ONLINE GRADUATE STUDENTS' SENSE OF COMMUNITY TO THEIR HIGHER LEARNING INSTITUTION: A MIXED METHODS STUDY

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DEDICATION

This dissertation is dedicated to my husband, Justin, who has been a constant source of love, encouragement, and much needed humor throughout this journey.

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ABSTRACT

Establishing a sense of community is important for student success in online environments. However, how online graduate students experience a sense of community to the higher learning institution providing their courses or degree is an area not fully explored. This study investigated how graduate students in a completely online program perceived their sense of community to their institution. Further, this research examined how the institution supported or could better support its students through services and/or aid to develop a greater sense of connection and belonging among its online learners. A mixed methods approach was utilized, gathering quantitative data using the Sense of Community Index-2 survey, with subsequent semi-structured qualitative interviews providing further insight into the quantitative outcome. Results of the survey indicate that participants (N=91) reported a somewhat low sense of community and had the lowest mean on the subscale of "membership", referring to a student's sense of belonging to a community. Seven themes emerged from the qualitative interviews (N=10) that indicated areas needing institutional support to improve a sense of community. The mixing of the two data sets allowed for triangulation and provided insight into how the qualitative themes supported the quantitative survey results. The mixed data revealed specific services and aid that can be considered to improve the SCI-2 total index and subscale scores. This study contributes to the understanding of how institutions can support and improve online students' sense of community, and provides recommendations for services and/or aid that can be implemented online to serve this population.

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LIST OF ABBREVIATIONS

COI	Community of Inquiry
EDTECH	Educational Technology
SCI-2	Sense of Community Index 2 Scale
SPSS	Statistical Package for the Social Sciences

CHAPTER ONE: INTRODUCTION

Introduction

With continued growth and expansion of online programs, more consideration is being paid to student wellbeing and satisfaction within the online, remote environment. However, in responding to and supporting students' needs, what is the role of the learning institution itself? Little research has looked at how an online student connects with the higher learning institution in which he/she seeks a degree, especially in considering the specific academic program, department, or institution. Is an online student missing essential components of communal interaction and a sense of belonging if he/she is unable to participate in on-campus events? To what extent does an online student feel that he/she is "a part of" the higher learning institution which he/she seeks a degree from, and how might this sense of belonging be valuable?

Through this research, the researcher aimed to fill the gap in the area mentioned above, investigating the sense of community reported by students enrolled in an institution that they are not physically attending. The goal of identifying and describing this sense of community is to help institutions determine how to best serve their online students, perhaps in consideration of establishing a larger virtual community outside the classroom or program of study. This study may benefit both the students and higher learning institutions. Students may communicate the experience of isolation from their institution and also reaffirm the behaviors or features that connect online students for online programs. The institutions in question seeking to understand the enrolled students

may use such research findings to best determine services and outreach activities that exist or may be required.

Background of the Study

Astin (1999) determined that a college student's participation within the social/interpersonal community of a university correlates with their overall academic achievement. It is apparent that institutional differences do matter with respect to student choice and participation, and that connection to a university community is a defining feature of higher education culture. Of course, in Astin's research (1999) the subjects of the study were the traditional brick and mortar students. While there is existing research that addresses online students' relationships, support, and sense of community with their peers (Dickey, 2004; Shea, Li, & Pickett, 2006), instructors (Garrison & Cleveland-Innes, 2005; Rovai & Jordan, 2004), and specific colleges within a university (Young & Bruce, 2011), the online student's sense of community to the larger institution has been largely overlooked.

The need for further research is apparent as online students continue to report issues of isolation (Yang, Baldwin & Snelson, 2017), paired with feelings of being overwhelmed or not feeling fully supported in an asynchronous learning environment (Barrett & Lally, 2000; Barbour & Plough, 2009; Hawkins, Barbour, & Graham, 2012; Lake, 1999). Beyond academic pursuits, what else can an institution provide, through specific programs of study or support services, to alleviate perceptions of absence being physically represented within the on-campus community? Low academic performances or complete withdrawals from courses may occur as students begin to struggle with these negative pressures (Allen & Seaman, 2015; Liu, Magjuka, Bonk, & Lee, 2007; Willging

& Johnson 2009). Such detrimental actions can severely impact the student and may reduce the effectiveness of schools and their administration in identifying and intervening on behalf of these at-risk pupils.

To combat these negative conditions, a growth in organizational support and efforts on behalf of the instructor, program, and college should continuously occur in order to better assist, support, and retain an online population of students (Park & Choi, 2009). This study was conducted to add to the existing literature and respond to a current gap in research regarding students' sense of community to their higher learning institution, in particular, to provide a more inclusive look at online students' learning experience. By targeting the relationship between an online student and the higher learning institution, the results of this study describe recommendations for services, activities, and/or interventions that can be provided to ensure the well-being, academic success, and overall retention of online students. In essence, the focus of this research is on the role of providing higher learning institution for students who are not physically present on campus.

Purpose of Study

The purpose of this mixed methods study was to investigate the sense of community that online graduate students experience in their learning institution. This study specifically examined the experiences of graduate students enrolled in a fully online educational technology (EDTECH) program. How did these online students see themselves as part of the larger, higher-learning community at a Northwest University, if they did at all? Additionally, data were analyzed in order to understand how or if the

university could improve their student services to help create a greater sense of connection and belonging amongst online learners, if such efforts may be needed.

The researcher's use of a mixed methods approach entailed the collection of quantitative data from an online survey and qualitative data from a follow-up semi-structured interview that described the experiences of individual students. By examining students' sense of community to their university, practitioners can have a more complete understanding of the online student's experience. Ideally, both the data collected and the analysis conducted can be applied to other programs or institutions for the benefit of all parties. The goal of conducting this research was to understand how online programs can decrease isolation and improve a student's sense of belonging. By decreasing isolation, online programs will ultimately benefit by retaining their students – especially those new to the online learning environment.

Research Questions

Three research questions guided this study to identify the sense of community experienced by students enrolled in a fully online graduate program in the department of EDTECH at a Northwest University. These questions were used to identify student perceptions of a sense of community and to delve into the individual student experience. Further, these questions cohesively unite to provide further insight into each individual result. The specific research questions for this study were:

1. How do online graduate students perceive their overall sense of community with a higher learning institution delivering their courses?

2. What are the student perceptions of the services and/or aid a higher learning institution could provide to support its online graduate students' sense of community?
3. In what way do the themes from the semi-structured interviews inform the overall quantitative results from the SCI-2 survey?

Significance of Study

The findings of this study contribute to the improvement of online programs by providing insight into online students' experiences as members of the university culture. This study provides insights into areas in which an institution excels and also in areas of potential improvement. Methods to improve services that contribute to a student's sense of community, and address feelings of frustration, anxiety, and/or isolation in online students, may be drawn from the results of this study. By concentrating on these issues, student retention can potentially improve, offering benefits for the university, educational department, and, most importantly, the students.

This study offered students the opportunity to directly benefit from participation, by providing participants with a venue to share their experiences and perspectives about how they felt connected to their larger university system. This study may have provided a voice to an online student population not physically present on campus. The participating students were asked to look at the entirety of their experience within their program, providing an overall picture of the positive and negative perceptions held. By understanding the online students' experiences, the department and university can respond appropriately.

Lastly, the results of this study add to the existing body of literature pertaining to online student's sense of community and perspective of interactions, as described above. These efforts may fill a gap in the literature regarding how online students connect with their higher learning institution providing their education. While this study only examined students at one, specific university, there is potential for this research to provide a foundation for future explorations at different higher institutions. By increasing research in the area of community, the growing field of online education can continue to improve for incoming generations of students.

Rationale for Methodology

This study utilized a mixed methods approach, with an explanatory sequential design. The quantitative data collection had priority and was sought first, informing the subsequent qualitative data collection (Creswell & Plano-Clark, 2011). An online survey featuring student demographic questions and the Sense of Community Index 2 Scale (SCI-2) (Chavis, Lee, & Acosta, 2008) was used for the quantitative data collection. The survey was distributed to students in the educational technology graduate program via their institutional email. The survey, featuring Likert-type questions, provided data highlighting a larger, more representative overview of the online students' sense of community within the University. The final item of the survey prompted students to respond as to whether they were interested in participating in the second phase, which consisted of an in-depth interview about their experiences, conducted through web-conferencing (Google Hangouts). This qualitative data served to explain, support, and build upon the SCI-2 survey results (Creswell & Plano-Clark, 2011).

By using a combination of these two methods (quantitative survey and qualitative interview) insight was provided into an online student population's overall sense of community while capturing the human complexity of the individual participants themselves (Ridenour & Newman, 2008). The quantitative survey crafted a larger picture of student connectedness to their program, while the qualitative interviews delved into specific perspectives, needs, and experiences that can inform program improvements and/or highlight program success. A sample size of 91 participants was obtained for the initial quantitative survey. For the qualitative phase, 10 survey participants were selected amongst the 17 who agreed to participate in the subsequent qualitative interviews and provide their experiences as an online student. These 10 participants were selected based on their demographic information (e.g. age, sex, program of study, etc.), SCI-2 survey results (high and low total index) to allow for a varied sample, and willingness to participate. In effect, student reporting provided direct perspectives to the possible benefit of current and future students. These two approaches were designed to cohesively supply increased depth to the study, to answer the research questions, and to provide insight for future research (Ivankova, Creswell, & Stick, 2006).

To obtain access to a fully online student population, a convenience sampling method was used in this study. Specifically, this study was conducted at a University in the Northwestern United States that features an Educational Technology (EDTECH) program consisting of both part-time and full-time graduate and doctoral students. While this University offers a variety of on-campus programs, this specific program is hosted entirely online for students both domestic and international. The program is a part of a public institution accredited by several federal agencies, providing numerous courses and

degrees for a wide array of purposes and learners. The researcher, having completed the Master's program prior to pursuing Doctoral Candidacy in this program was well acquainted with the programs.

Transparency of Insider Research

As the researcher was enrolled as a doctoral student at the Northwest University, as well as a graduate assistant for three years within the department of Educational Technology, it is important to discuss the researcher's efforts to ensure that the insider bias was mitigated. Insider bias, the inclusion of unconscious assumptions by the researcher based on previous experience and knowledge, can invalidate research when not kept in check (DeLyser, 2001). Having worked as an online teacher for several years, the researcher's background within the field provided insight into the dynamics of being on both the student and administrative sides of an online program. Being a member of both the program and also being in the field of online education offered several challenges in this endeavor, including both maintaining objectivity despite the researcher's potential familiarity with the content and also creating a professional separation with the participants themselves, as some may have previous interactions with the researcher from their own courses. Being an insider within educational research offered the opportunity to share common knowledge of the issue being studied – as well as the challenges faced – and it was important that objectivity and balance were maintained throughout the research process (Saidin & Yaacob, 2016).

Therefore, the following measures were undertaken to ensure that potential bias was limited within the participants' interviews: First, bracketing, which refers to suspending one's understandings of a topic to take fresh perspective toward an examined

phenomenon (Creswell, 2013), was used within the qualitative data collection and analysis. This measure encourages the researcher to separate from any pre-conceived knowledge of the field and to become a non-participating observer of the participant's experiences. In this way, the researcher will not hinder the phenomenon itself (Husserl, 1964). Additionally, a semi-structured interview approach, with pre-structured questions, was utilized to eliminate the potential personal influence of the researcher (Mitchell & Jolley, 2007). The researcher was further mindful of listening, and not leading, the participant within the interview. Next, the qualitative results were continuously cross-checked with the quantitative data to examine the alignment between the quantitative data on participants' sense of community perception and the interviews. Member checking was also used to validate the findings from the interviews with the participants to ensure that the information was being recorded and coded correctly. Lastly, the researcher made every effort to be transparent in the methodology process and data analysis within the final dissertation report. It was the goal of the researcher to ensure the credibility and validity of the study.

Assumptions of the Study

This proposed study assumed that participants would answer both the survey items and interview questions in an honest and candid manner. Speaking candidly about experiences can be difficult for some participants, but the importance of the data commended the need for veracity. Anonymity and security of personal information were made clear to all participants prior to the start of the study in order to encourage honesty in their answers. No personally identifiable information was shared with the department or university before, during, or after the completion of this study. Participants were not

penalized nor benefitted academically nor financially for their participation in this study. Lastly, interviews were conducted on a one-on-one basis to encourage trust between the researcher and participants and to, again, encourage transparency through those interviewed.

Chapter Summary

The first chapter of this dissertation describes the study while offering context as to why this research was significant to the field of online education and program development. Additionally, this chapter provides an outline of the research approach, defines the purpose of the study and the research questions, and summarizes the researcher's conduct and alignment with professional standards. The second chapter of this dissertation offers a more detailed review of the current literature pertaining to online student sense of community and how relevant prior research influenced the development of this study.

CHAPTER TWO: REVIEW OF THE LITERATURE

Introduction

Understanding of current, existing systems and practices of online education varies for different stakeholders. Diverse and dexterous approaches, models, and modes of delivery make online education difficult to conform to one "correct" example (Allen & Seaman, 2013). Nevertheless, students often select this mode of learning as a preferred or as an efficacious educational environment, despite any ambiguity in definition, for a variety of reasons (Allen & Seaman, 2015). Online education's affordance on flexibility, ability to provide a diverse array of programs and courses, possibilities for remote locations, and an overall impression of a positive, complementary learning experience are only a few potential considerations for approaching the online learning mode and such courses (Hannay & Newvine, 2006). No matter the reason, the continued growth of online education indicates that online programs are here to stay. The popularity and variance of online learning present an excellent opportunity for researchers to embark on new studies to shape and improve the field.

Online learning's unique, often physically remote or isolated setting (both geographically and temporally), provides ample space for the study of social behaviors, and the potential influence these behaviors may have on student achievement (Harasim, 2000; Richardson & Swan, 2003). This view represents a well-addressed topic that continues to and needs to, derive much attention. Research has investigated questions surrounding best practices, learning theories, and student behavior, and studies and

recommendations are being established within this digital environment for such topics as instructional design (Ouzts, 2006; Shea, Li, & Pickett, 2006), instructor best practices (Nash, 2005), student interventions (Mazzolini & Maddison, 2003; Tung, 2012), etc. However, much like the traditional brick-and-mortar classroom, theories and recommendations for education are not always one-size-fits-all.

This section reviews the literature on identifying and evaluating aspects of sense of community – defined here as the proximity perceived by students to their learning environment, including a sense of belonging, ownership, and interpersonal relationships (McMillan & Chavis, 1986). The literature review includes impressions of student connections to their peers, instructors, subject learning content, and the overall sense of learning taking place during their coursework. The review of the literature begins with foundational measurements of interactions and move through various elements of online courses, such as design, collaboration, and elements of teaching in the online environment. Additionally, consideration of more summative elements of experienced learning, with respect to student demographics, competency, and overall satisfaction are included. In this effort, a more detailed picture of the potential and practices of online learning is established. Concluding observations provide a portrait of the current state of research regarding students' perceptions and experiences of sense of community in the online environment.

Theoretical Foundations

Online education presents an environment that is unique, with clear delineations in its practice and systems in comparison, to traditional, physical learning environments (Harasim, 2000). It may be tempting to assume that because of the remote, often

asynchronous, nature of the participants that learning online can be an entirely individual pursuit. Certainly, many students may choose this learning environment to enhance their individual experience with regards to pace, relationship with classmates, and the nature of their tasks. However, when clearly considering the necessary supports, including instructors, course designers, technical support, and administrative functions, etc. for the learner, it would be impossible to consider online learning to be a wholly individual pursuit.

As such, the impact of the social nature of learning, even in the online environment, is relevant in considering student experiences. Social constructivism, as described by Vygotsky (1978), provides clear parameters regarding the integration of learners into a community of practice. While students who choose the online learning environment may have a different, perhaps extensive and independent level of agency within their zone of proximal development (Vygotsky, 1978), there is a substantial level of development needed from the educational system and its social agents. No student can learn within a bubble of seclusion or ignorance. Therefore, it is important to acknowledge that the separations for an online student in time and space should not constitute a strict, defined border between him or her and the learning environment. The bubble must be one that students can phase through when needed, or when needing to be reached.

Determining the extent and efforts undertaken in connecting students into their social learning environment can be encompassed in the study of interactions. Interaction can be defined as “an event that takes place between a learner and learners’ environment and its purpose is to respond to the learner in a way intended to change his or her behavior toward an educational goal” (Wagner, 1994, p. 9). Interaction in an online

course can occur and appear in many different forms, with many different stakeholders. In one sense, interaction is the only constant in educational design, regardless of any institution, in-person or remote. In online or distance learning, however, routes or means of interaction cannot be taken for granted, but instead must be held as a core component of education. Moore (1989), in a foundational editorial, explored three specific types of interaction that occur within distance learning programs – three interactions that have also been adapted and favored in research in online education: learner to instructor, learner to learner, and learner to content.

What makes these three interactions important? Anderson (2008) argued that should even one of these three interactions occur at high levels, students will likely have a more satisfying learning experience overall. Abrami, Bernard, Bures, Borokhovski, and Tamim (2011) found that interactions across all three categories positively affect student learning at a significant level. Interaction, in support of the student's social learning environment and sense of community, creates an essential foundation for literature regarding student perceptions of belonging and ownership in their online learning program.

