relations
The *inclusion of ecampus students in the University*. There are many opportunities for ecampus students to get involved and participate in clubs at the University. Professors also do an outstanding job at treating students like they are actually students and not just a nuisance to them.	Inclusion Involvement Faculty/Staff relations University support and acceptance
I did a *Cuba Learning Abroad class*, and enjoyed it immensely. That was the only time I actually met any other students or faculty. Also, I do enjoy my advisor, we do video chats, maybe once or twice a year. Otherwise, some classes have been very positive with the material they were teaching and what I got out of it. Specifically I remember a required [major] class re: [list of course names]	Study abroad University affiliation Faculty/Staff relations
I received a tassel with a note that said, "You made it this far, now keep going"	University affiliation University support and acceptance

Additionally, structural coding of these responses revealed that 46 students

(27.71%) shared components similar to that which the UBQ Faculty and Staff Relations

subscale measures, 14 students (8.43%) shared components similar to that which the

UBQ University Support and Acceptance subscale measures, and only 8 students (4.21%)

shared components similar to that which the UBQ University Affiliation subscale

measures.

When students were asked about their most negative experience as an online

student at OSU, an overwhelming 59 of the 162 students who responded to this survey

question (36.4%) mentioned faculty or instructors in their answer. These answers took

many forms, mostly including stories about lack of engagement and presence in the

courses and not providing timely feedback or responding to questions about assignments

or course material. However, other stories cited faculty and instructors whose attitudes

either about teaching online or disrespect for online education had created an

uncomfortable learning environment for students. Additionally, 13 participants (8%)

mentioned student interactions, primarily in the form of lack of engagement and

connection in their negative experiences; 12 participants (7.4%) specifically mentioned

isolation, lack of community, or a disconnect from the institution or campus as a negative

experience; and only 5 participants (3%) mentioned staff members, primarily advisors, in

their negative experiences. Table 4.17 presents a sampling of participant responses to this

question with accompanying themes.

Table 4.17

Sampling of Negative Experience Participant Quotes and Themes

Quote (emphasis added)	Theme(s)
As much as the school tries to add as much variation of subjects for online students to take, there are still a limit in which being a distant student can be part of. Many lab based subjects are not available, and of course ***it is not possible to be part of*** many of the exciting extra-curricular programs that would be amazing (sports, music, fraternities, etc.)	Limited course options Limited extra-curricular options University support and acceptance
My most negative experience was with an instructor for [course name], where the instructor did not give video lectures, respond to discussion questions, or reply to emails. I don't believe classes should be offered if ***the student never hears the instructors voice, sees them, or has any real interaction with them***. This one class almost made me drop out of college. My statements below would have been much more positive without the experience of this one class. I reached out to ecampus student services, but that did not change the experience.	Faculty not present Faculty/Staff relations
As an Ecampus student, I find it frustrating that all of the suggested internships, employment opportunities and some scholarship options are ***all focused on Oregon residents***. I would like to see more options for my location and broader opportunities for all students.	Inclusive opportunities University support and acceptance
My most negative experiences have been the feeling of ***loneliness*** and not being able to make new friends due to everything being online.	Isolation University affiliation
It is sometimes incredibly difficult to get in contact with instructors or even other students for help. We can't just walk up to an instructor after class for a quick question, and most online students are people who are full time parents and employees (or even both) and it's hard to catch them for clarification or feedback on assignments. I have had numerous experiences where I have emailed instructors and *haven't heard back from them in days*--even though in their syllabus it states (usually) a response should arrive within 24 hours.	Faculty communication Response times Faculty/Staff relations
The only issues are more student interaction among peers to be required, better career opportunities and please allow distance education students to use the option to pay for incidental fees to attend sporting events.	Student interaction Career planning Extra-curricular University affiliation
Some instructors don't get back to you quickly. In fact I had one who ***didn't really participate*** in the class. We all felt like the hated step child. I passed the class but it still would have been nice to have a bit more communication and interaction from the instructor.	Faculty not present Response time Faculty/Staff relations

Additionally, structural coding of these responses revealed that 39 students

(24.07%) shared components similar to that which the UBQ Faculty and Staff Relations

subscale measures, 15 students (8.64%) shared components similar to that which the

UBQ University Support and Acceptance subscale measures, and only 13 students

(8.02%) shared components similar to that which the UBQ University Affiliation

subscale measures. In summary, when distance students are asked about their most

positive and negative experiences, themes of engagement, mattering, and isolation

emerge primarily connected to faculty, students, and the institution.

RQ3: What Can the Institution do to Promote a Sense of Belonging in Distance Students?

The third and final research question guiding this study asked what the institution

can do to promote sense of belonging among distance students. Effectively, this explored

the role that the institution plays in facilitating sense of belonging in students and how it

can be done better. Three sub-questions helped to address this research question:

- What institutional factors are associated with students' sense of belonging at OSU? (Quan)

- To what extent do students' experiences with those institutional factors differ for those from different demographic groups, specifically by gender and race and ethnicity? (Quan)

- When students are asked about their experiences of belonging and disconnection to the institution, what themes about institutional factors emerge? (Qual)

The first sub-question, which asked what institutional factors were associated

with distance students' belonging at OSU, required exploring the three UBQ subscales—

University Affiliation (UA), University Support and Acceptance (USA), and Faculty and

Staff Relations (FSR)—and comparing correlations among the subscales as well as to

perceived belonging scores. The UBQ UA subscale specifically asked students to respond

to 12 statements about their connections to campus—school colors, athletics, meeting

alumni, pride in the institution, having branded materials, establishing relationships

within the university, and sharing about the school with others—and other students at the

institution and in their major. The UBQ USA subscale is used to measure overall support

and general acceptance provided by the institution by asking students to respond to eight

statements about the opportunities they had to grow, have diverse experiences, use

supportive resources, engage in meaningful activities, and have their own cultural

customs accepted at the university. The UBQ FSR subscale specifically asked students to

respond to four statements about their connections to faculty and staff at the institution.

Table 4.18 presents participant data for each of the UBQ subscales. On the UBQ UA

subscale, participants scored a mean of 33.72 (SD = 7.186) and a 2.81 mean average of

scores, suggesting moderate university affiliation. Figure 4.8 demonstrates a normal

distribution of UBQ UA scores. On the UBQ USA subscale, participants scored a mean

of 25.00 (SD = 4.218) and a 2.50 mean average of scores, indicating a strong sense of

university support and acceptance. Figure 4.9 demonstrates a normal distribution of UBQ

USA scores with a slight skew toward the top of the scale. On the UBQ FSR, participants

scored a mean of 12.34 (SD = 3.028) and a 3.09 mean average of scores, indicating a

stronger reporting of quality relationships with faculty and staff. Figure 4.10

demonstrates a normal distribution of UBQ FSR scores with a slight skew toward the

high end of the scale.

Table 4.18

UBQ Subscale Statistics

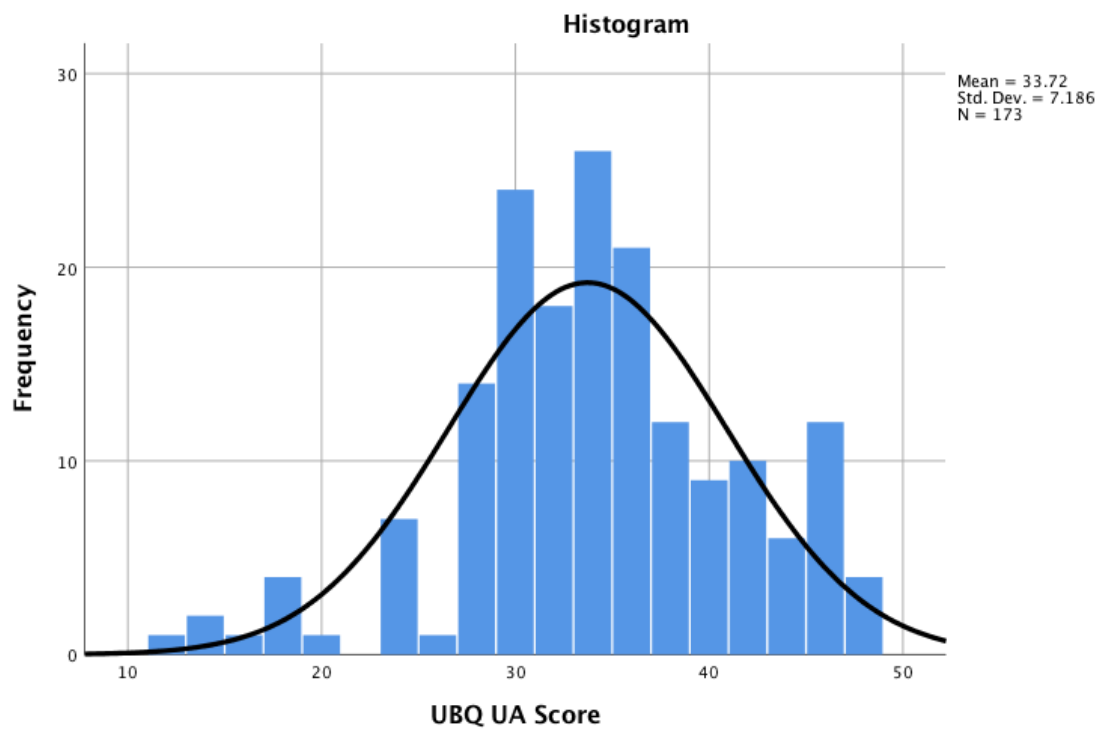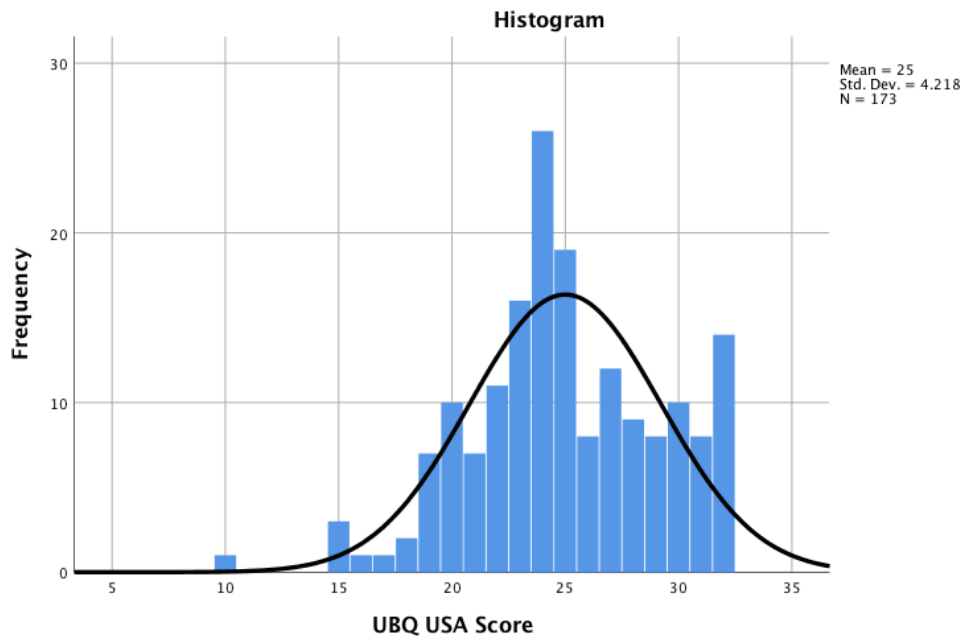|	N	Minimum	Maximum	Mean	Std. Deviation	Mean of Average Score
UBQ UA score	173	12	47	33.72	7.186	2.81
UBQ USA score	173	10	32	25.00	4.218	2.50
UBQ FSR score	173	4	16	12.34	3.028	3.09
Valid N (listwise)	173					

Figure 4.8

Distribution of UBQ UA Scores

Figure 4.9

Distribution of UBQ USA Scores

Figure 4.10

Distribution of UBQ FSR Scores
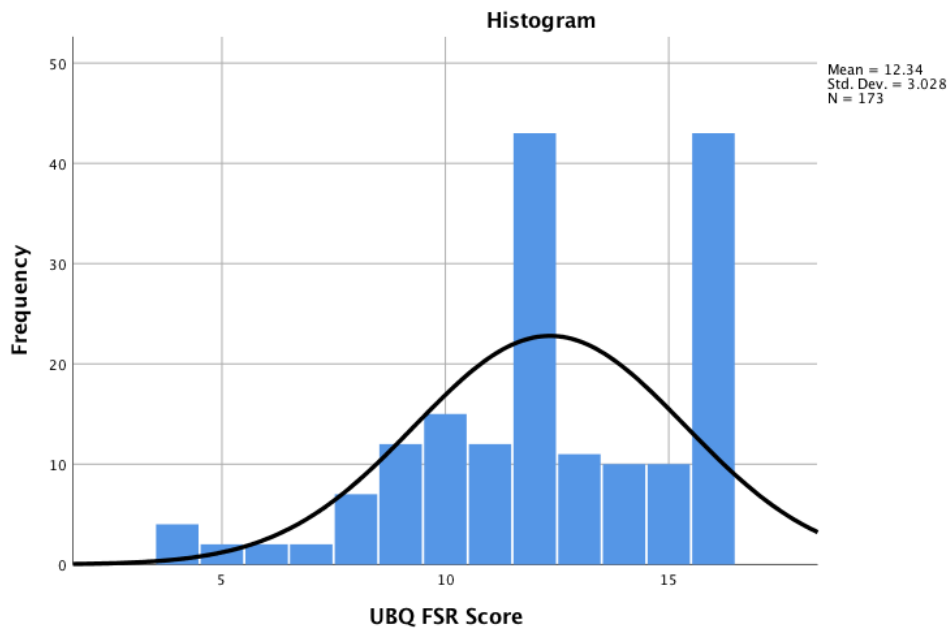
To determine what association exists among the three UBQ subscales as well as between the subscales and participants' sense of belonging, correlation tests were used. To compare UBQ subscales, a Pearson's correlation test was used (Table 4.19). The tests show that the most significant correlation among subscales is that of UA and USA (r (171) = .722, $p < .001$), followed closely by USA and FSR (r (171) = .714, $p < .001$), and then finally UA and FSR (r (171) = .585, $p < .001$).

Table 4.19

Pearson's Correlation Between UBQ Subscales

	UBQ UA Score	UBQ USA Score	UBQ FSR Score
UBQ UA score			
Pearson Correlation	1	.722**	.585**
Sig. (2-tailed)		.000	.000
N	173	173	173
UBQ USA score			
Pearson Correlation	.722**	1	.714**
Sig. (2-tailed)	.000		.000
N	173	173	173
UBQ FSR Score			
Pearson Correlation	.585**	.714**	1
Sig. (2-tailed)	.000	.000	
N	173	173	173

**. Correlation is significant at the 0.01 level (2-tailed).

Next, because the range of scales in this comparison was different, a Spearman's correlation test was conducted (Table 4.20). The Spearman's test shows that the perceived belonging score is most significantly correlated with UBQ USA (rs (171) = .578, $p < .001$), followed by UBQ UA (rs (171) = .555, $p < .001$), and then UBQ FSR (rs (171) = .499, $p < .001$), indicating that experiences of university support and acceptance were most impactful to a student's perceived belonging score. Most importantly, all three institutional factors show significant correlation with students' belonging, indicating that university affiliation, experiences of university support and acceptance, and relationships with faculty and staff all play a critical role in facilitating belonging in distance students.

Table 4.20

Spearman's Correlation for Perceived Belonging and UBQ Subscales

			UBQ UA Score	UBQ USA Score	UBQ FSR Score	Perceived Belonging Score
Spearman's rho	UBQ UA score	Correlation Coefficient	1.000	.681**	.495**	.555**
		Sig. (2-tailed)	.	.000	.000	.000
		N	173	173	173	173
	UBQ USA score	Correlation Coefficient	.681**	1.000	.693**	.578**
		Sig. (2-tailed)	.000	.	.000	.000
		N	173	173	173	173
	UBQ FSR score	Correlation Coefficient	.495**	.693**	1.000	.499**
		Sig. (2-tailed)	.000	.000	.	.000
		N	173	173	173	173
	Perceived belonging score	Correlation Coefficient	.555**	.578**	.499**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	173	173	173	173

**. Correlation is significant at the 0.01 level (2-tailed).

The second sub-question asked to what extent do students' experiences with these institutional factors—university affiliation, university support and acceptance, and faculty and staff relations—vary from different demographic groups, specifically by gender and race and ethnicity. The first demographic group analyzed was gender, which due to small numbers of participants in other groups, was only explored by female and male groups.

Table 4.21 presents group statistics on all three UBQ subscales by gender, showing that

females had higher mean scores for both USA (M = 25.35, SD = 4.087) and FSR (M =

12.41, SD = 6.780) compared to males (M = 24.43, SD = 4.627; M = 12.22, SD = 3.204).

However, males had a higher mean score for UA (M = 34.11, SD = 8.418) compared to

females (M = 33.78, SD = 6.780). It is worth noting, however, that the differences appear

to be slight and require a test for mean level difference.

Table 4.21

UBQ Subscale Group Statistics by Gender

Gender	N	Mean	Std. Deviation	Std. Error Mean	Mean of Average Score
UBQ UA score					
Female	120	33.78	6.780	.619	2.82
Male	46	34.11	8.418	1.241	2.84
UBQ USA score					
Female	120	25.35	4.087	.373	3.17
Male	46	24.43	4.627	.682	3.05
UBQ FSR score					
Female	120	12.41	3.039	.277	3.10
Male	46	12.22	3.204	.472	3.05

To determine if there is a significant mean level difference, an independent

sample *t*-test to compare means of all three UBQ subscale scores between females and

males was conducted. Table 4.22 presents *t*-test results by gender for all subscales. The

independent sample *t*-test indicates that there is not a significant mean level difference in

scores between females and males on any of the three UBQ subscales—UBQ UA (t_{164} = -

.258, p = .797), UBQ USA (t_{164} = 1.244, p = .215), and UBQ FSR (t_{164} = .357, p = .722).

In summary, gender did not appear to have an impact on students' UBQ subscale scores,

similar to the findings presented earlier in this chapter that gender did not appear to have

an impact on students' overall UBQ scores.

Table 4.22

Independent Sample t-Test for UBQ Subscales by Gender

| | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
| | | | | | | | | 95% Confidence Interval of the Difference | |
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
UBQ UA score									
Equal variances assumed	2.689	.103	-.258	164.000	.797	-.325	1.260	-2.813	2.163
Equal variances not assumed			-.235	68.563	.815	-.325	1.387	-3.092	2.442
UBQ USA score									
Equal variances assumed	.199	.656	1.244	164	.215	.915	.736	-.537	2.368
Equal variances not assumed			1.177	73.455	.243	.915	.778	-.634	2.465
UBQ FSR score									
Equal variances assumed	.005	.942	.357	164.000	.722	.191	.535	-.865	1.247
Equal variances not assumed			.349	77.895	.728	.191	.548	-.900	1.282

The next demographic group explored was race and ethnicity. As mentioned previously, due to small numbers of participants in other groups, race and ethnicity data were explored by two categories, "White" and "all other categories." Table 4.23 presents group statistics on all three UBQ subscales by race and ethnicity, showing that White students scored higher on every UBQ subscale—UA (M = 34.29, SD = 6.921), USA (M = 25.45, SD = 3.903), and FSR (M = 12.63, SD = 2.833)—than students who identified in all other categories—UA (M = 31.26, SD = 8.095), USA (M = 23.24, SD = 4.942), and FSR (M = 11.09, SD = 3.476). The standard deviations of scores of students from all other categories were also higher, indicating a flatter distribution and larger range of scores, compared to students who identified as White. This data pointed to a difference in mean level between groups, which required further statistical analysis.

Table 4.23

UBQ Subscales Group Statistics by Race and Ethnicity

Race/Ethnicity	N	Mean	Std. Deviation	Std. Error Mean	Mean of Average Score
UBQ UA score					
White	135	34.29	6.921	.596	2.86
All other categories	34	31.26	8.095	1.388	2.61
UBQ USA score					
White	135	25.45	3.903	.336	3.18
All other categories	34	23.24	4.942	.848	2.91
UBQ FSR score					
White	135	12.63	2.833	.244	3.16
All other categories	34	11.09	3.476	.596	2.77

To determine if there was a significant mean level difference, an independent sample t-test to compare means of UBQ subscale scores between White students and students identifying in all other race categories was conducted. Table 4.24 presents the results of the independent sample t-test for all three subscales, which indicate that there was a significant mean level difference in all three subscale scores between White students and students who identified in all other race categories—UA (t_{167} = 2.199, p = .029), USA (t_{167} = 2.797, p = .006), and FSR (t_{167} = 2.704, p = .008). In summary, participants' race and ethnicity significantly impacted all three UBQ subscale scores.

Table 4.24

Independent Sample t-Test for UBQ Subscales by Race and Ethnicity

| | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | | |
| | | | | | | | | 95% Confidence Interval of the Difference | |
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
UBQ UA Score									
Equal variances assumed	.281	.597	2.199	167.000	.029	3.024	1.375	.309	5.740
Equal variances not assumed			2.002	45.883	.051	3.024	1.511	-.017	6.065
UBQ USA Score									
Equal variances assumed	2.140	.145	2.797	167.000	.006	2.217	.792	.652	3.781
Equal variances not assumed			2.431	43.914	.019	2.217	.912	.379	4.054
UBQ FSR Score									
Equal variances assumed	.746	.389	2.704	167.000	.008	1.541	.570	.416	2.667
Equal variances not assumed			2.393	44.657	.021	1.541	.644	.244	2.839

The final two qualitative survey questions used in the survey address the third sub-question. The survey asked students to share both a time when they felt a real sense of belonging or connection to the university and a time when they felt a sense of disconnection or being an outsider to OSU. In total, 134 students provided a response to the question asking them to share a story of belonging. In those stories, 45 students (33.5%) shared components similar to that which the UBQ University Affiliation subscale questions address, 27 students (16.4%) shared components similar to that which the UBQ Faculty and Staff Relations subscale measures, and 16 students (11.9%) shared components similar to that which the UBQ University Support and Acceptance subscale measures. Additionally, 32 students (23.8%) used words and terms close to belonging, such as mattering, caring, being valued, connecting, being remembered, and common experiences, when sharing about a time when they felt they belonged at the institution. Most surprisingly, 26 participants (19.4%) specifically cited university events as a time when they felt a sense of belonging. University events included visiting campus for a variety of reasons, including sporting events, while on vacation, to attend a course, or to take a tour. Other events mentioned that occurred off campus included study abroad programs, hybrid courses at satellite campuses, field courses, and sporting events. This category also included campus-based clubs and organizations that welcomed distance students to attend club meetings and events remotely via video conferencing technology. There were also 17 participants (12.6%) who responded that they had either never experienced a sense of belonging to the university or that it simply didn't matter to them as a distance student. Table 4.25 presents a sampling of participant responses to this question and corresponding themes.