Deconstructing Sense of Community

From the earliest formations of online education's dynamic and exponential spread, commencing in the last decades of the 20th century, a central question has been whether or not this new digital environment would be able to replicate the brick and mortar classrooms and institutions that preceded it for centuries. Some elements of the new medium's transferability were straightforward – issues of technological capabilities, content adaptation, and instructor availability. Once these items were addressed, the

lingering question concerns student engagement and ownership of their learning. Simply put, do students completing online coursework feel that they are connected to that community, at least in the sense they might for traditional, physical, and synchronous learning? It is evident that there is a gap in available literature pertaining to online students' sense of community with respect to the higher learning institution. However, this section will review the studies that do tie sense of community to the online, higher education setting.

Defining Sense of Community

It is important to clarify how a student might perceive their sense of community. This term originates in the work of McMillan and Chavis (1986), who define a sense of community as "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). The authors further describe four specific criteria for the theory of sense of community, including membership, influence, integration and fulfillment of need, and a shared emotional connection. The first criteria, membership, is defined as "the feeling of belonging or of sharing a sense of personal relatedness" (p. 9). Next, influence includes "a sense of mattering, of making a difference to a group and of the group mattering to its members" (p. 9). The integration and fulfillment of needs is "the feeling that members' needs will be met by the resources received through their membership in the group" (p. 9). Lastly, a shared emotional connection is "the commitment and belief that members have shared and will share history, common places, time together, and similar experiences" (p. 9).

In reviewing the four criteria presented by McMillan and Chavis (1986), it should be noted that none of the four perspectives require a face-to-face interaction and, therefore, all four could conceivably be applied directly to the online learning environment. The extent to which a community can reach – and if an individual can feel connected to others not tied to their time and place – is a central question in this investigation. Shackelford and Maxwell (2012) highlighted that building a sense of community within a course calls for a student-centered approach with activities that allow the learners to be active and involved with the process of learning.

Engagement and Collaboration

Creating structures that support student engagement within the online environment calls for a variety of tools and lessons, including, but not limited to: discussion boards, projects, peer review, and the sharing of resources (Shackelford & Maxwell, 2012). Education does not provide a one-size-fits-all approach for all students, therefore, instructors and designers of online courses must take special care to include a variety of assignments and assessments that will pull students into connections with each other and with the learning process. When a student can leave their shelter of insecurity or inactivity for the emboldened purpose of bridging gaps and knowledge, crossing a communication divide, productive learning can occur.

Establishing an active learning environment in which students are enthusiastically participating will help improve the likelihood that students will develop a sense of community (Dawson, 2006). Enthusiastic participation is developed, when not already intrinsic to the learner, by the pace, process, and perspectives offered by the instructor (Ouzts, 2006). Ouzts (2006) argued that much of this support for student engagement,

which is derived from the practices and design organized by the instructor, is developed online from the same pedagogy that creates this environment in the traditional classroom. Naturally, the methods of this practice and design are carried over with modification to fit the newer medium. The homosocial bonds created through communication, teamwork, and collective efforts have a crossover between physical and online classrooms, but not in all of the more familiar impressions. Learner collaboration is an important factor of both knowledge construction and social presence, so it should, therefore, be promoted within the classroom, despite any potential adoption or adaption issues (Garrison, 2007).

The online learning environment is unique for students seeking engagement due to their separation in time and space (Rovai, 2002c). Student engagement online improves by investing within the systems of community and the interrelationships between students and other courses (Young & Bruce, 2011). This conclusion is echoed in other related research of the outcomes in building a sense of community and satisfaction (Drouin, 2008; Liu, Magjuka, Bonk, & Lee, 2007; Swan, 2002). However, does a prevailing sense of community translate to a sense of perceived learning or more concrete measures of success in a course?

Achievement and Perceived Learning

It may be accepted that an increase in a sense of community can lead to an improvement, for many learners, in satisfaction with the course (Shackelford & Maxwell, 2012). With respect to the perception of achievement, however, the measurement of either context can be more difficult to determine. What evidence exists that a sense of community can produce greater achievement? To answer this question, it is important to

clarify the nature of achievement. Is success measured by higher summative grades, by retention rates, or by a learner's feelings of growth and content knowledge?

It is difficult to prove that greater engagement with the community can directly produce higher scores, but research shows that the inverse is true, as students who are less active and engage with peers and instructors at the minimum tend to fail more frequently (Davies & Graff, 2005). If expectations exist that interactions or behavior in a course will be tied to grades, there is some credence to the claim by Young and Bruce (2011) that "students who feel connected with peers and also engaged in course activities, in turn feel confident in their achievement and expectation of higher grades" (p. 225). Expectations for learning programs, too, may be affected by student interactions, as Liu, Magjuka, Bonk, and Lee (2007) found that active participation within online learning communities can combat retention, which is a major issue in online, distance learning programs (Allen & Seaman, 2015).

However, basing perceptions of achievement purely off of grades is inconclusive. Whereas Derrick and Wighting (2015) determined that there is indeed a positive correlation between a college learner's summative grades and perceptions of the sense of community, an observation that also holds true at the high school level (Wighting, Nisbet, & Spaulding, 2009). Rovai (2002b) pointed out that grades are not a functional substitute for the measurement of learning. Grades, as the primary indicator of a student in need of retention, are not as successful in measuring student attitudes. Furthermore, student retention isn't necessarily tied to sense of community (Drouin, 2008).

It must be said, however, that perceptions of learning – another measure of achievement – are not necessarily tied to grades either. Indeed, this is an area wherein a

sense of community reaffirms important connection students may make with their experiences and achievement. Rovai (2002b), in a study spanning over 25 different graduate courses, concluded that there is indeed a correlation between cognitive, perceived learning and the sense of community experienced by the learner. While the nature of the specific factors that – common across all studied courses – enforced this connection cannot be pinpointed, there is research that supports elements from that study. For example, Shea, Li, and Pickett (2006) identified the success of the instructor as a key factor, especially in connecting community to instruction, design, and course organization. Top (2012) found, using a perceived learning scale, that the use of blogging within online undergraduate courses not only established a sense of community within the students but was also a predictor for perceived learning. If community is essential to the optimal learning environment, as described above by Vygotsky (1978) and other sources, it must be seen as an important subject of study here. In short, the goal of identifying student success with respect to attitudes and feelings may lend themselves more to the deliberate study of sense of community.

Promoting Sense of Community

Building and strengthening one's sense of community is important in ensuring that students learn to work collaboratively with one another in the educational environment. Cheng (2004) described a study in which the sense of community perceived by undergraduate, on-campus students directly reflects or influences their well-being, attitudes of education, and feelings of self-efficacy. Cheng advises that the ideal university administration adopts practices and activities that promote a sense of community for their students, including these following descriptions:

> (1) [The university] has an open environment where free expressions are encouraged and individuality is accepted and respected, (2) engages faculty and students in teaching and learning, (3) provides an active social and learning environment in residence halls, (4) fosters positive relationships among ethnic and cultural groups through programs and student activities, (5) celebrates traditions and heritage of the institution, and (6) provides assistance to students when they feel lonely or depressed. (Cheng, 2004, p. 216)

Cheng's description highlights many of the features that are concomitant with the on-campus experience. In fact, many studies have been conducted on campus looking at the sense of community among the student population. In one study, the size of the university was shown to have a significant impact on student sense of community with the smaller schools having a more positive impact on the population (Lounsbury & DeNeui, 1996). Additionally, participation in school-related associations, such as Greek membership, clubs, and/or working on campus (Jacobs & Archie, 2008) positively influences a student's sense of community. Even the effect of nature has been studied, with the participation in outdoor activity trips showing to have had a significant positive impact on the participating students (Breunig, O'Connell, Todd, Anderson, & Young, 2010). From residence hall activities to professional counselors, the traditional university setting has many elements specifically in place for student well-being and feelings of connection. With so many opportunities to connect on-campus, it is now imperative to ask: how then can these features be translated for online learners?

Online Sense of Community

Where, when, and how do students connect with one another when there are geographic and temporal distances between them in their online coursework? Research in the field of online education, and specifically the social and psychological welfare of students, continues to develop. We are now starting to recognize the importance of a learning community within the online environment, as well as one's sense of belonging within that environment (Ouzts, 2006; Rovai, 2002b; Shea, 2006). By better conceptualizing how community, collaboration, and engagement work within this online setting, we as educators can better understand how to serve the growing number of students enrolled in online programs.

Having defined a sense of community and further explained its importance within online learning, it is also important to try to understand the individual learner's experiences within the online classroom. How do individual students perceive themselves as a learner within a virtual environment? And how does this student understanding of their virtual presence impact the potential for community establishment and growth? By understanding common experiences pertaining to individual students, one can hope to further understand how best to apply specific factors that will impact community to meet the diverse needs of a learning cohort.

Social Presence

Social presence is an important factor in student sense of community (Rovai, 2002c), for social presence is the ability for a learner to appear "real" within an online environment (Garrison, Anderson, & Archer, 1999). When students feel that they hold a presence with their peers and are "seen" within the learning environment, the likelihood

of those relationships growing into a community increases (Swan & Shih, 2005). Additionally, a student can combat feelings of isolation by establishing social presence within an online community (Drouin & Vartanian, 2010; Lake, 1999). Having a presence in a group may signal how much attention or interaction a student wishes to communicate to the group at-large (Drouin, 2008). So, how does an instructor encourage their students to share more about themselves? Stepich and Ertmer (2003) recommended the, now commonplace, use of introductory posts with feedback as one way to initiate this communication. Asking students to share information about their background and interests allow them to establish connections with one and other and create a social presence that can be drawn upon throughout the course. Expanding on these connections will cement concepts of the learners for each other, especially in making small talk or softening discussion board posts. As social presence increases, the likelihood of learner teamwork also grows.

In a comprehensive overlook of how social presence is defined and cited, Lowenthal and Snelson (2017) determine that the conception of social presence has changed since its inception as a component of community of inquiry studies into a highly promoted area of perceptions of students. In the online arena, developing or supporting students' social presence with respect to their teachers, peers, and coursework is a near-self-evident component of appropriate course design (Swan & Shih, 2005). Along a spectrum of potential interpretations of social presence, some disparity exists between concept such as "real" with respect to student perceptions of the interactions that define their coursework. It must be made clear, in this proposed study, that social presence for online students is conceived as the replication or at least approximation of the brick and

mortar experience in the classroom. This delineation is a result of the continued interpretation regarding the importance of centering online students within their coursework and remote interactions (Whiteside, Dikkers, & Swan, 2017). It should be highlighted that collaborating within an online setting can be challenging for students and instructors alike. Issues of timing, communication, and workspace can create challenges for those trying to work with one and other (Cleveland-Innes, Garrison & Kinsel, 2007). Therefore, establishing a social presence allows for students to better understand one and other and how to communicate through these issues.

Interaction

As social presence is established, and students begin to understand who they are within the virtual environment, students are likely to begin communicating and further interacting with other stakeholders in the class. Observations of student interactions can allow an instructor a greater sense of how students are relating to the virtual environment. Moore (1989) presented three different types of interactions that can add to the success of a distance learning program. These interactions include learner to learner, learner to instructor, and learner to content. Each of these interactions has been shown to contribute to a student's motivation within the course (Moore, 1989; Serwatka 2003; Smart & Cappel, 2006), as well as their enjoyment (Bernard et al., 2009; Rhode, 2009; Roblyer & Ekhaml, 2000; Rovai & Barnum, 2003; Sher, 2009; Swan, 2002). Additionally, these interactions have been shown to promote positive academic performance (Murray, Pérez, Geist, & Hedrick, 2013; Zimmerman, 2012). With so many positive outcomes, it is important that today's instructors and course designers leverage interactions within the online classroom in order to promote an optimal, satisfying learning environment.

Interactions can be promoted within the classroom in several different ways. Learner to content involves the use of course materials to construct, understand, and apply knowledge on a specific topic. The more interaction that occurs with the provided topic, the better students perform academically within the targeted area (Zimmerman, 2012). Next, learner to instructor interactions have been shown to promote student connectedness within a course (Shea, 2006; Shea & Pickett, 2006), as well as relate to the overall satisfaction of the student (Bernard et al., 2009; Rovai & Barnum, 2003). It is important that the instructor not only be online and active within the course regularly (Beaudoin, 2002) but that they present themselves as the point of contact for the course (Nash, 2005). Truly, the instructor directs and encourages interaction throughout the course and assists students with areas of confusion and frustration (Easton, 2003), making them, perhaps, the most important interaction of all. Lastly, learner to learner interactions can be increased through the design of the course, which should include purposeful, reciprocal opportunities for students to communicate through discussions or collaborative work, under and sometimes encouraged through the oversight of the instructor (Sher, 2009).

Interestingly, while interactions within the classroom between learners are an important part of both establishing a learning community and reducing feelings of isolation (Drouin & Vartanian, 2010), it should be noted that some students may simply not want these connections. Drouin (2008) found that while some students felt that they needed social connections and interactions within the online classroom, others wanted to be left alone. These students did not feel that social interaction was a necessity in their online learning experience, nor for the good of the course. Additionally, Gray (2004)

found that allowing students to remain in the community without demanding active participation at rigorous levels, or view content without participating, increased the likelihood of them joining a learning community later. The ability to watch and learn increased confidence and comfort in these individuals.

However, while some students may report that they have not felt that they needed learner to learner interactions, instructor presence was still an important key factor to success within the course. As a facilitator of the course, students need a leader to turn to with questions or concerns (Nash, 2005). This presents an underlying issue with community: individual stakeholders have varying needs from one and other. While this situational precept is sometimes challenging, an instructor's understanding of their individual students is key to knowing what levels of interaction and community are (or are not) needed. With this in mind, it is beneficial to have structures in place supporting all types of interactions, even if some students report a less individual need for one or another.

Transactional Distance

In addition to interacting, an overall understanding of how students perceive the distance between themselves in an online course can assist in the understanding of how to promote interaction and build community – both important aspects of a learner's sense of connection. Transactional perceived distance can be defined as the space between an individual learner both physically and psychologically (Moore, 1993). Communication, participation, and structure within an online course can improve a learner's sense of community and therefore decrease the transactional distance that they perceive. A common method to increase a community's communication and participation within an

online course is the use of discussion boards (Rovai, 2002c). Shin (2003) further explored how the use of discussion boards built upon the concept of transactional distance. The author described transactional presence, or the interpersonal connectedness between stakeholders in a class and the "belief or feeling that a reciprocal relationship exists between two or more parties, involving an individual's subjective judgment upon the extent of the engagement in relationships with others" (p. 71). Shin felt that this reciprocal relationship could be established within the give and take nature of classroom discussions and that building this relationship would ultimately improve student connectedness within a course.

While discussion boards are an important tool used to reduce transactional distance, and increase transactional presence (Rovai, 2002c, Shin, 2003), if a classroom community is not first established within the online course, students can be at risk for disengaging from discussion boards and dropping the entire class (Tinto, 1993). Therefore, adding discussions to a course without other considerations for developing community will likely not resolve a student's feelings of isolation. Instructors need to play an active role in facilitating these discussions for the learners, in order to build this sense of community (Shea, 2006; Shea, Li, & Pickett, 2006). Further, by providing engaging questions for discussion, an instructor is encouraging their class to demonstrate their understanding of the content's meaning. These learning experiences promote cognitive presence and deeper learning (Garrison & Cleveland-Innes, 2005). Overall, when using a discussion in class, it is important that instructors model appropriate participation and communication, while also including clear expectations for contribution and assessment in order to further promote interaction and social presence.

Community of Inquiry

Another conceptual understanding of transactional distance is reflected in the work of Garrison, Anderson, and Archer (1999) regarding the Community of Inquiry (COI). This model was developed specifically with computer-mediated education (online learning) as a focus, leveraging a student's online presence in order to meet student needs. Much like Moore's (1989) theories of student interaction, the COI looks at social factors that can inform practice within the field. The authors established three core factors that contribute to a COI, including social presence, cognitive presence, and teaching presence. How these relate to a student's sense of community is further discussed.

First, social presence measures the ability of a learner to identify with a community and project their personal characteristics in order to establish interpersonal relationships within the virtual environment. Social presence can be encouraged through activities that promote collaboration among students, which in turn, promote student expression and build a student's sense of community within the course (Garrison, 2007). Collaborative activities have the potential to establish a common purpose for students within the course and encourage further inquiry, increasing their social presence in the process.

The second factor that contributes to COI is the cognitive presence or the extent at which meaning is constructed from sustained discourse and reflection within the community. Through cognitive presence, students move between four categories of learning, including: the triggering event, exploration, integration, and resolution (Garrison, 2007). This presence relates most to a student's perceived learning, which can influence their sense of community (Rovai, 2002b; Top, 2012). In contrast to the face-to-

face environment, where information is delivered directly in real-time, the online setting requires an increased responsibility of the learner to obtain information for themselves (Garrison, Cleveland-Innes & Fung, 2004).

The last factor, teaching presence, includes the organization, structure, and direction of both social and cognitive presences with the purpose of creating rigorous and impactful learning outcomes for students. This last area reflects two dimensions: course design or organizational structures employed by the instructor, and also the invested involvement of the instructor during the course of their interactions with learners (Arbaugh et al., 2008). Interestingly, Akyol and Garrison (2008) found that the teaching presence was the largest contributing factor to a student's sense of community and learning, highlighting the importance of leadership in establishing student comfort in the online environment.