Table 4.25

Sampling of Belonging Experience Quotes and Themes

Quote (emphasis added)	Theme(s)
I applied to study abroad in the summer with Dr. [other name]. Even though I was the only ecampus student I felt ***welcome*** and ***valuable***. I felt ***included*** as there was a program that was short enough and affordable for me to participate in.	Valued Welcomed Study abroad University affiliation University support and acceptance
Some of my [major] classes were very interactive, with lots of discussion between students and with instructor involvement. The instructor remembered people from class to class, and was very ***welcoming*** and ***inclusive***.	Student interaction Faculty interaction Faculty/staff relations Welcomed
Though I am a [major] major, I was able to connect with my Father-In-Law who received his Masters in Engineering at OSU. There have also been a few times I have had a connection with a classmate on Discussion Boards. The staff at OSU make me ***feel like I matter*** to them, and I appreciate that. I know that there are resources and help available to me at any, and all times. Oh, and when I received the tassel in the mail after I enrolled. That was a small gesture that made me feel that OSU was really invested in my success as a student.	Student interaction Staff/services Mattering Alumni University affiliation University support and acceptance
I didn't feel connected to OSU until I met Dr. [other name]. She took a ***personal interest*** in me.	Faculty interaction Mattering Faculty/Staff relations
I feel connected to OSU whenever I am in contact with the ecampus success team. The success coaches and the team staff have always made me feel ***a part of OSU***. They have advocated for me which has given me a sense of belonging. I felt connection at the hybrid course Portland campus and recently when a co-worker mentioned they were also taking online courses with OSU.	Student services Advocacy Mattering Faculty/Staff relations
It's the classes where the instructors are particularly involved that gives me a sense of connection. This involvement can be through commenting on assignments and discussion boards or even having lectures recorded in their voices.	Faculty engagement Faculty communication Faculty/staff relations

Sampling of Belonging Experience Quotes and Themes (continued)

Quote (emphasis added)	Theme(s)
After the weather crisis that devasted my farm, the staff and teachers at OSU really went out of their way to ***support*** me in every way possible while I struggled to finish out the term. They stepped up and let me know that they were in my corner and then they showed me that they were sincere with their actions.	Mattering/Caring Support Faculty/Staff relations University Support and Acceptance
I am very ***proud to wear my OSU apparel*** even though I am far from Oregon. When I do I feel connected to my university. That feeling gets stronger whenever people ask me about OSU and I get to talk about OSU.	Pride University affiliation
When OSU sent out the letters and tassels reminding E campus undergrads that they could reach their goals, I was overcome with a sense of belonging that almost made me cry. It was exactly what I needed at that time as I was feeling overwhelmed.	Belonging Caring University Support and Acceptance
I was able to go on the Mountains to Sea: Ecosystems of Chile ***study abroad*** trip over spring break last year. Being able to connect with other students of my major, and other like majors, made me feel like I was going to the right school because there were other people with the same career goals as me. In addition, I made fast friends and the professors ***cared about me***--my learning, my life, my goals, etc. that week. This made me feel even more connected to the school and thankful that I have the opportunity to be an OSU Beaver.	Student interaction Faculty interaction Similar goals Study abroad Caring/mattering University affiliation Faculty/Staff relations
I'd have to say that the one time I truly felt a sense of belonging was when I flew to Oregon to attend a weekend course on [course name].	Belonging Visiting campus University affiliation

Participants were also asked to share a time they felt a sense of disconnection, yielding 155 participant responses. In those responses, 29 students (18.7%) shared components similar to that which the UBQ University Affiliation subscale questions address, 21 students (13.54%) shared components similar to that which the UBQ University Support and Acceptance subscale measures, and 21 students (13.54%) shared components similar to that which the UBQ Faculty and Staff Relations subscale

measures. Additionally, 24 participants (15.48%) voiced that the online modality simply

was not conducive to fostering a sense of belonging for distance students or was

prohibitive in nature to creating that feeling of connection. Similar to other questions, 17

participants (10.96%) mentioned learning about campus events or activities, not having

access to those events or activities, or simply not having the opportunity to visit campus

as a critical experience of disconnect for them. Similar to the previous question, 16

participants (10.32%) indicated that they couldn't recall a time when they felt specifically

disconnected or a lack of belonging to the institution, and 8 participants (5.16%) voiced

that sense of belonging and connection was either not important or didn't matter to them

as a distance student. Table 4.26 presents a sampling of quotes and corresponding themes

from this question.

Table 4.26

Sampling of Lack of Belonging Experience Quotes and Themes

Quote (emphasis added)	Theme(s)
Struggling in my courses and only one out of three professors reached out to me when I dropped off the radar.	Mattering Faculty caring Faculty/Staff relations
Generally speaking, I feel like online students are used to bankroll the institution. A stronger effort needs to be made on improving student life for online students. However, I still consider OSU to have a top online program.	Mattering Student life University affiliation
That's been most of my experience. Between work and school, and being a commuter student, I can't connect to the campus community. When there are events I can't attend, I feel really *disconnected*.	Work life balance University affiliation
I feel a *disconnection* when there are seminars, workshops, etc. that sound interesting but they are available only on campus and I cannot be there to experience them.	Resources University support and acceptance

Sampling of Lack of Belonging Experience Quotes and Themes (continued)

Quote (emphasis added)	Theme(s)
Whenever OSU posts [major] clubs, speakers, opportunities, internships, and jobs, I am for sure an ***outsider***. Why would you let us know about these great opportunities that I miss out on? It just underscores my ***disconnection***.	Disconnection On-campus events University support and acceptance
I prefer to not have direct involvement at this point in my life. That is why I am taking online classes.	No desire for connection
Any time I try to come on campus I feel like an ***outsider***. I cannot use Dixon or any exercise facilities nor can I use student health services except for the Counseling. There's never any invites or on campus events for online students. I live in Corvallis but have never felt more ***alienated***.	On-campus services/events Alienated University affiliation University support and acceptance
It's been hard connecting to students and ***developing relationships***. It seems most don't want to meet up and develop and continue the sense of OSU community.	Community Student interaction University affiliation
In a class where the assignment grades and feedback were delayed for weeks. It gave me the impression that Ecampus was not a ***priority*** of the instructor	Faculty communication Mattering Faculty/Staff relations
One of my professors offered me to stop by her lab if I ever found myself on the Corvallis campus. While this was an amazing offer, I have never actually been to OSU and probably will not make it up there, which made me feel the downsides of being an only online student. Perhaps more opportunities like this should be offered to Ecampus students. More invitations to orientation week, more courses that have a week of study on campus, more invitations to tour and be a part of on campus research. While this may be impossible for some, and hard for others to take advantage of, even just the offer makes an attempt to bridge the gap between tradition[al] and Ecampus student experiences.	University support and acceptance On-campus events

Summary of Key Findings

There are five key findings from this study. First, there was significant correlation between the two instruments used to measure belonging, indicating that the UBQ has the potential to be used to measure belonging in distance students (RQ1). Second, analyses showed that the UBQ score was strongly correlated with students' overall satisfaction, net promoter score, and intent to persist, demonstrating a relationship between student success and sense of belonging (RQ2). Third, both quantitative and qualitative data indicate that faculty and staff relationships play a critical role in facilitating belonging in distance students (RQ3a & c). Fourth, many students reported university events as a time when they felt most connected to the institution as a distance student (RQ3a & c). University events included visiting campus for a variety of reasons, including sporting events, while on vacation, to attend a course, or to take a tour. Finally, White students and students of other race/ethnicity groups scored significantly different mean scores of belonging, indicating that students of color may have a harder time developing a sense of belonging in online environments similar to trends we see in traditional on-campus environments (RQ1c & RQ3b).

Chapter 5 presents a brief summary of this study and research questions, reviews major findings, presents implications of the findings and recommendations, identifies limitations of the study, and suggests areas for future research.

Chapter Five: Implications

The purpose of this mixed methods study was to examine sense of belonging to the institution in online learners: if it matters to them, how they experience belonging as distance learners, and what role the institution plays in fostering belonging. Furthermore, this research study examined the relationship between online learners' perceived and measured sense of belonging to confirm that further exploration into the phenomena of belonging in distance learners is warranted. The research questions guiding this study were:

1) To what extent do distance students report a sense of belonging to the institution?

   a. What are the average levels of sense of belonging to the institution that students are reporting, according to the direct questions about belonging and the University Belonging Questionnaire (UBQ)?

   b. Are the two indicators of belonging, direct questions about belonging and the UBQ, significantly correlated or significantly different in mean level?

   c. Do levels of belonging to the institution differ for students from different demographic groups (gender and students of color), according to both the direct questions about belonging and the UBQ?

2) Does a sense of belonging play a central role in distance students' satisfaction, persistence, and success at the institution?

   a. What is the relationship between a student's sense of belonging and their satisfaction with the university, intent to persist, and academic success?

   b. When students are asked about their most positive and negative experiences as online students at OSU, to what extent do they mention experiences that involve belonging and connection versus lack of belonging and disconnection?

3) What can the institution do to promote a sense of belonging in distance students?

   a. What institutional factors are associated with students' sense of belonging at OSU?

     b. To what extent do students' experiences with those institutional factors differ for those from different demographic groups, specifically by gender and race and ethnicity?

     c. When students are asked about their experiences of belonging and disconnection to the institution, what themes about institutional factors emerge?

Data for this study were gathered at Oregon State University (OSU), a large public land-grant university offering nationally ranked online degree programs through their Ecampus division. At the time of this study, OSU enrolled over 10,000 purely distance undergraduate and graduate students each year, located in all 50 states and more than 50 countries around the world. It was chosen as the research site because of the researcher's access to data and participants. The researcher was serving in the role of director of student success at OSU Ecampus and overseeing the unit and staff responsible for providing students services and success initiatives at the time of this study. Data were collected via an online survey in which eligible students were invited to participate during the summer of 2019. Eligible students were defined as those who:

- Were an undergraduate degree-seeking student;

- Were coded as a purely distance student (DSC campus code in the Student Information System), meaning the student was pursuing a degree completely online;

- Were enrolled in either spring 2019 or summer 2019 quarters; and

- Had completed a minimum of 24 credits at OSU (demonstrating enough time at the university to have a good sense of their experience and belonging to the institution).

The online survey was open for four weeks, and all students received an initial invitation and two reminder emails before it closed, resulting in 173 complete responses. The survey consisted of 44 questions, including 24 questions from the UBQ (Slaten et al.,

2018), 5 questions to measure perceived belonging explicitly, 3 questions to measure

intent to persist, one question on overall satisfaction, one question on likelihood of

recommending OSU to a friend or colleague, 4 open-ended questions asking students to

share their experiences connected to online learning and belonging, and 5 questions

collecting demographic information. Quantitative data collected from the survey

responses were analyzed using SPSS, and qualitative data was analyzed using structural

and open coding.

Five major findings are highlighted in this chapter for discussion. First, and most

foundational to the study, the results of the Pearson correlation (r (171) = .572, $p < .001$)

indicated that there was a **significant correlation between students' perceived**

belonging score and their UBQ belonging score (RQ1). As expected, UBQ scores are

higher than perceived belonging scores, as the UBQ is extensively in-depth and takes into

consideration many factors surrounding belonging to generate a score. This demonstrates

potential for the UBQ instrument to be used to measure belonging in distance students in

future studies and that the subscales used on the UBQ—university affiliation, faculty and

staff relations, and university support and acceptance—are meaningful to distance

students' sense of belonging as well for traditional students. As it stands, there is not a

tool that is explicitly designed to measure distance student sense of belonging, so this

finding is significant to those who seek to further research and assess belonging in this

population.

Second, this study confirmed that **distance students experienced a sense of**

belonging and that it is strongly correlated with students' overall satisfaction, net

promoter score, and intent to persist, but it is not correlated with GPA (RQ2). The

results of the Spearman correlation indicated that there was a significant correlation between UBQ scores and overall satisfaction (rs (131) = .424, *p* < .001), net promoter score (rs (171) = .503, *p* < .001), and intent to persist (rs (171) = .504, *p* < .001). This finding, especially the connection of belonging to persistence, confirms other research that has concluded that online students' sense of belonging positively influences their ability and intent to persist in their pursuit of higher education (Hausmann et al., 2007; Merriam & Bierema, 2014).

Third, both quantitative and qualitative data analyzed in this study indicated that **faculty and staff play a critical role in facilitating sense of belonging to the institution in distance students** (Q3a & c). Quantitatively, the UBQ FSR scores were positively correlated with perceived belonging (r (171) = .530, p < .001) and UBQ total belonging scores (r (171) = .795, *p* < .001). In open-ended questions requesting that students share either positive or negative experiences, participants overwhelmingly mention faculty members or instructors in their experiences, demonstrating that good or bad, faculty are significant contributors to the belonging experience of distance students. While much of the belonging research on university students tends to clearly articulate the value of peer relationships in facilitating belonging, much can also be said about the faculty and staff role in distance student belonging. Research has cited the importance of faculty relationships in the retention of online learners, but few tie that importance to concepts of belonging and mattering (Brown et al., 2015; Lehman & Conceicao, 2014). Additionally, many of the themes found in participant responses aligned with Schlossberg's (1989) aspects of mattering, specifically acceptance, importance, and ego-

extension—the belief that someone else will be proud of their success or sympathize with their failures.

Fourth, **many students reported university events as a time when they felt most connected to the institution as a distance student** (RQ3 a & c). University events included visiting campus for a variety of reasons, including sporting events, while on vacation, to attend a course, or to take a tour. Other events mentioned that occurred off campus included study abroad programs, hybrid courses at satellite campuses, field courses, and sporting events. This category also included campus-based clubs and organizations that welcomed distance students to attend club meetings and events remotely via video conferencing technology. While Lehman and Conceicao (2014) notably list physical separation at the top of the list of common reasons for online student attrition, little attention is paid to how institutions can remedy that. In participant responses, it was clear that both students and OSU were intentional about finding ways to reduce feelings of physical separation among students.

Finally, findings indicated that **White students experienced a stronger sense of belonging to the institution than students identifying as other race/ethnicity groups** (RQ1c & RQ3b). This was evident from the perceived belonging scores ($t_{167} = 3.283$, $p = .001$), UBQ UA subscale ($t_{167} = 2.199$, $p = .029$), UBQ FSR subscale ($t_{167} = 2.704$, $p = .008$, and the UBQ USA subscale ($t_{167} = 2.797$, $p = .006$). This finding is significant because it helps to inform the institution that a belonging gap exists between White students and students of other racial/ethnic groups. The finding is also consistent with belonging research done in traditional campus environments (Hurtado & Carter, 1997;

Strayhorn, 2012), and illustrates the larger problem that higher education continues to be a place that primarily welcomes those from dominant groups.

Implications and Recommendations

The problem presented in Chapter 1 of this study focuses on poor retention and completion rates among online learners. Research has shown that sense of belonging significantly impacts retention of on-campus students, but few studies have explored the phenomena of belonging in distance students, which is foundational to proposing solutions that may foster belonging in order to improve retention and completion rates of online learners, a rapidly growing sector of higher education. The purpose of this study was to better understand sense of belonging in distance learners and to identify programmatic changes that institutions may need to consider in managing online degree programs. Additionally, the researcher sought to make recommendations for the use of belonging as a tool for more effectively retaining and encouraging persistence and completion of online learners.

Programmatic Changes

Institutions vary widely in their management of online programs, from funding models to course development and faculty hiring to student services. Depending on the model, there are factors that managers may or may not have much control over. However, there are three factors worth exploring that are tied directly to faculty and their ability to foster a sense of belonging among online students—**faculty workload for online instruction, faculty training, and course evaluations.**

Restructuring faculty workload assignments for online instruction may need to be considered differently from traditional courses in order to give instructors the additional

time needed for communicating and responding to students both collectively and

individually in their online courses. The open-ended responses in this study yielded

strong feedback from students about the importance of faculty response time and

communication that was consistent with OSU's published annual student survey (Perez,

2019).

Often, faculty and administrators alike make the mistake of assuming that

teaching online takes less attention and time than teaching an on-campus course, but the

reality is often the opposite. Research has shown that instructor presence (Sithole et al.,

2019), active course facilitation and management (Martin et al., 2019), and faculty

satisfaction (Stickney et al., 2019) are all critical to quality online programming. In a

study exploring expectations and challenges for faculty teaching online courses, Sithole

et al. (2019) stated that "social presence of the instructor throughout the course is

considered one of the most important aspects of online instruction, especially when it

comes to keeping the online students connected to the class" (p. 69). The researchers

went on to assert that delayed feedback and response times lead to discouragement and

attrition for distance students. It is reasonable to suggest that students notice a lack of

instructor presence and interpret this as a message from the faculty, and sometimes the

institution, that they don't matter. Other information provided by students indicated that

when they did receive feedback or communications, they were surprised to find that

faculty did not have an understanding of what it meant for them to be a distance student,

leading to the second programmatic recommendation.

Faculty training built around informing instructors of adult and online learner

demographics, challenges, and ways to support the population should be required for

those who are assigned to teach online courses. Faculty should be aware of who they are communicating with and honoring the students they are working with. This will be more important as colleges see more on-campus students enrolling in online courses with their distance peers. It is important to distance students that faculty and staff understand who they are and what they are balancing outside of school—work, family, health, or other obligations that may get in the way. Additionally, faculty training should cover specific expectations of teaching online, such as time management for grading, regular communication or interaction with students in the course, practicing instructor presence, and providing timely feedback (Sithole et al., 2019). Trainings could be offered in the form of online courses, providing faculty with insight to the student experience. While providing in-depth trainings for instructors can be time consuming and costly, one study on faculty satisfaction in online education emphasized the importance of institutional support (Stickney et al., 2019). In addition to faculty satisfaction, the costs associated with such trainings are valuable investments that pay off in student satisfaction, and eventually revenue generated via student retention and completion. Providing faculty ample time to develop online courses and attend trainings, appropriate compensation or other incentives, and developing organizational policies that have garnered faculty support are all considered to be aspects of institutional support.

Finally, course evaluations present a few opportunities to let students know that they matter or belong. While some institutions may centralize course evaluations, others may present the opportunity to faculty to add or customize specific questions. In that case, faculty should include a question or two on their course evaluations that allow them to gather feedback on the whether or not they are fostering a sense of belonging in their

online course. While this presents a gap in the literature on course evaluations, the

researcher recommends that additional questions could include a simple rating of how

much the student felt like they belonged or mattered in the course. Open-ended questions

eliciting feedback on how the faculty member either made them feel welcomed or

disconnected could be added as well. For institutions offering less flexibility for

customized course evaluations, faculty should administer mid-course evaluations to

gather feedback from students and make timely changes instruction or curriculum.

Another simple way faculty can let students know that they matter or belong is by

following up after the course has ended to let students know that their feedback was read

and will help to inform their teaching in future classes. This could be done simply by

sending an email to the whole class thanking them for their time and feedback.

Use of Belonging as a Tool for Retention and Persistence of Online Learners

Research has shown that fostering belonging in college students positively

impacts their ability to achieve, persist, and graduate (Freeman et al., 2007; Hurtado &

Carter, 1997; Strayhorn, 2012); however, the research is primarily focused on traditional

populations attending classes on campus. To extend what is known about university

belonging into the online environment, institutions managing online programs should

develop what I call the "belonging curriculum" to fit both institutional and student needs.

Strayhorn (2012) stated that "sense of belonging is particularly meaningful to those who

'perceive themselves as marginal to the mainstream life [of college]'" (p. 10). The

belonging curriculum is a collection of intentional messaging and programming that

communicates to students that they belong at the institution, their presence matters, and

that they are supported as adult and distance learners. This curriculum should be launched

from the moment the student indicates interest in the university and should continue

beyond their graduation, even at times when the student has stopped out or unenrolled.

The belonging curriculum should be multifaceted and not just focused on student

services.

As mentioned in Chapter 2, an overarching concept found in theories of adult

learning is that practitioners should honor each student and the experience they bring

with them into the learning environment (Knowles, 1970; Merriam & Bierema, 2014).

For this reason, messaging in the belonging curriculum should be rooted in honoring

adult and distance learners while creating community and acknowledging commonality in

the challenges faced by that population. Encouragement should be offered at milestones

such as admission, enrollment, and completion of the first term and first year, as well as

re-entry to the institution after stopping out. There should be messages acknowledging

and celebrating progress and achievements, as well as interventions that are targeted to

those who are experiencing challenges. While messages should inform students of

support and resources, content should also instill a strong sense of affiliation with the

university and align with traditions similar to those experienced by on-campus students.

An example of this, mentioned by multiple survey participants, is a first-term campaign

at OSU that replaces the convocation experience for distance students with a tassel

mailing that explains the significance of that event with a personalized letter

demonstrating institutional support for the student and the gift of an OSU tassel. In

addition to messaging coming from an online education unit, special attention should

always be paid to institutional websites and communications going out to distance

students to ensure not only that the language is welcoming and inclusive to the population, but also that a thread of belonging is woven throughout.