Each of the three features of COI may overlap as some components of online coursework – such as discussion boards or collaborative projects – engage learners in multiple presences (Garrison, Anderson, & Archer, 1999). The additional support role of social presence within the COI is to enhance cognitive presence and proximity to learning for the improvement of the student investment. The COI and other models of sense of community in action are essential in this era of online learning and instruction, driving, as they do, investigations into student behavior and understanding, as well as how designers and instructors can develop perceptions of meaningful, present activity in their courses. While the COI is a lens for interactions within the classroom, many of these lessons could potentially be applied to the larger university setting in examination of how activities are

organized, information is obtained, and leadership is established and communicated for the online student.

Evaluating a Sense of Community

As the positive outcomes and importance of building a learner's sense of community are further understood, how does an instructor or institution begin to build and evaluate this feeling within their students? The work of McMillan and Chavis' (1986) has inspired the development of two well-researched and validated tools used to measure a sense of community. First, the Classroom Community Scale, which has been developed to look specifically at the sense of community of students within an online classroom. Second, the Sense of Community Index Scale – 2 (SCI-2), takes a larger look at community within any group or faction. These tools can assist researchers in leveraging classroom data and student perceptions towards building a more cohesive and meaningful learning experience – at a distance.

Online Classroom Community Scale

Rovai (2002a) developed the Classroom Community Scale to measure an online student's sense of community within their learning environment. This instrument was initially used by Rovai within a field of 375 graduate students who were enrolled in 28 different Blackboard-based online courses. The Classroom Community Scale was initially developed based on prior literature into classroom community and was found to have high content and construct validities. The specific items within the tool were reviewed by three psychology professors, all of whom found the questions to be "totally relevant to sense of community in a classroom setting" (Rovai, 2002a, p. 204). Reliability of this tool was measured and produced favorable results. Within this study, Rovai

(2002a), was able to infer that classroom community is sensitive to both instructor delivery and the overall design of a course – calling for special attention from both instructors and designers in how they approach online learning.

With a now-established high validity and reliability, the Classroom Community Scale has been used in further research into the sense of community in online courses. In a later study, Rovai (2002b) found that a student's sense of community also impacts perceived cognitive learning – with students who felt more connected feeling that they, in turn, learned more from the course. Further, Dawson (2006) used the sense of community scale to evaluate how communication impacts community. Dawson found a significant relationship between the student frequency of communication and their sense of community. This communication occurred between both peers and also between students and staff. Indeed, for additional perceived learner outcomes we are now able to better measure and understand how one's sense of community influences these perceptions through the use of such scales.

The Sense of Community Index Scale - 2

Chavis, Lee, and Acosta (2008) developed a tool used to measure community within a given group, if not specifically within a classroom. This tool, the SCI-2, highlights and follows the four elements of community identified by McMillan and Chavis (1986): membership, influence, meeting needs, and a shared emotional connection. This instrument has been updated from its earlier predecessor, the Sense of Community Index Scale - 1, to improve validity across different cultures and contexts. This allows for the measurement of a variety of participants with distinct demographic, background, and program information. Chavis, Lee & Acosta (2008) have reported a

strong reliability within the larger sense of community analysis, as well as good reliability within the reported subscales:

> The SCI-2 was revised and used within a larger survey of 1800 people. The analysis of the SCI-2 showed that it is a very reliable measure (coefficient alpha= .94). The subscales also proved to be reliable with coefficient alpha scores of .79 to .86. (p. 2)

While Rovai's (2002a) Classroom Community Scale is helpful in measuring online classroom sense of community, the SCI-2 might be considered for studies that include a larger population from two or more programs. Another possibility is to consider or research outside the classroom and even into larger structures, such as specific colleges (e.g. College of Education) or institutions themselves (e.g. University of Wyoming). As students are engaged in learning, the community they may or may not identify with is also revealed to have levels and layers.

Synthesizing Sense of Community

In this century, student-centered classrooms and course design, as well as a demand for responsive, consumer-based programs, have evolved through a major pedagogical shift. Therein, the twin goals of student learning and student satisfaction are a course facilitator's paramount goals. McMillan and Chavis (1986) clarifies how experiences in a community express perceptions of learning. Sense of community is a matter of perception, and, just as with sensory experiences and attitudes, this perception is individually-constructed and variable. Providing the experiences that engage learners in their coursework, and the assignments and assessments that encourage student

ownership of their efforts, are the processes and practices that will develop a learner's sense of community (Dawson, 2006; Ouzts, 2006; Rovai, 2002c).

Components in building a sense of community are also examined in this chapter. Learner collaboration builds on student engagement and acknowledgment of learning partners (Garrison, 2007). Student engagement with each other and design elements of courses are improved by communal interaction (Young & Bruce, 2011). Satisfaction within a course, a learner's sense of value and effective delivery of learning materials, may be directly correlated to the learner's sense of place within the online course (Drouin, 2008; Liu, Magjuka, Bonk, & Lee, 2007; Swan, 2002). Students' physical and temporal separation from each other presents a challenge, but the tasks and purposes of student interactions, if appropriately engaging or considerate of needs are more powerful than the time or place of those interactions (Rovai, 2002c).

Students' perceptions of learning are improved by a sense of community (Rovai, 2002b). Models that measure sense of community – such as the Classroom Community Scale (Rovai, 2002a) and the Sense of Community Index Scale – 2 (Chavis, Lee & Acosta, 2008) – suggest that frequency and depth of communication between instructors and students, as well as the nature of interactions between participants, impact community. These observations effectively connect to theories of interaction, as proposed by Moore (1989) and Garrison, Anderson, and Archer (1999). Indeed, further study into these theories of distance and social presence for tomorrow's learners should be a major focus for future research.

For example, concepts of perceived learning vary by population. Females, more so than males, report greater perceptions of a sense of community and learning gained

from interaction in online courses (Rovai 2002b; Shea, 2006). The elements that create this broad impression are not clearly defined but may be typical of development into adult learning (Rovai 2002b). Identifying how a sense of community can be more powerfully felt by male learners may help with persistent issues of retention (Liu et al., 2007), and also improve engagement with self-advocacy (Davies & Graff, 2005, Drouin & Vartanian, 2010; Lake, 1999).

Additionally, researcher conceptions of what creates a sense of community will continue to evolve. Some online course mainstays – such as discussion boards and blog writing – are shown to improve perceptions of learning and proximity in the community (Shackelford & Maxwell, 2012; Stepich & Ertmer, 2003; Top, 2012). New elements of course design are also available. Shen, Nuankhieo, Huang, Amelung, & Lafey (2008) described the use of Social Network Analysis software to augment data analytics with respect to interactions. Perceptions of community within discussions and other forms of direct contact can be assessed with this tool to pinpoint the nexus individuals in communication – to see which learners or instructors are proving the most beneficial in prompting others to engage in discussion, proving the material some passive students need to become involved (Gray, 2004). As tools and course technology evolve, the ability to measure a sense of community will develop and diversify.

Overall, establishing a community within a virtual environment should be celebrated as being an achievement in and of itself. Distance education, and particularly online education, has brought together a community of learners worldwide who are able to construct knowledge while sharing unique ideas and perspectives. We are now able to learn together like never before. The study of community, and one's sense of community,

is important in helping online learning continue to grow and reach all interested learners. By establishing theory pertaining to the psychological elements of online education, we are recognizing that these students have a social presence within their virtual space. It is important that research in this area continues to grow in order for online education to be seen as a less isolating and more normative option. Only by understanding these online learners will we be able to better assist them, and those who come after them, in their goals of learning.

Chapter Summary

This chapter reviews pertinent literature with respect to the influence of students' perceptions and sense of presence within online courses and programs, as well as the history and tools used to identify and study students' sense of presence. Significantly, student perceptions of their online, social, educational presence within their courses can be directly linked to feelings of competence and wellbeing within an online course (Gray, 2004; Shackelford & Maxwell, 2012), can help predict student retention and endurance through an online program (Liu et al., 2007; Yang, Baldwin & Snelson, 2017), and has a link toward improving students' academic pursuits (Young & Bruce, 2011). Research identifying student interactions as investing in a sense of community (Moore, 1989; Rovai 2002b; Shea, 2006) specifically highlights interactions between the students and their instructors, their peers, and course design elements. This study sought to add to the existing body of literature in providing insights into the role of a higher learning institution in its students' sense of community. The next chapter describes the mixed methods methodology and offers detail into the procedures for data collection and data analysis.

CHAPTER THREE: METHODOLOGY

Introduction

Clearly, the need for further study with respect to student sense of community, student interactions, and student perceptions of the online learning environment is paramount. In the near future, as more students from around the world enroll in online, distance programs through higher learning institutions, it will be essential for both students and the higher institutions to consider the potential effects and incentives offered to online students through enrollment. It is possible that concerns of retention, dissatisfaction, and reduced participation may develop if issues identified in student actualization of their social presence, or the nature of interactions between students and their learning environment, are not studied fully. Conversely, there should be support and recognition if a higher education institution is successfully embedding its students into its culture, improving student perceptions, activity, and success. This study engages with this need in its conduct and discussion.

The purpose of the study, research questions, the research design, data collection, and data analysis were discussed previously. This chapter further describes the methodology used in the study. The instrument of quantitative data collection, the Sense of Community Index (SCI-2) scale (Chavis, Lee, & Acosta, 2008), is reviewed in greater detail, and the implementation of the subsequent qualitative interview is addressed. The rationale for a mixed methods approach is provided and explained. Lastly, this chapter discusses potential ethical considerations and limitations in the study.

Statement of the Problem

There is a need for further research pertaining to online students – those who are removed from the physical campus – with respect to their sense of community to the higher learning institution providing their education. Though online students are not physically represented on campus, they are still recognized as a part of the larger student population. Because of this, it is important that these students receive services and opportunities similar to those of their brick and mortar counterparts. As explained in the literature review, feelings of connectedness and inclusion can impact academic (Young & Bruce, 2011) and emotional (Gray, 2004; Shackelford & Maxwell, 2012) wellbeing. As student populations in the online environment continue to grow, it is even more important that we understand how these students connect to their educational experience as a whole.

The purpose of this mixed methods study was to explore the sense of community of online graduate students, enrolled in the educational technology (EDTECH) department, and the higher learning institution providing their courses. This study included a survey of student perspectives to better understand their level of a sense of community and belonging within the university community which they are supposed to be part of. Follow-up interviews with selected students were then conducted with a goal of understanding how a providing institution can improve its services for current and future online students to improve retention, create a sense of community, and to improve overall online student morale.

Research Questions

Three research foci were examined in this study. First, to establish an understanding of a student's sense of community within his or her higher learning

institution. Second, to further identify what specific factors within that institution influence a student's sense of community the most. Third, to determine how the integration of the two collected data sets could further support this overall study. A mixed methods approach was chosen to allow for a quantitative representation of the participants' feeling of community followed by qualitative interviews to understand, more deeply, the specific factors that influence a participant's response. For quantitative data, a Sense of Community Index – 2 Scale (SCI-2) was used, allowing for this research question to be answered in a timely, efficient manner, while still providing a thorough examination of the students' level of connection. The first research question was stated as:

1. How do online graduate students perceive their overall sense of community with a higher learning institution delivering their courses?

The quantitative results of this study were supported and better understood with the use of interviews that examined individual student perceptions and experiences within the university. Data collected provided insight into the initial SCI-2 survey results. Interview questions focused on potential areas of both positive impacts or areas of improvement within the current program at the university. This information may better guide other universities in how they approach their online students. These interviews were conducted after the initial survey had been completed. All interviews were then coded for related themes and in an attempt to answer the second research question:

2. What are the student perceptions of the services and/or aid a higher learning institution could provide to support its online graduate students' sense of community?

The final phase of the study included the integration of the two data sets in an effort to find further meaning and connection between the two research approaches, and to enhance the overall findings (Creswell, 2009). Creswell and Plano Clark (2011) highlighted that the use of an additional mixed methods question is important as it provides a rationale for the use of both quantitative and qualitative data in one study and brings the data together to provide further support and meaning to the overall study. Therefore, a methods-focused question was established in order to identify whether or not the themes collected from the semi-structured qualitative interviews related to the results of the SCI-2. Specifically, did the themes found within the interviews relate to the subscales of the SCI-2 survey? This analysis allowed for the mixing of the two aforementioned data sets and helped further explain the results of this study, as described in the third research question:

3. In what way do the themes from the semi-structured interviews inform the overall quantitative results from the SCI-2 survey?

Research Methodology

Different approaches have been employed in studying a student's engagement, learning, and sense of community, including using specific educational tools, such as discussion boards (Yang, Richardson, French, & Lehman, 2011), Twitter (Lord & Lomicka, 2014), or virtual worlds (Wu, Richards, & Saw, 2014), to name a few. Because there is no single, standard model of delivering online education that can be analyzed, the researcher elected, for this study, to directly approach the students in collecting their sense of community, experience, and feelings. To conduct this investigation, the methodology utilized an explanatory sequential design method in which quantitative data

had priority and was sought first, informing the latter qualitative collection (Creswell & Plano-Clark, 2011). Quantitative results provided an overview of the participants' sense of community within their online programs, and allowed for the collection of a larger, more representative sample. Qualitative interviews then drew upon these quantitative results and were used to explain and build upon any earlier outcomes (Creswell & Plano-Clark, 2011). The combination of these two methods was necessary to provide both a representation of the participants while also capturing the human complexity of the participants themselves (Goertzel & Fashing, 1981).

Choosing a mixed methods approach is often guided by how one can best address the study's research questions (Creswell & Plano-Clark, 2011). While qualitative and quantitative methods are often employed independently, the combination of the two in mixed methods research could be considered as the "third major research approach" (Johnson, Onwuegbuzie, & Turner, 2007, p. 115). However, the use of mixed methods research can create many frustrations due to ambiguity, as there are no definitive rules on how to approach this methodology. For example, researchers do not have an agreed upon definition of mixed methods research (Morse & Niehaus, 2009). Perhaps this is due to a lack of true mixed methods studies within the field. While mixed methods are often used initially as part of the research design, researchers often choose to report their findings separately – resulting in separate manuscripts for the quantitative and qualitative approaches (Archibald, Radil, Zhang, & Hanson, 2015). This can be a benefit for researchers as they gain two papers out of one study, albeit the published pieces are less precise to the actual conduct of the research and the mixed methods body of literature.

Despite these shortcomings, leading researchers have begun to define approaches, establish best practices, and create relevant definitions to be used by future, novice researchers. It is recognized that practitioners new to mixed methods benefit from using established mixed methods approaches, as such approaches can "serve as road maps for data collection, analysis, integration, and interpretation" (Archibald et al., 2015, p. 20). Indeed, this researcher employed these road maps in the study in order to provide transparency about the use of mixed methods in its research design and to lead to greater legitimacy for the study as a whole (Guest, 2012).

Context

This study was conducted in the EDTECH department of a public university in the northwestern United States. While the university itself is an established brick and mortar institution offering courses on-campus, it does host online coursework, including the completely online department of EDTECH. This department holds a variety of programs that offer both certificates and full degrees. At the time of this study, the EDTECH department served approximately 320 graduate students. The department offered six different degree program options, including Master's and Doctorate degrees and five additional graduate certificate options for students both domestic and international.

In the department, two separate models of student organization are used. At the Master's level, students are required to enroll in five courses that pertain to the foundations of educational technology and are otherwise free to take courses at their own pace and within their own interest areas. Because of this, they are not necessarily part of a cohort that takes classes together, although they may see familiar peers throughout their

coursework. On the contrary, the Doctorate program is more structured to create cohorts among students admitted within the same year. In addition to taking similar courses at a similar pace, these individuals would, hypothetically, advance through the program together. This distinction is notable as the participants in this study may approach their classmates and coursework differently based upon their graduate course organizations.

Support for students enrolled in the EDTECH department occurs on various levels. All students have access to a technology support system within their learning management system. In terms of advisement, support occurs at several levels with an enrollment advisor, a program advisor, and an academic advisor. These support systems are in place to better meet specific student needs at a distance. The level of communication and support needed will vary based upon individual student experience and need. While this study references the advisors, it should be noted that some participants perceived the three advisory roles as one or were unaware of differences amongst the positions.

Participants and Sampling

The first, quantitative phase of this study utilized a convenience sampling method due to the availability and accessibility of the online student participants (Onwuegbuzie & Collins, 2007). Participants in this study were enrolled both part- and full-time within the graduate online EDTECH program delivered by the brick-and-mortar institution. An initial sample size of approximately 96 – 194 graduate students within the entire EDTECH department was sought for the online survey on the SCI-2 measurement – as normal online survey response rates can fall between 30 to 60% (Nulty, 2008) – based on the population of the EDTECH graduate students (N=323). This population included 236

Master's students and 87 Doctorate students. This information was collected directly from the EDTECH department and reflected the number of students enrolled and registered in courses for the Fall 2018 semester. This number did not include "stop out" students – those who have temporarily stopped taking courses. Upon recruitment, the final count of quantitative survey participants was 91 students.

Within the second, qualitative phase of this study, a purposeful sample of the students who completed the SCI-2 survey and indicated that they would be interested in being interviewed was utilized. A purposive strategy, maximum variation sampling, was used in this study (Creswell, 2013), allowing for the selection of participants whose survey answers encouraged further investigation or supported the researcher in looking for common themes (should survey answers be similar). For this study, a variance in the program of study (Master's vs Doctorate program of study), gender, and sense of community (strong vs weak based on the quantitative survey responses) was sought. The sample size for this phase was dependent upon student interest in being interviewed and the saturation of the revealed themes. The number of participants sought within this sample were guided with the recommendations of Guest, Bunce, and Johnson (2006) who suggest that 6 to 12 interviews should suffice in purposive sampling in understanding common perceptions and experiences. Ten participants were recruited for this phase of the study out of 17 that volunteered. Both phases of this study aimed to analyze the representations of varied populations within the demographics – including age, gender, educational level, marital status, etc.