Programs in the belonging curriculum should specifically focus on connecting students to campus, events, faculty, alumni, and other students, whether remotely and/or in-person. Partnerships should be forged with alumni networks to encourage inclusion of distance students in local area university events. Alumni partnerships could include mentoring programs or other initiatives that connect students to alumni in meaningful ways. Additionally, institutions should make resources available for distance students to travel to campus for academic offerings. Recommendations include inviting distance students to participate in condensed course offerings, research seminars and symposiums, and awards ceremonies on campus. Furthermore, institutions should advocate for distance students to be included in social offerings by creating access to and encouraging the use of recreational facilities, athletic events, and other student fee-funded activities on campus. Additionally, efforts should be made to include distance students in student organizations and clubs or other campus events through web and video conferencing technology. While distance students did not overwhelmingly cite connections with peers as a significant factor in developing a sense of belonging, many mentioned a desire to be more connected to organizations that students belong to and that provide a connection to campus that is valuable for building community. While many faculty and staff may take the first step by offering an opportunity, the opportunity itself may not be valuable without the resources needed to make it a reality. One participant offered the following comment when asked about a time they felt a sense of disconnection:

> One of my professors offered me to stop by her lab if I ever found myself on the Corvallis campus. While this was an amazing offer, I have never actually been to OSU and probably will not make it up there, which made me feel the downsides of being an only online student. Perhaps more opportunities like this should be offered to Ecampus students. More invitations to orientation week, more courses that have a week of study on campus, more invitations to tour and be a part of on campus research. While this may be impossible for some, and hard for others to take advantage of, even just the offer makes an attempt to bridge the gap between tradition[al] and Ecampus student experiences.

Other programming that allows for distance students at the institution to share their stories about transitioning to the university and the challenges and successes they have experienced as a distance student would also add value to the belonging curriculum. This could be done through marketing efforts, online learning communities, or in orientation programming. Drawing from Goodenow's (1993) definition of belonging and extending it to an online environment, this sharing of stories by current students adds to their feeling of being valued and encouraged by others as well as feeling like an important part of other students' experiences. Additionally, it helps to normalize the experience for others, while also reinforcing the message that students are not on this journey alone and they can achieve success. This is especially important for new students. The institution can facilitate the collection of these stories and coordinate their timing and placement to impact the student experience. Such stories could also be useful to faculty in trying to take the students' perspectives and imagine what it's like to be a distance student. Researchers have recommended that institutions find strategies that discourage students from taking a "lone wolf approach to distance study" (Brown et al., 2015, p. 12), but this type of programming takes that recommendation to a new level by not focusing on support services but on the building of support and community through storytelling and finding commonality.

Finally, if institutions use sense of belonging as a tool for more effectively retaining distance students, they should start tracking measures of belonging as a success metric, along with measures of satisfaction, persistence, retention, and completion. This study shows that the UBQ is a valid and reliable measure of belonging among online students that could easily be integrated into normal evaluation protocols. Similar to Tinto's (2012) call to action in *Completing College: Rethinking Institutional Action*, where he rallies institutions to approach student success by collecting and analyzing data, developing plans and interventions, and actively pursuing students success as an institutional goal, universities interested in the belonging of their distance students should approach it with intention. Institutions should use this metric to implement a belonging curriculum that fits their organization or make small and steady changes that lead to stronger student satisfaction, persistence, and eventually, completion. There are added benefits to tracking belonging that extend well beyond the student life cycle, especially as it relates to university affiliation. Strong university affiliation could translate to institutional loyalty and alumni giving after a student graduates or manifest is other ways of alumni engagement that are valuable to the institution.

Limitations

There are several limitations to this study, most of which are limitations of the sample and methodology. First, while this study used mixed methods, the scope was limited by heavy reliance on quantitative data. Belonging, while a complex concept that is often explored in a qualitative manner, is not covered well in literature about distance learners. Little is known about whether or not experiencing a sense of belonging mattered to distance learners, if they actually experienced belonging to the institution, or how they

experienced it. In order to answer foundational questions about belonging in distance

students, a mixed methods approach was chosen that primarily relied on quantitative data

to reveal if belonging mattered and if students actually experienced belonging as

measured by an existing instrument. An expanded collection of qualitative data could

have led to a deeper understanding of the phenomena of belonging in distance students,

but the scope of the study was limited for the purposes of timing and feasibility.

Second, while the survey response rate of 11% is average for surveys

administered to distance students at OSU, this equates to a sample size of 173

participants, which is limiting for a quantitative survey-based study. This is partly due to

the eligibility criteria set in place to ensure that students who were surveyed had been at

the institution long enough to have some experiences that would enable them to

authentically answer the questions about belonging. The eligibility criteria were

determined so that quantitative data gathered would be more reliable and qualitative data

gathered would be richer, assuming that students who had taken at least 24 credits from

OSU would have had some experiences to share in the open-ended questions. However, a

lack of participation in the study may also be seen as a marker of low belonging. In future

studies, especially ones that are purely quantitative, eligibility criteria may not be

necessary, therefore increasing the sample size and response rates. If eligibility criteria

were removed, it would be important to capture participants' progress in terms of credits

completed so that conclusions could be drawn about how sense of belonging develops

and changes over time.

Third, the sample is racially homogenous, therefore results cannot be broadly

applied across various populations. While OSU is not wildly diverse in terms of race and

ethnicity, a more diverse sample was expected given the population of learners that

distance education serves. Many studies exist on the contrasting experiences of belonging

that different racial groups have in higher education (Hurtado & Carter, 1997; Strayhorn,

2012). It is likely that this discrepancy exists for distance learners as well, and that is

evident in the findings of this study; however, the sample of diverse students is too small

to generalize findings to specific subgroups. Future qualitative studies can intentionally

recruit and learn from subgroups of students who likely have very different experiences.

Suggestions for Future Research

The results of this study have several implications for future research. This

section details recommendations for research in the following areas: continued use of the

UBQ to measure belonging in distance students, richer qualitative study into the

phenomena of belonging in distance students, and longitudinal studies tracking belonging

scores and retention, persistence, and completion of distance students. However, one

initial suggestion for future research would be further inquiry and analysis of the data

collected for this study. Conducting a deeper dive into each individual survey response to

develop a better understanding of how each student experienced belonging to the

university would be worthwhile, but it was outside of the scope of this study. Findings

could be foundational to creating distance student belonging profiles that represent how

different students may view, need, or experience belonging to the institution from a

distance.

First, future studies replicating or expanding on this study to continue using the

perceived belonging questions as well as the UBQ to measure belonging in distance

students would help to confirm the findings that both tools do in fact measure belonging

in distance learners and that they do experience some belonging to the institution. While

OSU's distance learner population is representative of national demographics in online

learning, specifically in terms of age and gender, future studies at other sites could

provide opportunities for more racially diverse samples, therefore addressing one of the

aforementioned limitations of this study. With continued study and testing, the UBQ

could become a universal tool for measuring belonging in all university students, with

increased validity and reliability across populations.

Second, additional qualitative studies focused on developing a deeper

understanding of the phenomena of belonging in distance students would be helpful in

discerning the nuanced differences in experienced belonging between traditional campus-

based students and adult online learners and developing belonging profiles of distance

students. Studies utilizing focus groups or interviews to learn more about student

experiences would be helpful in generating a larger theory around sense of belonging in

distance students and how it is fostered in an online environment. Additionally,

researchers identifying courses where students report high belonging and examine how

those courses are structured may lead to findings focused on elements of course desing

and instruction that may contribute to belonging. Finally, qualitative studies focused on

identifying worst practices or things institutions are doing unintentionally that

communicate to students that they do not matter.

Finally, large-scale quantitative longitudinal studies tracking belonging scores and

other success metrics—retention, persistence, and completion—to identity relationships

should be conducted. This study revealed that belonging scores and intent to persist were

positively correlated; however, linking actual persistence and completion data to

belonging scores would provide strong evidence to persuade universities to invest in

strategies that foster a sense of belonging in distance learners. Large-scale longitudinal

studies would also be useful in exploring how sense of belonging develops and changes

over time and if those changes are connected to specific institutional efforts intended to

bolster belonging among distance learners.

In summary, Chapter 5 presents five key findings: (a) There is potential for the

UBQ to be used to measure distance student belonging; (b) Distance students experienced

a sense of belonging to the institution, and it was correlated to their overall satisfaction,

net promoter score, and intent to persist; (c) Faculty and staff relationships were key to

distance students' sense of belonging; (d) Attending university events, locally or from a

distance, increased distance students' sense of belonging to the institution; and (e) White

students experienced a stronger sense of belonging to the institution than students

belonging to other groups. Recommendations are made regarding faculty engagement

and programmatic changes that could improve belonging in distance students. The use of

belonging as a success metric for institutions to track and make decisions is also

recommended. Additionally, Chapter 5 cited limitations of this study as well as

suggestions for further research into belonging in distance learners.

References

Abrami, P. C., & Bures, E. M. (1996). Computer-supported collaborative learning and distance education. *American Journal of Distance Education*, *10*(2), 37–42.

Allen, I. E., & Seaman, J. (2017). *Digital learning compass: Distance education enrollment report 2017*. Babson Survey Research Group, e-Literate, and WCET.

Ancis, J. R., Sedlacek, W. E., & Mohr, J. J. (2000). Student perceptions of campus cultural climate by race. *Journal of Counseling & Development*, *78*(2), 180–185.

Angelino, L. M., Williams, F. K., & Natvig, D. (2007). Strategies to engage online students and reduce attrition rates. *Journal of Educators Online*, *4*(2). https://eric.ed.gov/?id=EJ907749

Aragon, S. R. (2003). Creating social presence in online environments. *New Directions for Adult and Continuing Education*, *2003*(100), 57–68. https://doi.org/10.1002/ace.119

Astin, A. W. (1994). *Higher education and the concept of community*. University of Illinois at Urbana-Champaign.

Bawa, P. (2016). Retention in online courses: Exploring issues and solutions—A literature review. *SAGE Open*, *6*(1). https://doi.org/10.1177/2158244015621777

Bean, J. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, *12*(2), 155–187. https://doi.org/10.1007/BF00976194

Beck, H. P., & Milligan, M. (2014). Factors influencing the institutional commitment of online students. *The Internet and Higher Education*, *20*, 51–56. https://doi.org/10.1016/j.iheduc.2013.09.002

Blanchard, A. L., & Markus, M. L. (2002). Sense of virtual community—Maintaining the experience of belonging. *Proceedings of the 35th Annual Hawaii International Conference on System Sciences*, 3566–3575. https://doi.org/10.1109/HICSS.2002.994449

Boston, W., Ice, P., & Gibson, A. (2011). Comprehensive assessment of student retention in online learning environments. *School of Arts and Humanities*. https://digitalcommons.apus.edu/facultySAH/1

Bosworth, C. R. (2006). *Coaching online students to persist*. University of California, Los Angeles.

Bourdeaux, R., & Schoenack, L. (2016). Adult student expectations and experiences in an online learning environment. *Journal of Continuing Higher Education*, *64*(3), 152–161. https://doi.org/10.1080/07377363.2016.1229072

Brindley, J. E. (2014). Learner support in online distance education: Essential and evolving. In O. Zawacki-Richter & T. Anderson (Eds.), *Online Distance Education: Towards a Research Agenda* (pp. 287–310). Athabasca University Press.

Bronte, L. (1997). Learning to change. *Adult Learning*, *8*(5/6), 11.

Brown, M., Hughes, H., Keppell, M., Hard, N., & Smith, L. (2015). Stories from students in their first semester of distance learning. *International Review of Research in Open & Distance Learning*, *16*(4), 1–17. https://doi.org/10.19173/irrodl.v16i4.1647

Cabrera, A. R., Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between White students and African American students. *The Journal of Higher Education, 70*(2), 134-160.

Chiquo. (2019). Maslow's Hierarchy of Needs. *Wikipedia.* *https://commons.wikimedia.org/wiki/File:Maslow%27s_Hierarchy_of_Needs.jpg*

Chen, K.-C., & Jang, S.-J. (2010). Motivation in online learning: Testing a model of self-determination theory. *Computers in Human Behavior*, *26*(4), 741–752. https://doi.org/10.1016/j.chb.2010.01.011

Cohen, A. M. (1998). *The shaping of American higher education: Emergence and growth of the contemporary system*. Jossey-Bass.

Conrad, D. (2005). Building and maintaining community in cohort-based online learning. *Journal of Distance Education*, *20*(1), 1–20.

Cress, C. M. (2008). Creating inclusive learning communities: The role of student-faculty relationships in mitigating negative campus climate. *Learning Inquiry*, *2*(2), 95–111.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Plenum.

Emmanuel-Frenel, R. (2017). *A study of the relationship between distance learners' perception of the value of student support services and a sense of belonging in the*

university's learning community [Doctoral dissertation, Gwynedd Mercy University]. ProQuest Dissertations. http://search.proquest.com/docview/ 1955191539/abstract/5B6ACE8E399F4BC7PQ/1

Ferdousi, B. (2016). *Addressing student retention and persistence issue in online classes*. American Society for Engineering Education. http://people.cst.cmich.edu/ yelam1k/asee/proceedings/2016/faculty_regular_papers/2016_ASEE_NCS_paper _49.pdf

Fetzner, M. (2013). What do unsuccessful online students want us to know? *Journal of Asynchronous Learning Networks*, *17*(1), 13–27. https://doi.org/10.24059/ olj.v17i1.319

Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE.

Frankola, K. (2001). Why online learners drop out. *Workforce*, *80*(10), 53–58.

Freeman, T. M., Anderman, L. H., & Jensen, J. M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *Journal of Experimental Education*, *75*(3), 203–220.

Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, *30*, 79–90.

Goodenow, C. (1993). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *The Journal of Early Adolescence*, *13*(1), 21–43. https://doi.org/10.1177/0272431693013001002

Gunawardena, C. N., & Zittle, F. J. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *The American Journal of Distance Education*, *11*(3), 8–26.

Hausmann, L. R. M., Schofield, J. W., & Woods, R. L. (2007). Sense of belonging as a predictor of intentions to persist among African American and White first-year college students. *Research in Higher Education*, *48*(7), 803–839.

Herbert, M. (2006). Staying the course: A study in online student satisfaction and retention. *Online Journal of Distance Learning Administration*, *9*(4), 300–317.

Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino students' sense of belonging. *Sociology of Education*, *70*(4), 324–345.

Hurtado, S., Newman, C. B., Tran, M. C., & Chang, M. J. (2010). Improving the rate of success for underrepresented racial minorities in STEM fields: Insights from a

national project. *New Directions for Institutional Research*, *2010*(148), 5–15. https://doi.org/10.1002/ir.357

Jevons, J. (1984). Distance education in mixed institutions: Working towards parity. *Distance Education*, *5*, 24–37. https://doi.org/10.1080/0158791840050102

Johnson, D. R., Wasserman, T. H., Yildirim, N., & Yonai, B. A. (2014). Examining the effects of stress and campus climate on the persistence of students of color and white students: An application of Bean and Eaton's psychological model of retention. *Research in Higher Education*, *55*(1), 75–100. https://doi.org/10.1007/s11162-013-9304-9

Karaman, O., & Cirak, Y. (2017). The Belonging to the University scale. *Acta Didactica Napocensia*, *10*(2), 1–20.

Knowles, M. S. (1950). *Informal adult education: A guide for administrators, leaders, and teachers*. Association Press.

Knowles, M. S. (1970). *The modern practice of adult education: Andragogy versus pedagogy*. Association Press.

Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education*, *79*(5), 540–563. https://doi.org/10.1353/jhe.0.0019

Lane, T. B. (2016). Beyond academic and social integration: Understanding the impact of a STEM enrichment program on the retention and degree attainment of underrepresented students. *CBE Life Sciences Education*, *15*(3). https://doi.org/10.1187/cbe.16-01-0070

Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The social connectedness and the social assurance scales. *Journal of Counseling Psychology*, *42*, 232–241.

Lehman, R. M., & Conceicao, S. C. O. (2014). *Motivating and retaining online students: Research-based strategies that work*. Jossey-Bass.

Ludwig-Hardman, S., & Dunlap, J. C. (2003). Learner support services for online students: Scaffolding for success. *The International Review of Research in Open and Distributed Learning*, *4*(1). https://doi.org/10.19173/irrodl.v4i1.131

Martin, F., Budhrani, K., Kumar, S., & Ritzhaupt, A. (2019). Award-winning faculty online teaching practices: Roles and competencies. *Online Learning*, *23*(1). https://doi.org/10.24059/olj.v23i1.1329

Masika, R., & Jones, J. (2016). Building student belonging and engagement: Insights into higher education students' experiences of participating and learning together.

Teaching in Higher Education, *21*(2), 138–150. https://doi.org/10.1080/
13562517.2015.1122585

Maslow, A. H. (1954). *Personality and motivation* (1st ed.). Longman.

McClendon, C., Neugebauer, R. M., & King, A. (2017). Grit, growth mindset, and
deliberate practice in online learning. *Journal of Instructional Research*, *6*(1).
https://doi.org/10.9743/JIR.2017.2

McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory.
Journal of Community Psychology, *14*(1), 6–23.

Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice* (1st
ed.). Jossey-Bass.

Morrow, J. A., & Ackermann, M. E. (2012). Intention to persist and retention of first-year
students: The importance of motivation and sense of belonging. *College Student
Journal*, *46*(3), 483–491. https://eric.ed.gov/?id=EJ996948

Nesbit, T. (2005). Social class and adult education. *New Directions for Adult &
Continuing Education*, *2005*(106), 5–14. https://doi.org/10.1002/ace.174

O'Keeffe, P. (2013). A sense of belonging: Improving student retention. *College Student
Journal*, *47*(4), 605–613. https://eric.ed.gov/?id=EJ1029294

Perez, M. (2019). *2019 Oregon State University Ecampus annual student survey report*.
https://ecampus.oregonstate.edu/services/student-services/student-survey-
2019.pdf

Perna, L. W. (2010). Understanding the working college student. *Academe*, *96*(4), 30-32.
https://www.aaup.org/article/understanding-working-college-student

Phirangee, K. (2016). Students' perceptions of learner-learner interactions that weaken a
sense of community in an online learning environment. *Online Learning*, *20*(4),
13–33. https://doi.org/10.24059/olj.v20i4.1053

Phirangee, K., & Malec, A. (2017). Othering in online learning: An examination of social
presence, identity, and sense of community. *Distance Education*, *38*(2), 160–172.
https://doi.org/10.1080/01587919.2017.1322457

Rankin, S. R., & Reason, R. D. (2005). Differing perceptions: How students of color and
white students perceive campus climate for underrepresented groups. *Journal of
College Student Development*, *46*(1), 43–61. https://doi.org/10.1353/
csd.2005.0008

Rosenberg, M., & McCullough, B. C. (1981). Mattering: Inferred significance to parents and mental health among adolescents. *Research in Community and Mental Health*, *2*, 163-182.

Ruffalo Noel Levitz. (2018). *2018 National student satisfaction and priorities report*. Author. https://learn.ruffalonl.com/WEB2018StudentSatisfactionandPriorities Report_LandingPage.html

Rush, P. (2015). Isolation and connection: The experience of distance education. *International Journal of E-Learning & Distance Education, 30*(2), 1–25.

Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). SAGE.

Schlossberg, N. K. (1989). Marginality and mattering: Key issues in building community. *New Directions for Student Services*, 48, 5-15. https://doi.org/10.1002/ss.37119894803

Seaman, J. E., Allen, I. E., & Seaman, J. (2018). *Grade increase: Tracking distance education in the United States*. Babson Survey Research Group. https://eric.ed.gov/?id=ED580852

Shea, P., & Armitage, S. (2002). *WCET LAAP project beyond the administrative core: Guidelines for creating student services online*. WCET. http://www.wcet.wiche.edu/wcet/docs/beyond/overview.pdf

Shelton, K., & Saltsman, G. (2015). *An administrator's guide to online education*. IAP-Information Age Pub.

Simpson, O. (2008). Cost benefits of student retention policies and practices. In W. Bramble and S. Panda (Eds.)*, Economics of distance and online learning* (pp. 162–178). Routledge.

Sithole, A., Mupinga, D. M., Kibirige, J. S., Manyanga, F., & Bucklein, B. K. (2019). Expectations, challenges and suggestions for faculty teaching online courses in higher education. *International Journal of Online Pedagogy and Course Design*, *9*(1), 62–77. https://doi.org/10.4018/IJOPCD.2019010105

Slaten, C. D., Elison, Z. M., Deemer, E. D., Hughes, H. A., & Shemwell, D. A. (2018). The development and validation of the University Belonging Questionnaire. *The Journal of Experimental Education*, *86*(4), 633–651. https://doi.org/10.1080/00220973.2017.1339009

Slaten, C. D., Yough, M. S., Shemwell, D. A., Scalise, D. A., Elison, Z. M., & Hughes, H. A. (2014). Eat, sleep, breathe, study: Understanding what it means to belong at a university from the student perspective. *Excellence in Higher Education*, *5*(1), 1–5. https://doi.org/10.5195/ehe.2014.117

Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange*, *1*(1), 64–85. https://doi.org/10.1007/BF02214313

Stephanie. (2015, November 9). *Normalized Data / Normalization*. Statistics How To. https://www.statisticshowto.datasciencecentral.com/normalized/

Stickney, L. T., Bento, R. F., Aggarwal, A., & Adlakha, V. (2019). Online higher education: Faculty satisfaction and its antecedents. *Journal of Management Education*, *43*(5), 509–542. https://doi.org/10.1177/1052562919845022

Strayhorn, T. L. (2012). *College students' sense of belonging: A key to educational success for all students*. Routledge.

Swail, W. S., Redd, K. E., & Perna, L. (2003). *Retaining minority students in higher education: A framework for success*. Wiley.

Tinto, V. (1982). Limits of theory and practice in student attrition. *The Journal of Higher Education*, *53*(6), 687–700. https://doi.org/10.2307/1981525

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. University of Chicago Press.

Tinto, V. (2012). *Completing college: Rethinking institutional action*. The University of Chicago Press.