Data Collection and Instruments

The timing and purpose of data integration are considered two of the most important dimensions in describing one's mixed methods approach (Guest, 2012). In this study, two instruments were employed within the two phases to collect both quantitative and qualitative data (Figure 1). The first phase included recruiting students to participate in the study. This was completed in two ways, utilizing the same script, via email and through a post in the department's learning management system Moodle (Appendix A). Reminder emails were sent each week in an effort to recruit as many participants as possible. Each method contained a unique link to the online survey that allowed students to opt in or out of the study.

Once recruited, the participants were asked to complete an online survey featuring demographics questions and the SCI-2 (Appendix B). This survey was hosted in Qualtrics, and all information, including the forms and collected data, were stored in a secured, institutional drive with password protection. Online data collection via Qualtrics was selected in order to seek a more representative sample, larger population, and to increase participation (Hesse-Biber & Griffin, 2013). While collecting data online can create the risk of excluding populations, the participants of this particular study (online students) were assumed to perceive the online setting as a more natural and comfortable venue for data collection. Hesse-Biber and Griffin (2013) noted that by using the online medium for surveying, participants' familiarity and potential convenience could be employed for efficacious (i.e. realistic) participation. The choice of this venue was to meet students directly where they could be most accessible and familiar with the context of online learning.

Figure 1. Explanatory Sequential Mixed Methods Design

The SCI-2 scale (Chavis, Lee, & Acosta, 2008) was selected as a primary quantitative data collection instrument due to its high reliability and validity across different groups and cultures. The classroom community scale (Rovai, 2002a), with the intended focus on classroom experiences, may not have captured the full extent of how online students relate to their larger University culture; the SCI-2 has the potential to provide more nuance through subscales and a broader focus to students' experience. The SCI-2, in a surveyed population of 1,800, demonstrated a coefficient alpha of .94 for the total sense of community index and a .79 - .86 coefficient alpha for the related subscales (Chavis, Lee, & Acosta, 2008). The SCI-2 is a Likert-type survey that features 24 questions whose scores are combined to find the "Total Sense of Community Index". Additionally, this instrument features four subscales, derived from elements of theory on social connectedness, that measure a participant's reinforcement of needs, membership, influence, and shared emotional connection. Upon completion of the SCI-2, students were asked a final survey question as to whether they were interested in participating in the later interview.

The second phase of data collection consisted of one-on-one, semi-structured interviews with participants who had agreed to be contacted in the online survey. Interviews were conducted via web conferencing to allow for the audio recording of the conversation. Seventeen students had been previously asked in the survey to express

willingness to participate in the interview. Of these seventeen, one of these volunteers was excluded due to their prior experience with the researcher (he was a member of the same doctoral cohort).

Ten participants were selected to contacted from the remaining pool of 16. These ten students that were selected based on the results of their SCI-2 survey, allowing for students with differing scores on their sense of community to expand on their experiences. Demographic information, including: age, gender, program of student, and employment status, were then considered in order to select a variety of participants. Additionally, whether or not the student had visited the University campus was given attention to ensure the perspective of truly remote students in addition to some students who were more familiar with their school of attendance.

Interviews were scheduled individually via email (Appendix C). Six of these ten students agreed to move forward and were scheduled at a time that worked best for them. Four students did not respond to the email invitation. Because of this, the remaining six participants within the pool were contacted and four of these six students agreed to move forward with the interview. The remaining two students expressed an interest in scheduling an interview, but could not find a time to meet within the interview window.

Once participants were selected and an interview was scheduled, students were asked pre-structured interview questions guided by the results of the SCI-2 and expanding on their sense of community (Appendix D). These questions pertained, overall, to their level of connectedness, perceptions of the institution, and suggestions for improvement in the university and were guided by the subscale themes, as defined by McMillan and Chavis (1986) (Table 3.1). These established questions (Appendix D) were

followed closely within the interviews. Some additional questions (Appendix E) were added to follow-up on student answers. However, these questions were not consistent amongst all participants and were only used to delve deeper into topic brought up by the individual participant. Particularly, questions pertaining to cohorts and connecting with other online student would arise as students detailed their experiences in the program with their peers.

Table 3.1 SCI-2 Subscale Definitions

Subscale	McMillan and Chavis' (1986) Subscale Definitions
Reinforcement of Needs	"This is the feeling that members' needs will be met by the resources received through their membership in the group." (p. 9)
Membership	"Membership is the feeling of belonging or of sharing a sense of personal relatedness." (p. 9)
Influence	"A sense of mattering, of making a difference to a group and of the group mattering to its members." (p. 9)
Shared Emotional Connection	"The commitment and belief that members have shared and will share history, common places, time together, and similar experiences." (p. 9)

Upon the completion of the individual interviews students were assigned aliases to protect their privacy. As the qualitative phase of this research had a smaller sample, the participant interviews were transcribed by the researcher into a Google document for each participant. Some preliminary memoing occurred during the interview and transcription process to highlight important quotes or ideas observed at the time (Saldaña, 2013).

Data Analysis and Procedures

In a mixed methods study, the data analysis is performed in two separate phases, with a third phase of mixing this data together. In this study, first, the quantitative

analysis of the SCI-2 survey consisted of the reporting of frequencies, mean, median, and mode. The data collected within the surveys was uploaded into Statistical Package for the Social Sciences (SPSS) software to allow for analysis. Overall results of the SCI-2 were reported within a frequency table, allowing for direct access to the participant responses. Additionally, specific attention was paid to the mean, median, and mode values within overall scores, subscale scores, and individual question responses in the hope of providing a more informed look at how the students responded.

Qualitative data was uploaded into the coding program NVivo and two cycles of coding (structural and pattern) occurred within this phase, with a third phase of coding to occur in the mixing phase. Because of the nature of the research question, which asks specifically what services and aid a higher learning institution could provide to support a students' sense of community, an elemental method of coding was used. Specifically, structural coding was selected within the first coding cycle, allowing for the coding of all statements pertaining to services and aid, which represents the topic of inquiry (Saldaña, 2013). These statements were coded into a parent node of "Services & Aid" within NVivo. Transcripts were reviewed a second time and additional results that were missed in the first review were added.

A second cycle of coding occurred once the first cycle was concluded. Pattern coding was employed in this cycle in order to review the content within the parent node of "Services & Aid" and establish themes from this content (Saldaña, 2013). These excerpts were then reviewed and analyzed and several emergent themes began to develop. Similar ideas were grouped into themes and the following sub-codes were established: applicable emails, cohorts, counseling and advising, existing services,

memorabilia, and services not needed. All recorded services and aid from the parent node fell into one of these children nodes.

The mixing of the content ensued as the third phase of this study. Connections to the quantitative data were sought to both report the results and assist in triangulating the data. First, the established themes (and the content of each) were reviewed and connections to the theory of sense of community (McMillan & Chavis, 1986) were explored. Themes that arose within the coding were coded themselves to a corresponding subscale from the SCI-2 (Figure 2). This entailed a third cycle of coding which followed an elaborative model as described by Saldaña (2013). An elaborative model is a method that expands on an existing theory or study – in this case, sense of community (McMillan & Chavis, 1986) – through a contemporary study following a similar theme or method, but in a new context. This allowed the subscales from the SCI-2 to be connected to the specific themes developed within this study allowing for the mixing of the two data sets (Figure 3).

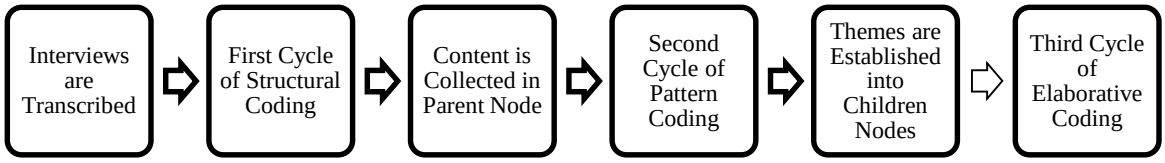

Figure 2. Qualitative Method

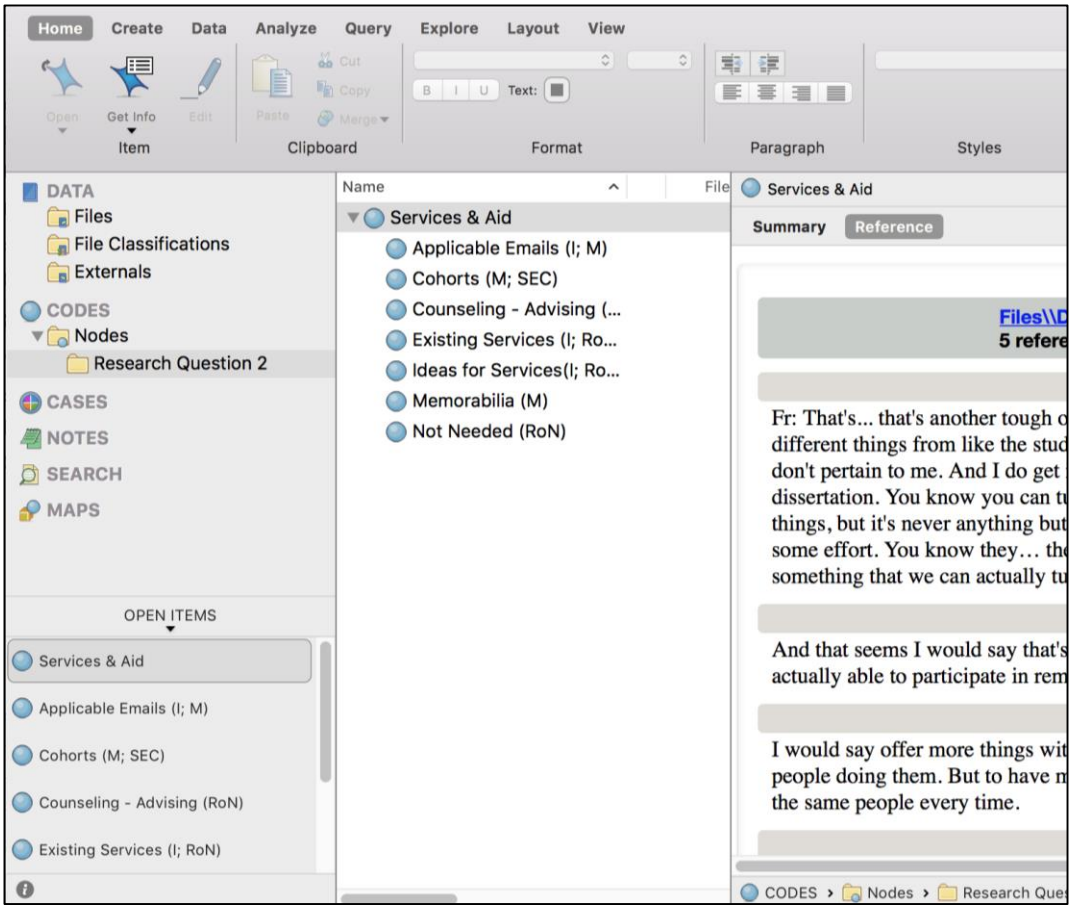

Figure 3. NVivo Code Book

Further, this cycle of coding was conducted in order to relate the qualitative results to the quantitative results in a way that could provide further recommendations pertaining to each specific subscale. This analysis was completed in an effort to provide further meaning to results, triangulate the data, and provide support for the mixed methods approach overall (Creswell, 2009).

Reducing Bias and Increasing Validity

Bracketing

Prior to the qualitative data collection and analysis, measures to limit bias and improve credibility were put in place. One specific measure was that of bracketing. Bracketing one's knowledge and experience allows for the data to be perceived with a

fresh and open outlook (Creswell, 2013). Therefore, bracketing was employed in order to withhold the researcher's prior knowledge and assumptions about sense of community, online learning practices, and the awareness of services and aid available at the University or through the educational program. Bracketing this information allows the researcher to perceive the participants' experiences as an observer instead of as a fellow member of the university, online instructor, and/or sense of community researcher.

Rich, Thick Descriptions

Rich, thick descriptions are used throughout this study to improve transferability (Lincoln & Guba, 1985). Detailed descriptions of the context, participants, methodology, and themes were included to allow readers to determine whether the findings of this study can be transferred based on any shared characteristics (Creswell, 2013). Descriptions and rationale for the tools and approaches were included to provide a full picture of the overall study.

Interview Protocol

There was a delicate balance within the interview process to create comfort for the participant while also ensuring validity and the aforementioned bracketing. During the qualitative interviews, participants often interjected their own questions for the researcher into the scripted interview questions. These statements have been redacted from the transcripts to protect participant privacy, but such questions were often specific toward the researcher's experiences within the program and requested advice that could pertain to the participants' path through the program (i.e. "What are the comprehensive exams like?").

An effort to restrict bias, in such instances, was essential during the interview process to maintain validity. Therefore, once the interview questions were completed, participants were encouraged to share any other pertinent points before the researcher would end the interview and conclude the recording. Participants were then able to ask the questions unrelated to the research topic. By working to ensure a cleaner separation – for both the researcher and the participants – the researcher worked to consciously avoid any verbal communication that could have influenced the participants' answers (Creswell, 2013). However, it could be noted that the participants' desire to connect with the researcher may be representative of a desire for community and/or aid in general.

Member Checking

Member checking occurred for several participants to ensure that the transcribed interviews were accurate to the intended expression. Member checking was only completed in instances where the participant could not be understood or used terminology unfamiliar to the researcher. Clarification was sought via email and all participants that were reached out to replied to this request. While member checking the transcripts and or findings with participants can be an excellent way to strengthen and confirm the content (Lincoln & Guba, 1985), it can also create drawbacks and issues with the collected data (Sandelowski, 1993).

In the case of this study, the interviews themselves were difficult to schedule and responses to member checking of all data could not be guaranteed. The transcripts were long and member checking would require a significant amount of time and effort on the part of the participant. Also, member checking created a risk of misinterpretation as the participants may not be familiar with sense of community. The researcher felt that the

data sought (services and aid) for this study was fairly straightforward, not requiring an abstract interpretation and therefore did not necessarily require follow-up to clarify. Because of this, member checking was not conducted across the board.

Ethical Considerations

It was imperative that all participants within this study understood that all data would remain private throughout the duration of this study and thereafter. As the participants were students within the department, it was communicated and enforced that no academic gain could be obtained by participating in this research. Further, participants would not be punished nor face retaliation as a result of their input or lack of participation. The anonymity and confidentiality of the research participants was respected and all participation was voluntary.

Chapter Summary

Chapter three outlines the methodology employed within the study. This study sought to provide a balanced look at students' experiences within the EDTECH program at the Northwest University in hopes of understanding student-to-university community. The study of human emotion, especially at a distance, is a complicated venture. The methodology presented within this chapter is one approach to gathering such complicated data from two sources (survey and interview), while representing the individual experience of being an online student. While this study cannot account for all online universities, programs or students, it represents a step toward future work within this area of research. The next chapter presents the results of the study.

CHAPTER FOUR: RESULTS

Introduction

The results of this study are presented in three separate phases that answer the three research questions. In the first phase, the quantitative survey outcome is presented, providing an overall view of the participants' sense of community to their providing institution. In the second result phase, an analysis of the qualitative follow-up interviews is provided, allowing for a deeper view of student experiences and opinions and also providing the participants the opportunity to further detail their own thoughts on community. Lastly, the third result phase presents the two sets of merged data, triangulating the two sets of data to provide a deeper understanding of student sense of community.

Phase I: Quantitative Results

The quantitative phase of this study sought to answer the first research question: How do online graduate students perceive their overall sense of community with a higher learning institution delivering their courses? Participants were sent an invitation and reminder emails to participate in the Sense of Community Index II (SCI-2) survey through their institutional email address and were given four weeks to participate. Additionally, a single invitation to participate was posted to the students' learning management system. Students were encouraged to participate through an appeal to altruism, as the email invitation was presented as a researcher in need of data and specifically stated that the responses could potentially improve or maintain student

services by providing student perceptions to the state of the online program. No economic or academic incentives were included in this study for participants. Reminders were sent on a weekly basis to those who had partially completed the survey or had not yet started to increase participation. Ninety-one students participated in the survey portion of this study. The results of this survey are provided below. First is a review of the survey participants and their demographics. This is followed by a breakdown of the SCI-2 survey answers starting with the validating question. This is followed by the total index score which encompasses a total for all of the questions. This section ends with a review of the subscale outcomes. Further discussion, interpretation, and potential application of the results occurs in the next chapter.

Survey Participants

Ninety-one students participated in the SCI-2 survey, providing a 28% response rate from the department online student population (N=323). According to Fosnacht, Sarraf, Howe, and Peck (2017), a response rate above 25% is considered reliable within a higher education setting of 250 or more students. The sample population featured a variety of age groups (Table 4.1) with both female and male participants. Diversity among students' self-identified race was not as varied, with most students (92.3%) identifying as Caucasian.