U.S. Department of Education. (n.d.). *IPEDS glossary*. Author. https://surveys.nces.ed.gov/ipeds/VisGlossaryAll.aspx

Vadell, K. (2016). *The influence of academic coaching on the retention of distance education students* [Doctoral dissertation, Drexel University]. ProQuest Dissertations. http://search.proquest.com/docview/1797415234/abstract/369E677B40044D78PQ/1

Willging, P. A., & Johnson, S. D. (2009). *Factors that influence students' decision to dropout of online courses*. *Online Learning, 13*(3), 14. https://olj.onlinelearningconsortium.org/index.php/olj/article/view/1659

Xiao, J. (2018). On the margins or at the center? Distance education in higher education. *Distance Education*, *39*(2), 259–274. https://doi.org/10.1080/01587919.2018.1429213

Yazedjian, A., Toews, M. L., Sevin, T., & Purswell, K. E. (2008). "It's a whole new world": A qualitative exploration of college students' definitions of and strategies for college success. *Journal of College Student Development*, *49*(2), 141–154. https://doi.org/10.1353/csd.2008.0009

Yosso, T. J., Smith, W. A., Ceja, M., & Solórzano, D. G. (2009). Critical race theory, racial microaggressions, and campus racial climate for Latina/o undergraduates. *Harvard Educational Review*, *79*(4), 659-691. https://doi.org/ 10.17763/ haer.79.4.m6867014157m707l

Zhao, C.-M., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education*, *45*(2), 115–138. https://doi.org/10.1023/B:RIHE.0000015692.88534.de

Appendix A: Recruitment Emails

Email #1 - Initial recruitment email
Subject line: Participate in a research study about sense of belonging
Pre-header text: Help us understand your experience

Hi {FIRST NAME},

Oregon State University Ecampus is looking for students to participate in a research study called "Sense of belonging from a distance: How online students describe, perceive, and experience belonging to the institution." This study has been approved by Oregon State University's Institutional Review Board.

As a study participant you will help us understand how online students experience sense of belonging to the university. Your input will help us identify how we can connect online students to OSU.

The study will be conducted through an online survey that will take approximately 7-10 minutes to complete.

Complete survey – orange button (button will direct to Qualtrics)

Your participation in this study is completely voluntary and confidential. You may choose to leave the study at any time prior to submitting the survey. Your decision to take part or not take part in this study will not affect your grades, your relationship with your professors or your standing in the university.

If you have questions about this research and how you will contribute to its outcomes, contact me at marleigh.perez@oregonstate.edu

Thank you for considering being part of this exciting opportunity.

Marleigh Perez
Director of student success
Oregon State University Ecampus

Email #2 – Reminder email
Subject line: There's still time to participate in research study
Pre-header text: Help us understand your online student experience

Hi {FIRST NAME},

We recently sent you an invitation to participate in a research study called "Sense of belonging from a distance: How online students describe, perceive, and experience belonging to the institution", being conducted by Oregon State University Ecampus. This study has been approved by Oregon State University's Institutional Review Board.

As a study participant you will help us understand how online students experience sense of belonging to the university. Your input will help us identify how we can connect online students to OSU.

The study will be conducted through an online survey that will take approximately 7-10 minutes to complete.

Complete survey – orange button (button will direct to Qualtrics)

Your participation in this study is completely voluntary and confidential. You may choose to leave the study at any time prior to submitting the survey. Your decision to take part or not take part in this study will not affect your grades, your relationship with your professors or your standing in the university.

If you have questions about this research and how you will contribute to its outcomes, contact me at marleigh.perez@oregonstate.edu

Thank you for considering being part of this exciting opportunity.

Marleigh Perez
Director of student success
Oregon State University Ecampus

Email #3 - Final reminder
Subject line: Last chance to participate in research
Pre-header text: Sign up now and help us understand belonging in online students

Hi {FIRST NAME},

We're checking back in with you to see if you would be willing to participate in a research study called "Sense of belonging from a distance: How online students describe, perceive, and experience belonging to the institution", being conducted by Oregon State University Ecampus. This study has been approved by Oregon State University's Institutional Review Board.

As a study participant you will help us understand how online students experience sense of belonging to the university. Your input will help us identify how we can connect online students to OSU.

The study will be conducted through an online survey that will take approximately 7-10 minutes to complete.

Complete survey – orange button (button will direct to Qualtrics)

Your participation in this study is completely voluntary and confidential. You may choose to leave the study at any time prior to submitting the survey. Your decision to take part or not take part in this study will not affect your grades, your relationship with your professors or your standing in the university.

If you have questions about this research and how you will contribute to its outcomes, contact me at marleigh.perez@oregonstate.edu

Thank you for considering being part of this exciting opportunity.

Marleigh Perez
Director of student success
Oregon State University Ecampus

Appendix B: Adult Consent Form

RESEARCH CONSENT FORM

Study Title: Sense of belonging from a distance: How online students describe, perceive, and experience belonging to the institution
Principal Investigator: Marleigh Perez
Study team: Rebecca Thomas

The Oregon State University Ecampus Student Success Team is inviting you to take part in a research study about sense of belonging in distance students. This study is meant to better understand how distance students describe and experience belonging to the institution and how that sense of belonging may impact their intent to persist at the university. This study has been approved by Oregon State University's Institutional Review Board.

We are asking you if you want to be in this study because you were identified as an Ecampus degree-seeking undergraduate student who enrolled in at least one online course in spring 2019 or summer 2019 that has completed at least 24 credits at OSU. You should not be in this study if you do not meet those requirements.

Your participation in this study is completely voluntary and confidential and your answers will only be reported in the aggregate. Submission of this survey represents your consent to participate in this study. You may choose to leave the study at any time prior to submission of the survey. Your decision to take part or not take part in this study will not affect your grades, your relationships with your professors, or your standing in the University.

The study activity includes participation in a confidential online survey where your participation will last about 7-10 minutes. This research will be used for purposes of the researcher's dissertation and publication.

There is a chance we could disclose information that identifies you. The security of data collected online cannot be guaranteed. The study team has attempted to minimize risk to the study participants. All records and data collected as part of this study will be kept in a confidential environment. The information collected in this online survey will not be used or distributed for future research studies.

Due to the nature of the topic of belonging, it is possible that some study questions may bring up negative experiences or memories. If you experience this, you may reach out to

the OSU Counseling and Psychological Services office (541-737-2131) or the Ecampus Student Success office (800-667-1465).

While it is not known if you will benefit from being in this study, your participation will help us better understand belonging in distance students, and therefore fill a gap in existing research that does not include distance students. The study will inform us of the needs of students and what aspects of the online student experience contribute most to a sense of belonging.

If you withdraw from this study before the submission of the survey, any data collected up to that point will not be used in the analysis and will be destroyed.

You will not be paid for being in this research study. Upon completion of the survey, participants will be redirected to a separate and optional form to enter a raffle to win one of three $25 visa gift cards.

We would like you to ask us questions if there is anything about the study that you do not understand. You can contact Marleigh Perez, Director of Student Success for Ecampus at Oregon State University (marleigh.perez@oregonstate.edu). If you have any questions about your rights or welfare as a study participant, you may contact the Human Research Protection Program at 541-737-8008 or irb@oregonstate.edu.

You also may contact Tom Ordeman, Data Protection Officer, dpo@oregonstate.edu, 541-737-9341, Oregon State University A008 Kerr Administration Building, Corvallis, OR 97331-4501.

Notice for participants outside of the United States: US data privacy laws have not been deemed adequate by the European Commission.

Thank you for being part of this study.

Appendix C: Online Survey

Ecampus belonging survey

Start of Block: Introduction and consent

The Oregon State University Ecampus Student Success Team is inviting you to take part in a research study about sense of belonging in distance students. This study is meant to better understand how distance students describe and experience belonging to the institution and how that sense of belonging may impact their intent to persist at the university. This study has been approved by Oregon State University's Institutional Review Board.

 We are asking you if you want to be in this study because you were identified as an Ecampus degree-seeking undergraduate student who enrolled in at least one online course in spring 2019 or summer 2019 that has completed at least 24 credits at OSU. You should not be in this study if you do not meet those requirements.

 Your participation in this study is completely voluntary and confidential and your answers will only be reported in the aggregate. Submission of this survey represents your consent to participate in this study. You may choose to leave the study at any time prior to submission of the survey. Your decision to take part or not take part in this study will not affect your grades, your relationships with your professors, or your standing in the University.

 The study activity includes participation in a confidential online survey where your participation will last about 7-10 minutes. This research will be used for purposes of the researcher's dissertation and publication.

 There is a chance we could disclose information that identifies you. The security of data collected online cannot be guaranteed. The study team has attempted to minimize risk to the study participants. All records and data collected as part of this study will be kept in a confidential environment. The information collected in this online survey will not be used or distributed for future research studies.

 Due to the nature of the topic of belonging, it is possible that some study questions may bring up negative experiences or memories. If you experience this, you may reach out to the OSU Counseling and Psychological Services office (541-737-2131) or the Ecampus Student Success office (800-667-1465).

 While it is not known if you will benefit from being in this study, your participation will help us better understand belonging in distance students, and therefore fill a gap in

existing research that does not include distance students. The study will inform us of the needs of students and what aspects of the online student experience contribute most to a sense of belonging.

 If you withdraw from this study before the submission of the survey, any data collected up to that point will not be used in the analysis and will be destroyed.

 You will not be paid for being in this research study. Upon completion of the survey, participants will be redirected to a separate and optional form to enter a raffle to win one of three $25 visa gift cards.

 We would like you to ask us questions if there is anything about the study that you do not understand. You can contact Marleigh Perez, Director of Student Success for Ecampus at Oregon State University (marleigh.perez@oregonstate.edu). If you have any questions about your rights or welfare as a study participant, you may contact the Human Research Protection Program at 541-737-8008 or irb@oregonstate.edu.

 You also may contact Tom Ordeman, Data Protection Officer, dpo@oregonstate.edu, 541-737-9341, Oregon State University A008 Kerr Administration Building, Corvallis, OR 97331-4501.

 Notice for participants outside of the United States: US data privacy laws have not been deemed adequate by the European Commission.

 Thank you for being part of this study.

End of Block: Introduction and consent

On a scale from 1-10, how would you rate your overall satisfaction with your educational experience at OSU?

○ Extremely dissatisfied 1   (1)

○ 2 (2)

○ 3 (3)

○ 4 (4)

○ 5 (5)

○ 6 (6)

○ 7 (7)

○ 8 (8)

○ 9 (9)

○ Extremely satisfied 10   (10)

On a scale from 1-10, how likely are you to recommend online courses at OSU to a friend or colleague?

○ Not likely at all 1   (1)

○ 2 (2)

○ 3 (3)

○ 4 (4)

○ 5 (5)

○ 6 (6)

○ 7 (7)

○ 8 (8)

○ 9 (9)

○ Extremely likely 10   (10)

- -

As an online student at OSU, what would you say have been your most **positive** experiences?

_____

- -

As an online student at OSU, what would you say have been your most **negative** experiences?

_____

- -

Please indicate your level of agreement with each statement below.