Table 4.1 Participants' Demographic Information

	Frequency	Percent
Age Groups		
18 to 24 years	2	2.2
25 to 34 years	29	31.9
35 to 44 years	36	39.6
45 to 54 years	16	17.6
55 to 64 years	8	8.8
Gender		
Female	60	65.9
Male	31	34.1
Race		
American Indian or Alaska Native	1	1.1
Asian	3	3.3
Other	3	3.3
White	84	92.3

Participants were asked additional questions about their role(s) and interactions with their University. These questions were intended to help further provide a picture of participants' experiences with the institution. First, students were asked to identify their program of study (Table 4.2), revealing that about 40% of the participants were Doctoral students and 59% were Master's students within the EDTECH department. The EDTECH department also offered potential students the opportunity to enroll in graduate certificate programs without seeking a graduate degree. One student enrolled in a graduate certificate program took this survey. The participants' numbers (Table 4.2) were representative of the programs' students, which featured more Master's than Doctoral students.

Table 4.2 Participants' Program of Study

		Frequency	Percent
Program of Study	Doctoral Degree	36	39.6
	Graduate Certificate	1	1.1
	Master's Degree	54	59.3
	Total	91	100.0

In similarity to the earlier demographics, the delineation of participants' years enrolled varied between 1 year and 5 or more years, presenting a wide variety of experiences and, potentially, perceptions of comfort or familiarity with the institution (Table 4.3). In looking at student interactions with the campus, most participants (67%) had never visited the campus in person (Table 4.3). Despite the program being offered remotely, however, 33% of students had been on campus at some point in time.

Table 4.3 Participants' Demographic Information

	Frequency	Percent
Years in Program		
1 year	26	28.6
2 years	25	27.5
3 years	20	22.0
4 years	9	9.9
5 or more	11	12.1
Visited Campus in Person		
No	61	67.0
Yes	30	33.0

SCI-2: Initial Question

The SCI-2 features an initial, validating question for participants that asks how important sense of community is to them when interacting with others (Table 4.4). Chavis, Lee, & Acosta (2008) noted that this question can be used to interpret the results of the SCI-2 and that the SCI-2 total index (all questions added together) can be

correlated with this question in most groups. Answers to this question were varied for students enrolled in the EDTECH department. There was an almost even split between students who found sense of community to be somewhat important or higher (52.8%) and students who found sense of community to be not very important and lower (47.2%). Few students answered in the extremes, with only three students (3.3%) indicating that sense of community with others is very important to them and 0 (0%) students selecting that they would prefer not to be a part of this community. Instead, the middle options contained the highest values, with "Somewhat Important" having the highest frequency (37.4%), followed by "Not Very Important" (28.6%).

Table 4.4 SCI-2 Initial Validating Question

	Frequency	Percent
1 - Prefer Not to be Part of This Community	0	0.00
2 - Not Important at All	17	18.7
3 - Not Very Important	26	28.6
4 - Somewhat Important	34	37.4
5 - Important	11	12.1
6 - Very Important	3	3.3
Total	91	100.0

Total Sense of Community Index

Once the validating question was analyzed, the SCI-2 total index was calculated by adding all of the questions in the SCI-2 survey (Table 4.5) to find the overall total. The lowest value for this index would be 0, meaning all questions were answered with the lowest response of "not at all". The highest value for this index could be 72, meaning that all 24 questions were answered with the highest response of "completely". Most surveys featured a variety of values (between minimum 0 and maximum 3) that are explored further within the results.

Table 4.5 SCI-2 Individual Questions

#	Question
Q1	I get important needs of mine met because I am part of this community.
Q2	Community members and I value the same things.
Q3	This community has been successful in getting the needs of its members met.
Q4	Being a member of this community makes me feel good.
Q5	When I have a problem, I can talk about it with members of this community.
Q6	People in this community have similar needs, priorities, and goals.
Q7	I can trust people in this community.
Q8	I can recognize most of the members of this community.
Q9	Most community members know me.
Q10	This community has symbols and expressions of membership such as clothes, signs, art, architecture, logos, landmarks, and flags that people can recognize.
Q11	I put a lot of time and effort into being part of this community.
Q12	Being a member of this community is a part of my identity.
Q13	Fitting into this community is important to me.
Q14	This community can influence other communities.
Q15	I care about what other community members think of me.
Q16	I have influence over what this community is like.
Q17	If there is a problem in this community, members can get it solved.
Q18	This community has good leaders.
Q19	It is very important to me to be a part of this community.
Q20	I am with other community members a lot and enjoy being with them.
Q21	I expect to be a part of this community for a long time.
Q22	Members of this community have shared important events together, such as holidays, celebrations, or disasters.
Q23	I feel hopeful about the future of this community.
Q24	Members of this community care about each other.

Descriptive statistics of the SCI-2 total index revealed that the mean of the participant totals was 25.12, with a median of 23 and a mode of 20 (Table 4.6). However, the standard deviation for the total index scored was high (13.723), revealing that there were many scores spread out from the average. Because of this, frequencies were provided to show the different total index values (Table 4.7). In table 4.7, the most common values include 20 (6.6%), 0 (5.5%), and 18, 22, 29, 30, and 37 (4.4% respectively).

Table 4.6 Total Index Descriptive Statistics

Mean	25.12
Median	23.00
Mode	20
Std. Deviation	13.723
Range	54

Table 4.7 Total Index Frequency of SCI-2

		Frequency	Percent
Total Scores	0	5	5.5
	1	1	1.1
	2	2	2.2
	4	1	1.1
	5	1	1.1
	8	1	1.1
	11	1	1.1
	12	2	2.2
	13	2	2.2
	14	3	3.3
	15	2	2.2
	16	2	2.2
	17	2	2.2
	18	4	4.4
	19	3	3.3
	20	6	6.6
	21	2	2.2
	22	4	4.4
	23	3	3.3
	24	3	3.3
	25	1	1.1
	26	1	1.1
	27	1	1.1
	29	4	4.4
	30	4	4.4
	33	3	3.3
	34	1	1.1
	35	1	1.1
	37	4	4.4
	38	2	2.2
	39	3	3.3
	40	3	3.3
	41	2	2.2
	42	2	2.2
	44	2	2.2
	46	1	1.1
	48	2	2.2
	50	1	1.1
	51	2	2.2
	54	1	1.1
Total		91	100.0

Subscales

The four subscales (reinforcement of needs, membership, influence, and shared emotional connection) each consist of six questions that are added together with a total that represents the strength of each category. Each subscale has a minimum total value of "0" (all answers marked "not at all") and a maximum total value of "18" (all answers marked "completely"). The student responses were recorded and manually added to find the value for each subscale. The mean, median, mode, and standard deviation were then found for the total number of 91 participants (Table 4.8; Figure 4). These results indicated that on average, students found Reinforcement of Needs to be the highest scored category (7.69) and Membership to be the lowest (5.32) among subscales of their sense of community. This was further supported by the median and mode in each category (Reinforcement of Needs and Membership) which were, again, the highest and lowest values respectively.

Table 4.8 SCI-2 Subscales Descriptive Statistics

	Reinforcement of Needs	Membership	Influence	Shared Emotional Connection
Mean	7.69	5.32	6.35	5.75
Median	7.00	5.00	6.00	5.00
Mode	12	4	5	5
Std. Deviation	4.189	3.467	3.634	3.814

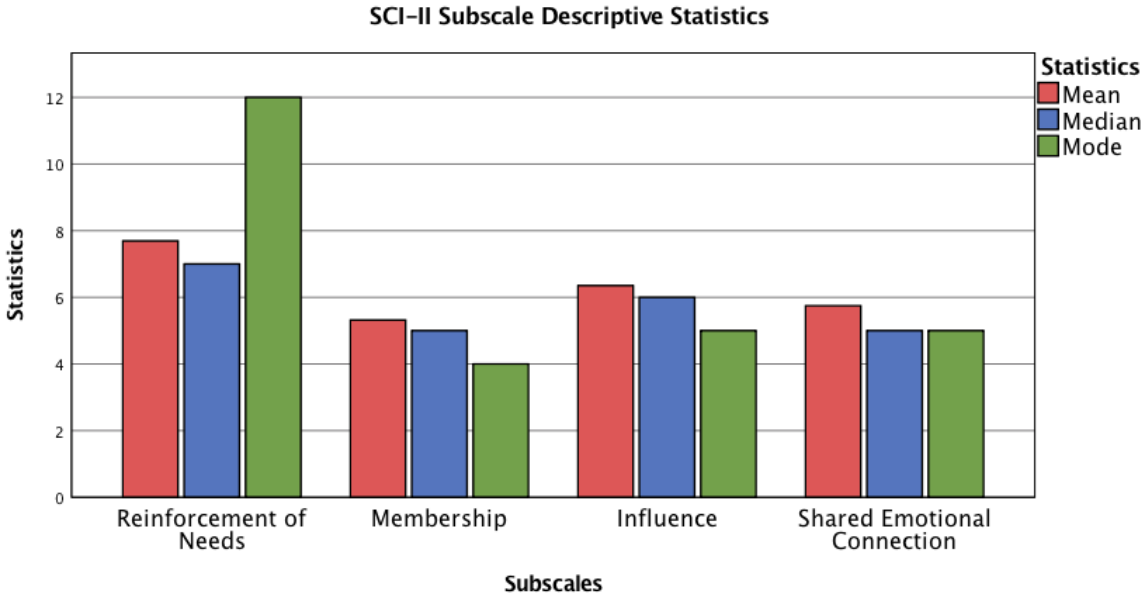

Figure 4. SCI-2 Subscale Descriptive Statistics

A more detailed analysis of each of the subscales follows, allowing for a more in-depth look at the specific factors that had influenced each participant's total index score. Additionally, reviewing these subscales provides a better understanding of how the students connected and did not connect to their institution. Subscales reveal the frequency of their totals and the descriptive statistics of the individual questions that make up the subscale score. These individual questions again narrow in on specific ideas that influenced student response.

Reinforcement of Needs

McMillan and Chavis (1986) defined reinforcement of needs as "the feeling that members' needs will be met by the resources received through their membership in the group" (p. 9). The SCI-2 features six questions pertaining to Reinforcement of Needs (Table 4.9) that were added together to create a total score for the subscale. Participants

within the SCI-2 recorded the highest values within this subscale, which is reflected within the frequency of scores with a score of 12 being the most common (Table 4.10). In fact, 3 participants (3.3%) scored this subscale as being perfect (18/18). However, the majority of participants (N=53) did have a score below 9, indicating that a rating of 3, "Completely", was rare. Six participants (6.6%) answered all of the questions with a response of 0, "Not at All". However, this subscale (reinforcement of needs) had the lowest frequency of a total score of "0" out of the four scales reviewed (Table 4.13; Table 4.16; Table 4.19) reinforcing the results of the descriptive statistics and accounting for why it received the highest results of the four.

Table 4.9 Reinforcement of Needs Individual Questions

#	Question
Q1	I get important needs of mine met because I am part of this community.
Q2	Community members and I value the same things.
Q3	This community has been successful in getting the needs of its members met.
Q4	Being a member of this community makes me feel good.
Q5	When I have a problem, I can talk about it with members of this community.
Q6	People in this community have similar needs, priorities, and goals.

Table 4.10 Reinforcement of Needs Score Frequencies

		Frequency	Percent
Total Score	0	6	6.6
	1	2	2.2
	2	3	3.3
	3	2	2.2
	4	4	4.4
	5	11	12.1
	6	11	12.1
	7	9	9.9
	8	5	5.5
	9	7	7.7
	10	4	4.4
	11	6	6.6
	12	13	14.3
	13	3	3.3
	14	2	2.2
	18	3	3.3
Total		91	100.0

The descriptive statistics of the individual questions were fairly consistent across the different measures (mean, median, mode) (Table 4.11). There was no standout question that scored much higher or much lower than the rest. The highest mean came from Question 6 (1.52), which asked participants to rate whether people in this community have similar needs, priorities, and goals. The lowest mean (.92) came from Question 1, which asked participants to rate whether they got their own important needs met by being a part of the community. Question 5, which asks: “When I have a problem, I can talk about it with members of this community”, had the second lowest mean in this set, but was also the only question that had a mode of “0”.

Table 4.11 Reinforcement of Needs Individual Questions Descriptive Statistics

	Q1	Q2	Q3	Q4	Q5	Q6
Mean	.92	1.24	1.46	1.48	1.07	1.52
Median	1.00	1.00	2.00	2.00	1.00	2.00
Mode	1	1	2	2	0[a]	2
Std. Deviation	.833	.735	.821	.899	.964	.848

a. Multiple modes exist. The smallest value is shown

Membership

McMillan and Chavis (1986) defined membership as "the feeling of belonging or of sharing a sense of personal relatedness" (p. 9). The SCI-2 features six questions pertaining to Membership (Table 4.12) that were added together to create a total score for the subscale. This subscale had the lowest mean (5.32) amongst the four subscales and the participant score frequencies reflect this (Table 4.13), with 74 participants having a total score of 8 or below. In fact, over half of the participants (57.2%) had a score of 5 or lower. No participants scored this subscale perfectly with all answers of "Completely" (3) which would have provided a total score of 18.

Table 4.12 Membership Individual Questions

#	Question
Q7	I can trust people in this community.
Q8	I can recognize most of the members of this community.
Q9	Most community members know me.
Q10	This community has symbols and expressions of membership such as clothes, signs, art, architecture, logos, landmarks, and flags that people can recognize.
Q11	I put a lot of time and effort into being part of this community.
Q12	Being a member of this community is a part of my identity.

Table 4.13 Membership Score Frequencies

		Frequency	Percent
Total Score	0	7	7.7
	1	7	7.7
	2	6	6.6
	3	9	9.9
	4	13	14.3
	5	10	11.0
	6	9	9.9
	7	4	4.4
	8	9	9.9
	9	5	5.5
	10	4	4.4
	11	3	3.3
	12	2	2.2
	13	2	2.2
	14	1	1.1
Total		91	100.0

In looking at the specific questions, only question 7 and 10 had a median higher than 1.0 and a mode higher than 0 (Table 4.14), indicating that for most questions the most common answer was “Not at All”. However, question 7, which asked participants to rate whether they can trust people in this community, had a mean of 1.53 and a mode of 2 indicating that participant answers fell between “Somewhat” and “Mostly”. The lowest mean (.51) came from question 9, which asked students whether most community members know them. Most students indicated “Not at All” for this item. It should be noted that Question 9 is the lowest rated question in the entire SCI-2 survey.

Table 4.14 Membership Questions Descriptive Statistics

	Q7	Q8	Q9	Q10	Q11	Q12
Mean	1.53	.69	.51	1.36	.62	.62
Median	2.00	.00	.00	1.00	.00	.00
Mode	2	0	0	1	0	0
Std. Deviation	.874	.878	.794	1.091	.742	.727

Influence

McMillan and Chavis (1986) defined influence as "a sense of mattering, of making a difference to a group and of the group mattering to its members." (p. 9). The SCI-2 features six questions pertaining to Influence (Table 4.15) that were added together to create a total score for the subscale. This subscale was the second highest with a mean of 6.35 and a median of 6. This subscale had a mode of 5 (13.2%), with most values falling around this total. In fact, participant scores between 4 – 6 accounts for 34.1% of the total values (Table 4.16). Interestingly, however, when looking at the frequency of the total scores, Influence had a high number of participants (8.8%) rate all of their questions "Not at All" (which has a value of "0") for this subscale compared to Membership, which had a lower mean. Ultimately, these low rating surveys were offset by the increased frequencies in the middle.

Table 4.15 Influence Individual Questions

#	Question
Q13	Fitting into this community is important to me.
Q14	This community can influence other communities.
Q15	I care about what other community members think of me.
Q16	I have influence over what this community is like.
Q17	If there is a problem in this community, members can get it solved.
Q18	This community has good leaders.

Table 4.16 Influence Score Frequencies

		Frequency	Percent
Total Score	0	8	8.8
	1	2	2.2
	2	2	2.2
	3	7	7.7
	4	9	9.9
	5	12	13.2
	6	10	11.0
	7	7	7.7
	8	7	7.7
	9	7	7.7
	10	6	6.6
	11	7	7.7
	12	5	5.5
	13	1	1.1
	17	1	1.1
Total		91	100.0

In looking at the individual questions within the Influence subscale (Table 4.17), Question 18 has the highest mean (1.66), median (2.0) and mode (2) and was also the highest rated question out of the entire SCI-2 survey. Question 18 asked participants whether they felt that the community has good leaders. A median and mode of 2 indicated that participants feel that the University "Mostly" has good leaders. In contrast, the lowest mean (.55) for a question in the Influence subscale is Question 16, which asked participants whether they have influence over what the community is like. In addition to a low mean, this question has a median of 0 as well as a mode of 0 ("Not at All"), indicating that students strongly felt that they do not have influence in this area of their community.

Table 4.17 Influence Individual Questions Descriptive Statistics

	Q13	Q14	Q15	Q16	Q17	Q18
Mean	.74	1.23	.96	.55	1.22	1.66
Median	1.00	1.00	1.00	.00	1.00	2.00
Mode	0	1	1	0	1	2
Std. Deviation	.758	.776	.842	.764	.841	.897

Shared Emotional Connection

McMillan and Chavis (1986) defined Shared Emotional Connection as "the commitment and belief that members have shared and will share history, common places, time together, and similar experiences" (p. 9). The SCI-2 features six questions pertaining to Shared Emotional Connection (Table 4.18) that were added together to create a total score for the subscale. With a mean of 5.75, Shared Emotional Connection had the second lowest mean of the four subscales within the SCI-2. While the most common total for these six questions was "5", this subscale also had the highest number of respondents answer all six questions with "Not at All", resulting in a total score of "0" (N=11) (Table 4.19). The frequency table for this subscale provides insight into how this subscale can have the highest number of "0" scores, but not the lowest mean overall. It highlights the many different values, some high, some low, and many in the middle – demonstrating that participants had varying (perhaps polarizing) views of how this subscale's needs are met. This variation resulted in many of the low scores being countered by much higher scores, leaving the Reinforcement of Needs subscale mean to be in the middle of the four.