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
As an online student at OSU, I feel a real sense of belonging in my classes (1)	○	○	○	○	○
As an online student at OSU, I feel like I really matter (2)	○	○	○	○	○
As an online student at OSU, I feel a close connection to other students (3)	○	○	○	○	○
As an online student at OSU, I feel like my instructors really care about me as a person (4)	○	○	○	○	○
As an online student at OSU, I feel like staff are there for me (5)	○	○	○	○	○

Below is a list of statements that may or may not be true about your experience as an OSU Ecampus student. Please indicate your level of agreement with each statement using the responses provided. Think carefully and respond honestly as there is no "wrong" answer.

	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
I take pride in wearing OSU's colors (1)	○	○	○	○
I tend to associate myself with OSU (2)	○	○	○	○
One of the things I like to tell people about is OSU (3)	○	○	○	○
I feel a sense of pride when I meet or read about someone from OSU (4)	○	○	○	○
I would be proud to support OSU in any way I can in the future (5)	○	○	○	○
I have OSU branded material that others can see (pens, notebooks, bumper sticker, etc.) (6)	○	○	○	○
I am proud to be an OSU student (7)	○	○	○	○
I watch and/or follow OSU sporting events in order to support the university (8)	○	○	○	○
I feel "at home" in my classes (9)	○	○	○	○
I feel like I belong to OSU when I represent my school (10)	○	○	○	○
I have found it easy to establish relationships at OSU (11)	○	○	○	○

| I feel similar to other people in my major (12) | ○ | ○ | ○ | ○ |

Please tell us about a time you felt a real sense of belonging or connection to OSU.

_____

Please tell us about a time you felt a sense of disconnection or being an outsider to OSU.

_____

Below is a list of statements that may or may not be true about your experience as an OSU Ecampus student. Please indicate your level of agreement with each statement using the responses provided. Think carefully and respond honestly as there is no "wrong" answer.

	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
OSU provides opportunities to engage in meaningful activities (1)	○	○	○	○
I believe there are supportive resources available to me at OSU (2)	○	○	○	○
The OSU environment provides me an opportunity to grow (3)	○	○	○	○
OSU provides opportunities to have diverse experiences (4)	○	○	○	○
My cultural customs are accepted by OSU (5)	○	○	○	○
I believe I have enough academic support to get me through college (6)	○	○	○	○
I am satisfied with the academic opportunities at OSU (7)	○	○	○	○
OSU values individual differences (8)	○	○	○	○
I believe that a faculty/staff member at OSU cares about me (9)	○	○	○	○
I feel connected to a faculty/staff member at OSU (10)	○	○	○	○

	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
I feel that a faculty/staff member has appreciated me (11)	○	○	○	○
I feel that a faculty member has valued my contributions in class (12)	○	○	○	○

Please indicate your level of agreement with each statement below.

	Strongly disagree (1)	Disagree (2)	Agree (3)	Strongly agree (4)
I plan to register for online courses at OSU next term (1)	○	○	○	○
I am positive that I will earn a degree from OSU (2)	○	○	○	○
I often think about dropping out of OSU's online classes (3)	○	○	○	○

What is your overall OSU GPA?

_____

Including the current term, how many credits have you completed online at OSU?

○ 24 - 36 credits (1)

○ 37 - 60 credits (2)

○ 61 or more credits (3)

What is your current age?

○ 24 years old and under (1)

○ 25 - 34 years old (2)

○ 35 - 44 years old (3)

○ 45 - 54 years old (4)

○ 55 years old or over (5)

With which gender do you identify?

○ Female (1)

○ Male (2)

○ Trans female/Trans woman (3)

○ Trans male/Trans man (4)

○ Genderqueer/Gender non-conforming (5)

○ Different identity (please state) (6) _____

○ Prefer not to identify (7)

How would you describe yourself (select all that apply)

○ American Indian or Alaska Native (1)

○ Asian (2)

○ Black or African American (3)

○ Hispanic or Latina/o (4)

○ Middle Eastern or North African (5)

○ Native Hawaiian or Pacific Islander (6)

○ White (7)

○ Another race or ethnicity (8)

○ I prefer not to respond (9)

End of Block: Section 5: Demographics

Appendix D: Researcher Consent for Use of Instrument

Subject: Re: University Belonging Questionnaire
Date: Tuesday, January 22, 2019 at 1:39:47 PM Pacific Standard Time
From: Slaten, Christopher Daniel
To: Perez, Marleigh
CC: marleigh@pdx.edu
Attachments: UBQ.pdf

Absolutely, no problem! I'm hopeful that the scale will sere a good use for your work.

Dr. Christopher Slaten
Masters Program Coordinator
Assistant Professor
Counseling Psychology
College of Education
University of Missouri-Columbia
16A Hill Hall
slatenc@missouri.edu

On Jan 22, 2019, at 11:09 AM, Perez, Marleigh <Marleigh.Perez@oregonstate.edu> wrote:

Hi Dr. Slaten,

I'm currently in a doctoral program for Educational Leadership and Policy at Portland State University. My research is on sense of belonging in online learners at the post-secondary level. I've come across some of your work, specifically the University Belonging Questionnaire (UBQ) and I'm interested in potentially using the instrument for my dissertation as it seems more aligned with adult learners than other instruments I've come across in the literature. Would you be open to sharing the UBQ with me and granting me permission to use it for my research?

I'm happy to answer any questions you may have.

Thanks,
Marleigh Perez

MARLEIGH PEREZ | Director of Student Success
Oregon State University | Ecampus | 541.737.4836

marleigh.perez@oregonstate.edu
http://ecampus.oregonstate.edu/students/

OSU Ecampus is ranked No. 3 in the nation by U.S. News & World Report

Appendix E: UBQ Modifications

University Belonging Questionnaire
Below is a list of statements that may or may not be true about
your experience at college. Please indicate your level of agreement with each statement using
the responses provided. Think carefully and respond honestly as there is no "wrong" answer.
(1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree)

1. I feel that a faculty member has valued my contributions in ~~class~~ my courses
2. ~~My university~~ The OSU online environment provides me an opportunity to grow
3. I have ~~university~~ OSU branded material that others can see (pens, notebooks, bumper sticker, etc.)
4. I tend to associate myself with ~~my school~~ OSU
5. I would be proud to support ~~my university~~ OSU in any way I can in the future
6. I believe there are supportive ~~resources~~ online resources available to me ~~on campus~~ at OSU
7. ~~My university~~ OSU provides opportunities to have diverse ~~experiences~~ online experiences
8. One of the things I like to tell people about is ~~my college~~ OSU
9. I am satisfied with the academic opportunities ~~at my university~~ available within OSU
10. I have found it easy to establish relationships ~~at my university~~ within OSU
11. ~~The university I attend~~ OSU values individual differences
12. I feel ~~"at home" on campus~~ connected to OSU
13. I ~~attend~~ watch and/or follow ~~university~~ OSU sporting events in order to support ~~my~~ the university
14. ~~My university~~ OSU provides opportunities to engage in meaningful activities
15. I feel similar to other people in my major
16. I believe I have enough academic support to get me through college
17. I feel connected to a faculty/staff member at ~~my university~~ OSU
18. I feel a sense of pride when I meet someone from ~~my university~~ OSU off-campus
19. My cultural customs are accepted ~~at my university~~ by OSU
20. I am proud to be ~~a student at my university~~ a OSU student
21. I believe that a faculty/staff member at ~~my university~~ OSU cares about me
22. I take pride in wearing ~~my university's~~ OSU's colors.
23. I feel that a faculty/staff member has appreciated me
24. I feel like I belong to ~~my university~~ OSU when I represent my school off-campus

Appendix F: CITI Training Certificate

CITI PROGRAM

Completion Date 14-Jan-2019
Expiration Date 13-Jan-2022
Record ID 30046943

This is to certify that:

Marleigh Perez

Has completed the following CITI Program course:

Family Educational Rights and Privacy Act (Curriculum Group)
FERPA Course (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Portland State University

Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wdbc7875a-24a2-4725-bd74-529a3f412456-30046943

Appendix G: IRB Outcome Letter

Oregon State University Research Office

Human Research Protection Program
& Institutional Review Board
B308 Kerr Administration Bldg, Corvallis OR 97331
(541) 737-8008
IRB@oregonstate.edu
http://research.oregonstate.edu/irb

Date of Notification	July 17, 2019		
Notification Type	Approval Notice		
Submission Type	Initial Application	**Study Number**	IRB-2019-0208
Principal Investigator	Marleigh L Perez		
Study Team Members	Thomas, Rebecca A		
Study Title	Sense of Belonging From a Distance: How Online Students Describe, Perceive, and Experience Belonging to the Institution		
Review Level	**FLEX**		
Waiver(s)	Documentation of Informed Consent		
Risk Level for Adults	Minimal Risk		
Risk Level for Children	Study does not involve children		
Funding Source	None	**Cayuse Number**	N/A

APPROVAL DATE: 07/17/2019   **EXPIRATION DATE:** 07/16/2024

A new application will be required in order to extend the study beyond this expiration date.

Comments: As this study proposes to collect data from individuals in the EU, we have copied the Information Security Office. If they require changes that impact these approved documents, you will need to submit a project revision prior to initiating changes. Waiver of documentation of consent under Institutional Policy

The above referenced study was reviewed and approved by the OSU Institutional Review Board (IRB). The IRB has determined that the protocol meets the minimum criteria for approval under the applicable regulations, state laws, and local policies.

This proposal has not been evaluated for scientific merit, except to weigh the risk to the human subjects in relation to potential benefits.

Adding any of the following elements will invalidate the FLEX determination and require the submission of a project revision:

- Increase in risk
- Federal funding or a plan for future federal sponsorship (e.g., proof of concept studies for federal RFPs, pilot studies intended to support a federal grant application, training and program project grants, no-cost extensions)
- Research funded or otherwise regulated by a federal agency that has signed on to the Common Rule, including all agencies within the Department of Health and Human Services
- FDA-regulated research
- NIH-issued or pending Certificate of Confidentiality
- Prisoners or parolees as subjects
- Contractual obligations or restrictions that require the application of the Common Rule or which require annual review by an IRB

Oregon State University
Research Office

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http://research.oregonstate.edu/irb

- Classified research
- Clinical interventions

Principal Investigator responsibilities:

- Keep study team members informed of the status of the research.
- Any changes to the research must be submitted to the IRB for review and approval prior to implementing the changes. Failure to adhere to the approved protocol can result in study suspension or termination and data stemming from protocol deviations cannot be represented as having IRB approval.
- Report all unanticipated problems involving risks to participants or others within three calendar days.
- Use only valid consent document(s).
- Submit project revisions for review prior to initiating changes.

Appendix H: Qualitative Codes

Initial list of structural codes:

- Belonging
- Care/lack of
- Community/lack of
- Connection/lack of
- Engagement/lack of
- Faculty and Staff Relations (FSR)
- Involvement/lack of
- Isolation
- Mattering
- Supportive
- Responsive/lack of
- University Affiliation (UA)
- University Support and Acceptance (USA)

Emerged from the data:

- Acknowledging differences of distance students
- Belonging is not important
- Choose not to engage/no desire to connect with others
- Commonalities with other students/lack of
- Expected disconnection because of online modality
- Faculty feedback/lack of
- Geographic location
- Not bothered by disconnect
- On-campus activities/events – both attending and not being able to/included
- Online modality leads to lack of _____
- Poor teaching in online modality
- Technology access/issues
- University events