Table 4.18 Shared Emotional Connection Individual Questions

#	Question
Q19	It is very important to me to be a part of this community.
Q20	I am with other community members a lot and enjoy being with them.
Q21	I expect to be a part of this community for a long time.
Q22	Members of this community have shared important events together, such as holidays, celebrations, or disasters.
Q23	I feel hopeful about the future of this community.
Q24	Members of this community care about each other.

Table 4.19 Shared Emotional Connection Score Frequencies

		Frequency	Percent
Total Score	0	11	12.1
	1	2	2.2
	2	3	3.3
	3	9	9.9
	4	11	12.1
	5	14	15.4
	6	11	12.1
	7	4	4.4
	8	4	4.4
	9	2	2.2
	10	5	5.5
	11	6	6.6
	12	7	7.7
	15	2	2.2
Total		91	100.0

Question 23 has the highest mean, median, and mode of all the questions provided within this survey (Table 4.20). This question asked students whether they felt hopeful about the future of this community. Question 20 has the lowest mean for this subscale as well as the lowest mean for any question within the survey. This question asked whether students are with other community members a lot and whether they enjoy being with

them. Most questions within this subscale had a mode of "0", with both question 20 and 22 sharing a median of "0.00" as well. The high number of "Not at All" answers aligns with the previous results of the frequency totals. The individual questions help highlight which questions (particularly question 23) increased this subscale's standing amongst the four means despite the many 0-point answers.

Table 4.20 Shared Emotional Connection Individual Questions Descriptive Statistics

	Q19	Q20	Q21	Q22	Q23	Q24
Mean	1.02	.45	.84	.52	1.54	1.40
Median	1.00	.00	1.00	.00	2.00	1.00
Mode	0[a]	0	0	0	2	1
Std. Deviation	.894	.687	.910	.780	.946	.842

a. Multiple modes exist. The smallest value is shown

Phase II: Qualitative Results

The qualitative phase of this study sought to answer the second research question: What are the student perceptions of the services and/or aid a higher learning institution could provide to support its online graduate students' sense of community? The results of the participant interviews indicated that there were varying opinions as to what aided and services could have been provided, which could have been improved, and whether or not some services and support were needed. The resulting themes from these interviews were identified and explored. These themes were supported with thick, rich descriptions of the interviews and direct quotes from the participants. Further discussion of considerations and impacts of these results follow in the next chapter.

Interview Participants

Ten participants were selected for the qualitative phase of this study based on demographic information and SCI-2 total index scores. These participants were selected based on their interest in being interviewed (an option selected from the previous quantitative survey) and their demographic information of the participants. This study sought to represent different groups of students, including students from different age groups, genders, and programs of study (Table 4.21). Additionally, demographic information regarding student experiences with online courses, years enrolled in their current program, and whether or not students had visited the Northwest University's campus are presented below to help illustrate the sample's varied backgrounds with online education in general.

Table 4.21 Interview Participants' Demographic Information

	Frequency	Percent
Age Groups		
25 to 34 years	4	40.0
35 to 44 years	1	10.0
45 to 54 years	3	30.0
55 to 64 years	2	20.0
Gender		
Female	5	50.0
Male	5	50.0
Program of Study		
Doctoral Degree	5	50.0
Master's Degree	5	50.0
Years in Program		
1 year	2	20.0
2 years	5	50.0
4 years	1	10.0
5 or more	2	20.0
Visited Campus in Person		
No	3	30.0
Yes	7	70.0

While a variety of responses were sought to answer how important community was (the SCI-2 initial validating question), the students who ultimately agreed and followed through with the interview process all rated community as being "Somewhat Important" or higher (Table 4.22). The three students who rated community as "Not Very Important" (or lower) were contacted via email, but ultimately did not respond to a request to be interviewed. Nevertheless, although all students interviewed valued community, their perceptions of the total community index and subscales varied, which in turn provided different perceptions and interpretations of community within the interviews themselves.

Table 4. 22 Interview Participants' SCI-2 Validating Question Responses

	Frequency	Percent
1 (Prefer not to be a Part of this Community)	0	00.0
2 (Not Important at All)	0	00.0
3 (Not Very Important)	0	00.0
4 (Somewhat Important)	4	40.0
5 (Important)	5	50.0
6 (Very Important)	1	10.0
Total	10	100.0

For the interview participants, the mean values of the SCI-2 total index scale and subscales were higher than the values of the total survey participants (Table 4.23). However, there were patterns similar to the data in previous results. The order of means from the highest mean to lowest is in the same order as it is in the quantitative populations: reinforcement of needs (highest), influence, shared emotional connection, and membership (lowest).

Table 4. 23 Interview Participants' SCI-2 Scale Statistics

	Total Index	Reinforcement of Needs	Membership	Influence	Shared Emotional Connect.
Mean	33.50	10.10	7.50	8.00	7.90
Std. Deviation	14.175	4.332	4.143	3.162	4.433

Qualitative Coding Cycles

Two cycles of coding occurred within the qualitative data analysis phase. An additional, third cycle of coding occurring within the mixing phase utilizing both the quantitative and qualitative data. In the qualitative phase, first, an elemental method of coding was selected – specifically, structural coding, in order to identify all data related to services and aid. Once this cycle was complete, a second cycle of coding, specifically, a pattern method of coding allowed for identification of specific themes related to the larger services and aid data. Each of these cycles and the resulting data are reviewed within this section.

Outcome of Structural Coding

Structural coding was selected as the first cycle of coding in order to identify references specifically to services and aid within the transcripts and therefore collect data relevant to answering the second research question ("What are the student perceptions of the services and/or aid a higher learning institution could provide to support its online graduate students' sense of community?"). This first of cycle coding yielded 46 total references to services and aid within the ten participant transcripts. Each participant referenced services and aid at least 2 separate times during their interview (Table 4.24) with the highest number of references to services and aid being 9. Most students (N=3) made 5 references to services and aid. By collecting references to services and aid from

all of the participants through the structural coding process, the amount of text was reduced to allow for a second cycle of coding that would more deeply analyze this bank of answers.

Table 4. 24 Participants Services & Aid Reference Frequency

Participant Alias	Services & Aid Frequency
“Bob”	6
“Linda”	4
“Tina”	6
“Louise”	5
“Gene”	8
“Gayle”	3
“Phillip”	5
“Jimmy”	4
“Teddy”	6
“Gretchen”	2

Outcomes of Pattern Coding

The results of the first cycle of structured coding were analyzed in a second cycle of pattern coding. This entailed identifying sub-codes within the services and aid based on common patterns and themes. The resulting themes that resulted from this cycle of coding included: existing aid and services not offered remotely, new ideas for aid and services that could be provided, student cohort groupings, school memorabilia, institutional emails applicable to online students, counseling and advising services, and opinions that further student services and aid are not needed. A short description of each with the associated subscale is featured in Table 4.25.

Table 4. 25 Sub-Code Theme Descriptions

Theme & Description
Applicable Emails – Communications that students receive from the University and related organizations need to apply to the remote student.
Cohorts – Students not participating in a cohort reflect on the impact of being a part of such a system.
Counseling & Advising – Counseling and advising services to assist in both mental health and academic progress throughout the program of study. [a]
Existing Services & Aid – Services and aid currently offered by the University that do not have online access.
Ideas for Services & Aid – Ideas for services that would further create a sense of community for online graduate students.
Memorabilia – Items that would improve a sense of community for online graduate students.
Services & Aid Are Not Needed – Student answers that indicated that services and aid are not needed to improve a sense of community for online graduate students.

[a] While counseling and advising are existing services, so many participants reflected on state of these resources a separate theme was created to highlight these results.

Themes were established when two or more participants stated a need for the same service or aid (Table 4.26). While two students may not constitute a large representation overall, in proportion to the ten students interviewed for this study, two students addressing the same topic seemed to warrant mention within the results. Further analysis of each theme will be explored within this section with supporting quotes from the interviews.

Table 4.26 Participants Addressing Sub-Code Themes

Theme	Number of Participants Addressing Theme
Applicable Emails	5
Cohorts	3
Counseling & Advising	5
Existing Services & Aid	8
Ideas for Services & Aid	5
Memorabilia	2
Services & Aid Are Not Needed	6

Applicable Emails

Throughout the one-on-one interviews, in looking at how the University could improve a sense of community for its online graduate students, one of the most common concerns among the interviewed participants (both Master's students and Doctoral students) was the perceived misuse of the institutional email by the University, on-campus programs, and student organizations. In particular, students reported receiving too many emails regarding on-campus events that they, as an online student, could not participate in: "*As an online student, I'll get invited to events that are in [the Northwest University] that have no opportunity for me to connect or participate. And I've actually emailed people to follow up about that.*" This point was further iterated by students who were not only remote, but were in widely varying time zones due to their international locales:

> *Some of the organizations, and stuff, reach out to online students, but it doesn't apply. I'm in Germany right now. It's different for us. Some of the online students that are in [the state], or you know... but it just didn't apply to me in that sense.*

For some, the emails were more of an annoyance, but others found that receiving invitations to events that they could not attend made them feel less connected:

> *I'm just smiling because I was thinking my colleague and I did get all these emails together. We joke about all the stuff that they offer. You know, I'll say this: I wish they wouldn't send us the emails to hang out at the meetings they have with free food and stuff like that. And in all seriousness, that does actually make me feel less connected.*

However, while University emails proved to be a major theme within the interviews, participants were also open to sharing simple solutions to resolve this issue. Several of the interviewed participants recognized that the email problem has two potential resolutions: First, the University could separate fully online students in emails groups so that they would not receive emails for on campus events not pertaining to them: "*I would say that's the extent of it: just to invite us to things that we're actually able to participate in remotely."* Second, the University and related organizations could try to include different methods for online students to participate and connect:

> *I think that like it should be a pretty standard expectation: that if there's programming happening, it is accessible in some way shape or form. Even if it's like a recorded webinar - it's available in some shape or form for online students.*

Further, one participant was quick to note that emails from the smaller, more specific, EDTECH department were helpful. These emails targeted the online students, and tried for them to connect:

> *I do get invitations to like, "Oh somebody is defending [their] dissertation. You know, you can tune it in, or you can watch". You know, they do offer some things,*

but it's never anything but I've taken advantage of. I would say they do make some effort. They do make some effort to bring us in when there's something that we can actually tune in for.

This endeavor, on the part of the EDTECH department, paired with the student comments and ideas, could potentially provide a template for the University and its organizations to approach their emails and events in a more mindful manner.

Memorabilia

Although not as widely commented on as student emails, the theme of memorabilia was brought up twice, with participants highlighting how the act of sending school gear to the online student could potentially help establish a sense of community from the point of enrollment forward. One participant reflected on his own experience as an instructor and how the gift of memorabilia increased his community: "*One of the things that made a big difference to me is [that] right when I got hired they sent me a shirt. And it was a nice collared shirt with their [logo] embroidered on it and everything. I felt more like I was part of that... part of that community now from that."*

However, the role of the University versus the role of the EDTECH department itself varied between these two points of view. While respondents seemed to agree that the act of sending memorabilia should take place upon enrollment, one participant felt it could come from the University, while the other felt that it should come from the EDTECH department:

I think one way that like I probably would feel a little bit more connection is that if, like, when I was accepted I got, like... they shipped me like a T-shirt or like a

keychain or like something that might help like connect to the community a little bit. But, it was... like... I got an email. You're accepted.

Although this theme was not further explored within these interviews, the fact that two individuals brought this theme up unprompted (i.e. the concept of memorabilia was not brought up in the interview questions), demonstrates that there could potentially be a desire from the larger population to be recognized for their membership to the University, despite not being physically on campus. However, with only two students bringing this topic up within this initial study, it could also be sheer coincidence and not further represent the population. That said, one participant brought up an interesting point of how her membership to the Northwest University created a connection to her colleagues, a connection that could be increased should memorabilia be distributed:

I'm a football fan and so I've watched [the University's team] play before I started there. Some of my colleagues at school are [University] graduates so there's been a little peripheral. They found out about this program at [the University] and I've had - like I came into work the other day and someone put a [University] sticker on my desk.

Cohorts

The role of the department was a difficult concept to separate throughout the interview process. Indeed, the idea of a sense of community to the larger University, to many students, had to start at the department itself. In fact, one participant, a master's student, struggled to understand the relevance of this study, when – to her – more attention needed to be paid to the classroom and peers:

> *I'm enjoying the program and I like that you're doing some research about the community for online learning because that seems to be such a way that education is moving. To be able to offer things. But I really, really feel pretty strongly there's a value in knowing the people that you are learning with and knowing the people that are teaching you that shouldn't be overlooked and if there's ways that that can be incorporated into a truly, you know, online asynchronous program. I think that just would add a lot of strength to a program.*

With this in mind, it was not surprising that one of the themes that emerged, cohorts, directly related to the setup of the EDTECH department itself. This theme has been included within this research as the idea of cohorts in general could potentially be applied to the larger institution. This is further explored within the discussion. In terms of the participant interviews, currently, Master's students are not a part of a cohort system, while the Doctoral students are. The theme of cohorts emerged from interviews with Master's students and in one interview with a Doctoral student who shared the experiences of one of his colleagues (who is enrolled in the Master's program).

One Master's student explained her experience in a course that had six to seven students, noting that: "*It might have been my favorite course throughout the program, and I'm not sure if I enjoyed it because of the material that we were talking about - or if it was because the interactions were so rich, because we were such a small group of students.*" She further highlighted the impact that connecting with the students had on her course experience, "*We got to know each other, know what we were doing, how oh it was progressing and I felt like we really had a sense course that I don't think I've felt in any other courses.*" When further pressed to whether she would be interested in a cohort

system, she answered: "*You get to know some of the classmates, you know we all come from such different walks of life and with such diverse backgrounds that I think going through the cohort model - even if it took longer - I would be okay with, because then I would get to know some of them better*."

This was echoed by the doctoral student, who shared the frustrations of his colleague when asked if he felt community in the EDTECH department:

> *I have felt that in the Doctoral program, because it's a little bit more structured and we stick with a cohort. I have my colleague that I actually just spent probably 45 minutes a couple days ago talking off the ledge, right? The, 'I can't handle anymore. I'm so isolated and alone. I don't feel like have anybody to turn to on this whole thing. It's like they're talking public school principals and I don't… I'm not a public-school teacher and I don't know what they're talking about. I don't know how to keep up.' He feels that. I felt that in my Master's program - that was all online. Because it wasn't a stuck together cohort through the whole thing. But, I feel like I know everybody in my cohort in the doctoral cohort and I feel like it's made a really big difference.*

However, not all students wanted a cohort system for the Master's program as it could potentially eliminate the freedom and flexibility the program current has. One Master's student noted that while she appreciated sharing courses with some of the same students throughout the years, a cohort system would not be something she would like to have taken part of: "*If I had to be in a cohort, you know when my husband had surgery or I had pneumonia, I couldn't have had that flexibility to say, 'I can't take classes right*

now.'" This interviewee highlighted that there isn't a one-size-fits-all system for the department.

Existing Services

Existing services entails programs and aid that are currently available to students, but may not necessarily be available online. However, this theme also covers programs that are currently offered to online that students, that the participants were not aware of, or needed further direction about. As with many of the conversations throughout the interviews, this theme draws from services and aid offered at both the department level and the larger university. Participants were passionate about the services they would like included, with one student noting that all programs should be available for the online population:

> *I would imagine that the online student population of [the University] is growing. That would be my hunch. That means more dollars. That's an increasing revenue stream for the institution and it's like... I guess I'm talking in circles a little bit, but I guess I would expect pretty much all programming.*

This was repeated by another student, who introduced the idea that by providing ways to attend events, online students would be more likely to connect with one and other:

> *I remember being on the college campus and at night we would tend to have special speakers, group talks, and you know there were things to go do. You know, when you're off campus there aren't as much. So, given the opportunity to convene into something for a reason would give me a reason to you know email somebody in my cohort say 'Hey did you hear about this? Do you want to go?*

Other participants were more specific in their needs when asked what services the University could provide. One student contemplated the need for tutoring: "*Well, I would be curious to know… I haven't had to do this but if I needed tutoring in graduate level."* While another participant explained the importance of accessing the writing center – something this participant had access to as an undergraduate at the University:

> *It was at least helpful to have someone read over some papers before turning them in. So, if that was an online resource I think that would be incredibly helpful. It's hard to write a paper and get feedback after you've turned it in. You know, it would be nice to get that as you write*

Interestingly, even students who were close to finishing their program of study were interested in services. One participant, at the end of the master's program, looked at future alumni services and whether or not they were provided:

> *Maybe there's already something in place but I feel like some sort of an alumni group would be helpful in that... you know, learning is a lifelong journey and those of us that have graduated will have already had that experience at [the University]. So, we're already on the same page, you know in regard to what we've been taught and so I feel like they could... if there isn't one in place, they could do a great job promoting that community by providing a space for alumni to be able to collaborate and work with each other to promote growth and knowledge amongst everyone.*

It should be noted that alumni services are indeed available for online students, which is why this topic is included within the existing services theme. Interestingly, the alumni page highlights several opportunities for students to connect while at a distance, creating,

perhaps, a precedent or example for other service departments. Communication for these services may need to be a greater focus so that students are aware. Further, this participant noted his lack of knowledge about graduation – another area that could be targeted to help online students feel included:

> *I haven't been sent anything yet about, like, livestream for graduation. Maybe that's coming. I have no idea. I feel like maybe helping like the online students who are graduating - also providing a similar alternative resource to them as they prepare for you know finishing everything up.*

At the department level, several participants referenced the learning management system within their interview. Specifically, participants spoke positively about the homepage, as being a source of information and connection:

> *So, when we log into [learning management system] there's that there's that place right there in the middle on the home page where many people post announcements about things happening in the EDTECH world and opportunities for people - whether it be, like, opportunities to present, opportunities to be hired. And, so, that's fairly active. I would say at least a few times a month there's some activity going on there.*

Social media was also referenced within a participant interview; however, this student was not aware of the department (nor University's) pages:

> *I don't know. Like maybe they do have social media stuff, but I'm just not aware of. Facebook and Twitter and that type of a thing - that might help me feel a little bit of included.*

Despite this, the result that the student would feel more included with these offerings indicates that both the University and EDTECH department should most likely continue this social media effort. Another student actively using social media (Google Plus) within her online work noted how the Doctoral cohort lacked participation: "*There really was a push initially with our cohort and of course - nobody used it.*" While a solution to increase participation isn't offered by this participant, she did highlight how effective social media (in particular, Google Plus) could be in creating community: "*I've been teaching at an online school and we use it all the time and it's so effective that... there are so many tools that could be used to just get even a few minutes of that face-to-face.*"

Beyond the larger department level, several participants highlighted how the instructors themselves could or already were providing services that assisted in building a sense of community directly within the classes. One student noted how a professor's video helped him feel more connected to the campus: *"[The professor] walked the campus and then videoed some stuff and put it in narrating tour so that we who have never been there kind of felt like, hey, well we have some idea of what the campus looks like. I didn't know what to expect watching the video, but afterward I did feel like a little bit more information about the place. I felt a little more connected there.*"

A different participant felt that current opportunities to connect could be improved. This participant highlighted the importance of language and explaining the purpose of an event: "*One of professors held happy hours, but it was him talking the whole time. It was a 16-minute happy hour. And I think, that phrase... when I hear that phrase, I think of interacting and talking. With him - what it was, was a synchronous lecture essentially."* The participant further explored how the idea itself, if employed

correctly, could help community: "*I think having an optional happy hour... or a social hour, or whatever you want to call it - that I think would be... I would find it really helpful for the community building aspect.*"

These two examples demonstrated how small actions had large impacts on the community of students. Further, these examples demonstrated that (once again) there was not a one-size-fits-all model. This point was highlighted by two other participants, the first who noted that she was self-sufficient in getting the help she needed:

> *I don't know if people use more of those resources, but I never had that feeling like man if I was on campus everything would be so much better. I feel like tools we have or any type of online education, I feel like it's just a matter of finding the tools and I felt like I had everything I needed.*

A second participant noted that while a team of instructors could help streamline the effort on community, she still held an appreciation for the work that was being done at the time of the study – even if it did not help her specifically:

> *My only thing is I think a team of instructors working on that sense of community. But I've also hopefully been clear. I feel like they've made that effort and it just maybe didn't work for me and I thought maybe approaching it a little differently might help.*

Counseling & Advising

Under the umbrella of existing services is the theme of student counselling and advising. Due to the prevalence of these topics within our interviews, a separate theme was created to address these needs. However, the definition of these services varied

between the participants. The three topics discussed included traditional mental health counseling, class advisement, and Doctoral program advising.

The first service, mental health counseling, is currently available at the University for on-campus students. There is not an online option at this time. The absence of this online component was noted within two interviews: "*I think that the university has a lot of on-campus things that are open to students. You know, whether it's the counseling center which, you know, that's something the on-campus students can access that the online students can't.*" Additionally, one participant questioned how student fees are used for programs not available online: "*The counseling services department, for example, they only offer supports for students on campus and it makes me curious, like, how much if any of my tuition goes to funding those things?*" Students fees for the EDTECH department are not used for on-campus services. However, this may not be the case for all online programs – therefore, the student raises an important point about student access to services paid for.

Both class advising and individual advising for student dissertations currently exist for online students enrolled within the department. Master's students receive program/class advising while Doctoral students, who are on a pre-planned track, have annual check-ins and dissertation advisement. Students in both programs expressed concerns about the level of support that they needed. First, a student in the Doctoral program highlighted issues of scheduling:

> *I guess really the only example I can think of is I was asked to set up a check-in about my course of study. But then the person never set up a time after I sent them the time. And when I followed up, they still didn't set up a time. And then I*

followed up a third time, and they were out of town. That was like kind of a withdrawal from the community building account, if you will.

Meanwhile, a soon-to-be graduating Master's student expressed similar concerns over not having met their program advisor throughout their studies:

So, I guess one thing I'll throw out there, because it's kind of always interested me over my five years is the advisor position at [the University]. I'm not sure why we have one. I never heard from the person in five years. You know, if that was really an advisor person. Now it may be that there's only one and may answer for you know hundreds of people and you're not going to reach out to all of them you know. But, not once in five years that you would they write and say, 'Well how is your program? Don't need anything from me?' You know? I'm at the graduate level. I should be able to pick my courses out and I really shouldn't need [help]... but… So, the person I went to when I had questions was [admissions advisor].

Another Doctoral student expressed the need to meet her program advisor sooner and develop a relationship that would assist her in the final phases of the program:

Maybe connecting with [your dissertation advisor] a little sooner. Almost like having that sort of partnership develop. See, I never had a class with [professor name redacted]. All of a sudden: 'Sure, here's your person!'

Similar to the results of the other themes, students' needs varied, demonstrating the difficult balance required to satisfy the group as a whole or majority. For example, while most students expressed a need for additional support from counseling and advisement, one Doctoral student expressed that he did not necessarily need any course advisement, and instead only needed the current annual check-in:

> *And I know that I was getting emails about you know you're there is where was one... the registration appointment! And talk to somebody. And it's like, 'No, I already know what classes I'm going to take. It's already in my plan.' So... I do appreciate that we do kind of... I think it's twice a year we do the kind of annual review thing just to make sure everything is on track and that's really helpful.*

This example highlights the importance of communicating and adapting to the needs to the individual. Much as in the classroom, different students will have different needs to meet.

Ideas for Services

While the theme of existing services looks at current programs and aid that can be adapted to the online setting, a separate theme was created for new, innovative, items that could be developed. Students within the EDTECH department are regularly working with the latest technology, allowing for many of the participants in the interviews to directly apply their knowledge and experience. The ideas for services mostly centered around connecting with others – both within the department and outside it. One participant highlighted the value in collecting information into a monthly department newsletter:

> *I think, in particular maybe like a newsletter or like a 'State of the Department'. And I think breaking that down by departments, so, like I'm not interested in what other departments are doing in their online programs, but I am interested in what EdD students are doing. So, I wonder if... like, having a newsletter that spotlights different students and different activities.*

The idea of connecting with students within the EDTECH department was further echoed by another interview participant, who felt there could be value in meeting others within the department for a short, optional, on-campus, in-person session:

> *I don't know if you could make an optional on campus visit, like maybe a…. like you mentioned the cohort group. If there was a cohort going through and we had, you know, a one week on campus maybe for like an introductory course or meet your professors - because there's - it's hard to reach out even to professors because [they are] a picture on my screen. I mean I don't even know what their voice sounds like. So, unless... That's the piece I think helps build that sense of community. But, again, you know when you've got people over the U.S. like for me that's like a $700 plane ticket.*

Indeed, all students might not be able to participate in such a meeting. However, in looking at on-campus visits, the idea of using virtual reality as a way for students to "be on campus" while studying remotely was also discussed:

> *I'm gonna get on the VR train again and say that if there are virtual points – Say for example, if we get like posts maybe on top of like posts or a pole where it could be a virtual standing point where you could log into that place and then look around. You could be there and look around and then have a sense of being there.*

While none of these options offered a simple solution to building a sense of community, they did start a dialogue as to what areas could be supplemented to increase greater connection.

Many ideas were shared for how students could connect with their peers. Participants highlighted how technology could be used to counter the distance, and allow students to connect on a different medium. The idea of a happy hour (discussed in existing services) was again brought up:

> *I worked for the company right now and we do... every month or two we do like a happy hour. Yeah, and you bring up a beverage like right now I'm drinking a coffee because it's not nighttime, right? If we did a happy hour I would, you know depending on your time zone, you bring a beverage that's feels right.*

This participant further explored how students could complete an activity, in this case – a movie, together remotely. He provided an example of how he and his coworkers connected while working remotely:

> *Last night we actually had a movie night using an online service called Rabbit and it allows you to play a movie for up to 25 people and it's virtual so it's like you and I could both watching this movie on the screen, but I would see you in the corner and we could chat. You can... there's an opportunity to respond to the movies -so there's like a laughing button kind of like how Facebook has responses, but they pop up on the screen. So, during a really funny part of the movie you can click the laugh button and it shows it. It allows you to engage with each other.*

Gathering ideas and experiences like this can help develop programming for online students that may have not been considered before. Participants used their knowledge of educational technology to present innovative means of coming together:

> *I think that having a sponsored venue to be able to pull people together for a common purpose and then you know add some additional socialization into that construct. There's a 3-D virtual reality program called AltSpace and I think that would be kind of a neat thing to use the VR platform to bring people together from a variety of different departments to maybe say come a witness speaker. So, you're there for common venue but then to be able to separate and talk to other people in that space.*

In addition to connecting with peers, participants highlighted the potential for connecting with other students at the University and beyond. First, one participant suggested the use of webcasting for events to allow online students to attend them remotely. This solution directly responds to the earlier requests for extracurricular, nonacademic, programming access discussed within the existing services section:

> *I know at certain professional sporting events there are network cameras that have the 360 and you feel like you're sitting in a seat. So, providing those types of avenues. Even like a dedicated Webcam to an event or a sporting center where you could log in and watch.*

Additionally, a participant explored the value of connecting with other online students outside of the EDTECH department in a common learning management system:

> *I think there needs to be one common place online students can go to interact, you know? So, I don't know if it's one LMS site, or if it's a, you know, discussion board somewhere that kind of connects online students within different programs to each other.*

Further, a participant explored the idea of online students (specifically, educators) from other institutions being able to connect:

> *My interaction with other students has not necessarily been with students but rather with other educators which I guess we're all students in a sense. But, yeah being able to connect with them in other places like Facebook groups for teachers and community forums that are set up by other institutions.*

The potential to expand and connect with students outside the EDTECH program, and even University boundaries, establishes a more collaborative, cross-departmental, approach that would allow for the sharing of ideas, experiences, and knowledge. However, while these participants discussed their ideas for connecting and making services and aid more available – other participants felt that these were not necessarily needed.

Services & Aid Are Not Needed

Some participants indicated that additional services and aid, as well as a developing a greater sense of community, was not necessarily needed within the program as it stands. These opinions helped establish a theme of "not needed" within the qualitative results. However, the reasoning for these opinions varied widely amongst participants. For example, two participants indicated that their age was a sole factor for not needing community: "*I'm 58 years old - that's not important to me.*" While a couple other participants referenced their duties at work and home as being a source of community, making this unnecessary within the University: "*I mean when you're, you know a graduate student, and you're already kind of in your career and you've probably got a family et cetera. There's not a whole lot that you want extra.*" and: "*When you get*

into graduate level work and everybody has a lot of people have family, spouses, or children or whatever - they have full time employment. So, you aren't looking as much for stuff to do on the weekend." This participant further explained, that in his opinion, there is a difference in the community needs between undergraduate students and graduate students: "*You know, it's interesting. I'm so busy. Especially when you get into graduate level stuff. Everybody has a life. It's not like you're doing undergrad work and everybody's life was the college.*"

In addition to personal factors, one participant felt that the online program was there to offer an end to a means:

> *I want to take the class I wanted to get. You know? I want to move on to the next class and it isn't about establishing relationships. It's about get the course done and move on. So yeah. Yeah, I think there's something that that the university - especially now maybe at an undergrad degree - but I would think at a Master's degree, you know, where even at the Doctorate the student is probably not seeking relationships and community through an online course.*

This was further explored by another participant who noted that forcing community building events or required services could impact students negatively: "*I think it goes back to I keep saying: availability. And so, I feel like they're certainly not intruding on me. They're not making doing community more work for students which I might resent, I suppose.*" This variety in answers within this theme made it difficult to pinpoint why some students may feel this way. When reviewing participant employment status (Table 4.37) to see if it played a role (as some students referenced their career as being time consuming) in student desire for services and aid, a consistent outcome was

not present. Because of the variety of answers within this section, paired with the results of the previous themes, the result establishes a precedent that individual students have individual needs that should be considered. However, it should be noted that each of the participants coded as "services and aid are not needed" within this section were additionally coded as needing/discussing an aid or service at some point within their interview – making this theme somewhat indecisive.

Table 4.27 Interview Participants' Employment Information

	Frequency	Percent
Employment Status		
Full Time	8	80.0
Part Time	2	20.0

Phase III: Mixing the Results

The third and final phase of this study sought to answer the third research question: "In what way do the themes from the semi-structured interviews inform the overall quantitative results from the SCI-2 survey?" To answer this question, the qualitative themes that emerged from the semi-structured interviews, as well as the content of the interviews, were reviewed for connections to the quantitative SCI-2 results (both subscales and total index). Bringing together these sets of data allows for proper mixing and further information pertaining to how these two measures relate.

The mixing of these results occurred in two parts: First, connections were sought between the interview participants' SCI-2 total index scores and associated themes from their interviews. This data was analyzed and compared to seek whether and how different groups informed the overall results. In the second part, the quantitative means of the SCI-2 subscales were connected directly to the qualitative interview themes in order to understand if and how the two sets of data relate. These two processes of analysis

allowed for a deeper investigation of whether and how the qualitative and quantitative results might mix to inform one another.

SCI-2 Total Index and Interview Themes

The total index – which scores the participant's sense of community overall – was reviewed for each participant in order to understand how these scores related to the student interviews. The interview participants represented a variety of total index scores (Table 4.28), with four students representing a lower index score (23 or below), two students representing a higher index score (48-72) and four students representing a mid-range index score (24 – 47). The SCI-2 has a total index score range of 0 – 72.

Table 4.28 Interview Participant's Total Index Frequencies

		Frequency
Total Index Score	12.00	1
	18.00	1
	22.00	1
	23.00	1
	32.00	1
	37.00	1
	44.00	2
	48.00	1
	54.00	1
	Total	10

First, the four low index score participants were reviewed to see how their total index related to their interview themes. Interestingly, despite scoring their overall sense of community as low, three of the four participants had an interview statement coded for "services not needed" within their interviews. However, as noted within the qualitative results, this theme is not necessarily a catch-all as all three of these students also recommended many other potential services in other areas of their interview – indicating

their desire to “improve services and aid” (Table 4.29). The results for these participants are not consistent.

Table 4.29 Interview Themes and Related SCI-2 Subscales

SCI-2 Participants	Qualitative Themes Coded One Participant	Qualitative Themes Coded for Two + Participants
Low Index Score Participants (N=4)	Cohorts Memorabilia	Applicable Emails Counseling & Advising Existing Services & Aid Ideas for Services & Aid Services & Aid Are Not Needed
Mid Index Score Participants (N=4)	Counseling & Advising	Applicable Emails Existing Services & Aid Ideas for Services & Aid Services & Aid Are Not Needed
High Index Score Participants (N=2)	Applicable Emails Counseling & Advising Ideas for Services & Aid Memorabilia Services & Aid Are Not Needed	Cohorts Existing Services & Aid

This lack of consistency is also true amongst students with high index scores. While one participant was coded in the “services and aid are not needed” theme, again, this student was also coded in the other themes, suggesting areas of improvement for services and aid (Table 4.29). The other participant that scored high in their index was an on-campus employee and Northwest University undergrad who was happy with the University, and therefore scored it high in her SCI-2, but this participant was concerned that had she not been on campus that her accessibility to services would be limited. Further, this student was not satisfied with her interaction with peers in an online program versus in her on-campus experiences. Again, the SCI-2 total index did not necessarily relate to one particular qualitative theme.

Four students represented the mid-range of the SCI-2 total index and five specific themes were mentioned amongst these participants. Once again, there was not a single theme that was agreed upon by all four of these students. However, the mid-range participants did have themes excluded (as they were not brought up) from their group, including memorabilia and cohorts. Like the two other groups, students in the mid-range had two or more participants state that services are not needed, but, again – reported ideas for services at some point in their interview. This inconsistency may indicate an initial reservation from the participants to suggest ideas. However, as comfort increased within the interviews students might have felt inclined to share more. Similarly, some participants might have felt apprehensive about how much they shared (in terms of services and aid) and attempted to rectify their concerns by suggesting that services and aid may not be needed.

In looking at patterns between the SCI-2 total index scores and interview themes, the only theme that was mentioned by two or more students across all SCI-2 scores was the mention of existing services. This could indicate the importance of providing (or at least attempting to provide) equal access to all on-campus services to online students as they appear to be well aware of what they have and don't have access to. Beyond existing services, any common patterns amongst mentioned themes were difficult to draw and not always consistent. Because of this, selecting students to interview based on their SCI-2 index scores alone may not heed to most consistent results and may not further inform either set of data. Picking only students who score low, mid, or high on their SCI-2 total index may not yield the specific information one would guess. Instead, having a wide representation of students with carrying SCI-2 scores allows for different ideas and areas

of improvement to be addressed. Also, attention should be paid to themes that arise in all SCI-2 score ranges, as these are likely the most important areas of improvement. Of course, the limited sample of this study may have influenced these results.

SCI-2 Subscales and Interview Themes

Despite the results of these individual students, when looking at specific subscales in the quantitative data with all participants included, patterns do begin to emerge and the qualitative interview themes begin to shape a roadmap of how to address these scores. For example, the interview content of each theme connected in some manner to one SCI-2 subscale or more (Table 4.30). In order to further explore how the interview specifically informs the results of the SCI-2 survey, each subscale is reviewed individually, allowing for the comparison of the mean score of each subscale to the interview results (Table 4.31).

Table 4.30 Interview Themes & Related SCI-2 Subscales

Qualitative Theme	Quantitative SCI-2 Subscale
Applicable Emails	Membership; Influence
Cohorts	Membership; Shared Emotional Connection
Counseling & Advising	Reinforcement of Needs
Existing Services & Aid	Reinforcement of Needs; Influence
Ideas for Services & Aid	Reinforcement of Needs; Influence; Shared Emotional Connection
Memorabilia	Membership
Services & Aid Are Not Needed	Reinforcement of Needs; Influence

Table 4.31 SCI-2 & Interview Themes Mixed Results

Subscale	Quantitative Mean	Minimum	Maximum	Related Qualitative Theme(s)
Reinforcement of Needs	7.69	0.00	18.00	Counseling & Advising Existing Services & Aid Ideas for Services & Aid Services & Aid Are Not Needed
Membership	5.32	0.00	18.00	Applicable Emails Cohorts Memorabilia
Influence	6.35	0.00	18.00	Applicable Emails Existing Services & Aid Ideas for Services & Aid Services & Aid Are Not Needed
Shared Emotional Connection	5.75	0.00	18.00	Cohorts Ideas for Services & Aid

Reinforcement of Needs

The reinforcement of needs subscale boasted the highest mean of the four subscales (N=7.69), indicating that this portion of the sense of community was being met the most. This mean is supported by the interview results, with many participants indicating that they felt that services and aid were not needed. The definition of reinforcement of needs states: “This is the feeling that members’ needs will be met by the resources received through their membership in the group” (McMillan & Chavis, 1986, p. 9). By indicating that services are not needed, many of the interviewed students demonstrated that their needs were already being met through their membership (enrollment) within their program of study at the University. With many students feeling that their needs pertaining to services and aid have been met, it makes sense that they would answer these questions in a satisfied manner as these results compliment both the definition of reinforcement of needs and the highest mean score (N=7.69).

However, it should be noted that several other themes fell into this subscale, including: counseling and advising, existing services and aid, and ideas for services and aid. These additional student needs also support the results of the survey, for while reinforcement of needs held the highest mean out of the four subscales (N=7.69), it was not necessarily a high score. This fact reflects a need for improvement that is discussed and supported within the participant interviews. By addressing these student perceptions, reinforcement of needs can be further improved, while also improving the student's overall sense of community. These mixed results indicate that the University should continue to offer current services and aid (maintaining the high mean in the quantitative results) while possibly heeding the concerns and advice offered within the qualitative interviews.

Membership

In contrast to the reinforcement of needs, membership was the lowest scoring subscale (N=5.32) within the survey with the highest prevalence of participants selecting "Not at All" for all questions (N=7.7%). Again, the interview results supported this outcome. Membership is defined as "the feeling of belonging or of sharing a sense of personal relatedness" (McMillan & Chavis, 1986, p. 9). A large number of the interview participants complained about receiving emails targeting on-campus students – an action that could lower their feeling of belonging and relatedness as seen in membership. After all, these emails serve as a reminder that they are a different subset of students. A small adjustment to how these emails are distributed could potentially have a large impact within this survey area.

In addition to unwanted emails, the interview participants also sought ways in which they could share a sense of belonging and relatedness through shared school memorabilia. While participants may not connect with one another physically, the memorabilia could provide a way in which students can connect to others in their own region. The memorabilia can create a shared membership for graduates who may not otherwise recognize their connection. Additionally, some students indicated a desire for a cohort system in order to connect to their peers – actively seeking a way to relate personally to others and find a group in which they belong. While not all students may want to be a part of a cohort system, having such an option could potentially improve membership amongst online students by creating a forum for personal relatedness.

Overall, the qualitative interviews provided insight and potential action items that could improve the low mean of the membership subscale (N=5.32). This mixing of the data again provides consistent results in both the quantitative and qualitative data. Fixing the issue of unwanted emails, one of the top concerns amongst interviewed students, could potentially alleviate the concerns in this subscale and provide an increase in both the subscale mean and the total index value of sense of community.

Influence

Interestingly, influence was represented within the participant interviews, but the participants themselves broke into two different camps: one group of participants shared ideas to connect members of the community and provided ways in which the University could support them. The second group of students communicated that they did not necessarily need further support from the University to feel a greater sense of influence. The second group's results may account for influence being the second highest mean

(N=6.35) amongst the group as students were more confident in their role as an online student at the Northwest University. Despite their differing perspectives, these groups of participants still come together to represent the larger idea of influence: the sense of the individual mattering, the group mattering, and the ability to make a difference within the group, which aligns with McMillan and Chavis' (1986) definition of influence.

While influence aligns with the results of the SCI-2 within this specific study, it does appear to be the least informing. This is because influence focuses on the role of the member as opposed to the responsibility of the providing group. This study focused more on how the University could help the student, not what the students could do themselves to improve services and aid. Despite this, influence was regularly reflected in the students' desire to connect with one and other and their willingness to provide ideas to make this a reality. One participant recognized how his ideas could make such a difference at the department level, noting: "*I should probably share this feedback to that department.*" This comfort to share such feedback reflect a level of influence at the department level, aligns with the SCI-2 survey questions such as, "If there is a problem in this community, members can get it solved".

These qualitative results reveal that a degree of comfort that exists at the department level which should be sought at the University level as well. Mixing this finding with the quantitative survey – specifically, the individual question results – provides further insight into how to specifically target the area of influence. Question 16 of the SCI-2 asks students whether they: "have influence over what this community is like". This question produced the lowest mean of the six (N=.55). By focusing on giving online students a voice within the larger community, the University could not only

potentially improve the overall mean (N=6.35) of this subscale (and subsequently, the SCI-2 total index), but could improve influence on both a micro ("I have influence over what this community is like") and macro ("This community can influence other communities") level overall.

Shared Emotional Connection

Shared emotional connection had the second to lowest mean (N=5.75) of the four subscales and was represented within the semi-structured interviews in the themes of cohorts and ideas for services. The results of the participant interviews do inform the quantitative data related to shared emotional connection in the participant's desire to connect with one and other and create venues to further promote this. By establishing methods and venues in which to connect virtually, the requirements of a shared emotional connection (e.g. shared history, common places, time together, and experiences) can be met (McMillan & Chavis, 1986). The absence of some of these opportunities likely accounts for the lower mean represented within the quantitative results.

First, interview participants discussed the benefits of a cohort system – which would naturally allow for students to have time and shared experiences together as they work through their program of study. A cohort system could address the Question 20 from the shared emotional connection subscale: "I am with other community members a lot and enjoy being with them." This question had the lowest mean (N=4.5) amongst the subscale questions, which makes sense due to the remote nature of online education. However, a cohort system could potentially allow Master's students who desire more interaction to have it, potentially improving this mean.

Doctoral students, who are already in a cohort model, added ideas for how the larger EDTECH program could meet within common virtual spaces, while participants in both programs further expressed methods in which to connect to students in other departments and other Universities in virtual common spaces and/or at virtual events. These participants identified a need for shared connections and time with peers, students, and professionals both synchronously and asynchronously. This qualitative content further supports the quantitative results. Specifically, it addresses Question 21 from the SCI-2 shared emotional connection subscale which asks whether: "members of this community have shared important events together, such as holidays, celebrations, or disasters"? By creating events and spaces for virtual students to connect outside the classroom online students will have a greater opportunity to connect in such a manner. This subscale is one that could be addressed at both the micro (department) and macro (university/collegiate network) level – however, both levels could potentially impact student satisfaction within this area (as well as in the SCI-2 overall).

Chapter Summary

This chapter reviewed the results of the quantitative SCI-2 survey, the qualitative semi-structured interviews, and the mixing of these methodologies. Descriptive statistics were presented within the quantitative phase, while the qualitative phase examined common themes that emerged within the semi-structured interviews. Lastly, the mixing phase sought to bring the two sets of data together. Three research questions were addressed within this section, with the discussion of the conclusions and implications of the research to follow in the next chapter.

CHAPTER FIVE: DISCUSSION AND CONCLUSIONS

Introduction

For a higher learning institution, the ability to expand services beyond online classrooms and to provide a student-centered approach to membership within the broader University is relatively unexplored, but is a phenomenon that should be taken into consideration. The purpose of this mixed methods study was to investigate the sense of community that online graduate students experience in their higher learning institution. In this chapter, the results of this study are discussed in further detail, connecting these results to previous literature pertaining to online sense of community. In doing so, it becomes possible to explore the implications of students' sense of community toward the providing institution, and may also be possible to suggest steps that may be taken to more strongly support student needs, institutional capabilities, and learning of the highest quality.

Discussion of Findings

Research Question One

The first research question asked: How do online graduate students perceive their overall sense of community with a higher learning institution delivering their courses? The quantitative results of the SCI-2 total index, which included all questions within the survey, had a mean of 25.12. The total index had a range of 0 – 72 and a midpoint of 36. The mean (N=25.12) indicates that students had a lower sense of community to the providing institution (Northwest University) delivering their courses. Further, the four

subscales of the SCI-2 (reinforcement of needs, influence, membership, and shared emotional connection) revealed that "reinforcement of needs" had the highest mean (N=7.69) while "membership" had the lowest mean (N=5.32) amongst participants creating a mean range of 5.32 – 7.69.

The SCI-2 currently does not have quartiles in which to rate the total index or subscales, therefore, for this study the interpretation of the scores being low is based on the highest and lowest possible scores available. In an effort to better understand the results obtained within this study, the total index has been broken into four quartiles to represent four possible results: Very Low, Somewhat Low, Mostly High, and Very High (Table 5.1). The range between the possible total scores 0 and 72 was divided by 4 allowing for four equal quartiles for the total index score. Creating four quartiles aligns with the SCI-2 instrument's design, which provided four answers (Not at All, Somewhat, Mostly, and Completely) for each question within the SCI-2 total index and related subscales. By establishing four even quartiles, we can estimate how students answered these questions and what this says about their sense of community.

In using this formula, we can see that both the mean (25.12) and median (23.00) of the participant's (N=91) total index score currently falls within the lower half of the "Somewhat Low" quartile. This indicates that the overall results of the survey were well below the midpoint of the possible score, and therefore, on average, participants felt a somewhat lower sense of community with the University overall.

Table 5.1 Total Index Quartiles

Quartile	Frequency	SCI-2 Score
Very Low	29	00.00 – 18.25
Somewhat Low	37	18.26 – 35.50
Mostly High	25	35.51 – 53.75
Very High	1	53.76 – 72.00

To better interpret and understand the scores of the subscales, quartiles were created for these sub scores as well (Table 5.2). Using these quartiles and the mean of each subscale, the reader can again see that participants felt community "somewhat low" in each area. This evidence aligns with the total index score and demonstrates that there was not necessarily one subscale that performed noticeably better than the others. As such, the data may communicate that while reinforcement of needs was the highest subscale – with a mean of 7.69 – and membership was the lowest with a mean of 5.32 – all four should be attended to in order to increase a sense of community among students overall. Based on the results of this study, there is no one subscale that necessarily needs greater attention than the others in order to improve online graduate student sense of community.

Table 5.2 SCI-2 Subscale Quartiles

Quartile	Frequency	SCI-2 Subscales Mean
Very Low	32	00.00 – 04.75
Somewhat Low	40	04.76 – 09.50
Mostly High	19	09.51 – 14.25
Very High	0	14.26 – 18.00

Overall, establishing these quartiles allows for a better understanding of which level the participants self-assess in terms of sense of community and where desirable growth could be achieved. Conducting such a survey in a higher learning institution both before and after focused changes are made may assist the institution in understanding

which services, aid, programs, or changes work to improve community and which do not. Further, scores could potentially be compared across institutions to allow for a collaborative approach to meeting the needs of asynchronous and/or remote learners. This study presents an initial look at a sense of community toward a specific learning institution among a unique population. As such, it is difficult to compare the results here to a hypothetical exemplar directly to better understand what the Northwest University is doing right and/or wrong. However, these results may offer a baseline for future research as discussed later within this chapter.

Research Question Two

The second research question asked: What are the student perceptions of the services and/or aid a higher learning institution could provide to support its online graduate students' sense of community? Students in this study perceived that there were several services and/or aid that could be provided by the University to support the online graduate enrollees. Some examples of these items include: cohort grouping, accessible memorabilia, additional counseling/advising, tutoring, an online writing center, and revising email delivery for more relevant/applicable messages. Many of the suggested services and aid within this study imply that supports could be easily adjusted or implemented to address the online student needs and offer additional opportunities for interaction. For example, the prominent suggestion for filtering out the fully-online students from mass emails pertaining to on-campus events. These actions of inclusion could potentially improve the online graduate student sense of community to the University overall.

Why would the University want to pursue this additional work? In surveying studies which address a sense of community at the course level, many benefits can be identified, such as retention rates and student endurance (Liu et al., 2007) and increased feelings of competence and wellbeing (Gray, 2004; Shackelford & Maxwell, 2012). Additionally, greater student interactions within a course are shown to improve student academic performance (Murray, Pérez, Geist, & Hedrick, 2013; Zimmerman, 2012). While this literature focuses on the online sense of community at the course-level, it would seem that taking steps to ensure that online students are supported by the broader University could align with literature that is already established pertaining to on-campus students (Cheng, 2004). Cheng (2004) found that a perceived a sense of community to the University influences student well-being, attitudes of education, and feelings of self-efficacy.

However, while many students described the services and aid they would like included, it should be recognized that some students felt that additional services were not needed or that increased, required interactions could make them resentful. While students referenced employment and family matters as keeping them too busy to join in additional community building, with all interview participants employed, it does not appear that employment would hinder the students from participating. This aligns with previous research showing that some online students simply want to be left alone (Drouin, 2008), perhaps choosing this online educational option with isolation prioritized. However, a deeper look into student personalities and their desire for community could provide greater insight into the individual needs of different groups of students.

With these varying needs in mind, should an increase in services or aid be provided - interaction opportunities should not be required, but instead considered as an open opportunity. Having an option of whether or not to connect allows for students to demonstrate self-efficacy and responsibility for their own sense of community. As noted by Rovai (2002c), there should be consideration of the separation between online students both physically and temporally within a course – not, of course, to limit the opportunity for interactions – or in the case of this study, the choice for further interaction outside the classroom setting.

Research Question Three

The final research question asked: In what way do the themes from the semi-structured interviews inform the overall quantitative results from the SCI-2 survey? The themes from the semi-structured interview informed the overall qualitative results by providing specific examples of services and aid that could be expanded to improve the participant's sense of community. Further, the themes from the semi-structured interview indicated that some participants found that services were not needed. However, it should be noted that no one student stated solely that services were not needed. Instead, students provided a variety of ideas, while suggesting that services may not be necessary. This could be a potential area of future research. Overall, the themes aligned with the sub-scale results of the quantitative survey, and allowed not only for a further understanding of the total index, but provided insight and specific examples for the SCI-2 subscales too.

In reviewing how the qualitative data informed the quantitative data, two SCI-2 subscales ("influence" and "reinforcement of needs") were found to be the most strongly supported by the qualitative themes. These subscales were not only represented by five

separate themes each, but were each also representative of the most addressed theme: existing aid and services (N=8). Because of the high prevalence of these subscales within the interview themes, should an institution wish to focus on either of these items from the SCI-2 results the questions used within this study may offer a good template of what to ask. However, reinforcement of needs may naturally be one of the higher scoring SCI-2 subscales. In a study looking at online learning community development, which also utilized the SCI-2, Brook and Oliver (2003) found in their initial survey that reinforcement of needs was one of the highest means of their participants, while membership was the lowest. These results are similar to the quantitative results of this study. Additional use of the SCI-2 in the online environment might reveal if this is a pattern in the online environment, or simply coincidence.

Indeed, membership had the lowest mean and was surprisingly also the least supported SCI-2 subscale by the qualitative data. While both memorabilia and cohorts were mentioned within the student interviews, they were addressed by the least number of students (N=2, N=3 respectively). The theme of applicable emails was more prevalent (N=5), but was still not one of the most common themes. With membership having the lowest quantitative mean, this is an area that should be addressed. The importance of membership derives from social identity theory, which states that a strong sense of membership can result in a strong emotional bond that is perceived to be felt amongst all group members (Cameron, 2004). Establishing such a bond amongst online students could positively influence learning and participation, creating positive outcomes in the classroom as well (Rovai, 2003). Based on the results of this study, additional interview questions more aligned to the subscale “membership” may help in identifying more

strong and specific services and aid that could contribute to the improvement of this subscale score.

Overall, conducting these interviews allowed the participants to reflect on their survey answers - with some participants questioning whether their survey accurately reflected their perceptions on community: *I hope I answered that appropriately among the survey. I'm trying to reflect back on how I tried to present that, because that's where I feel like I present the program negatively when I'm being honest.* With a topic as multi-faceted as community, student perceptions are more complicated than a Likert scale may be able to capture. Should a higher learning institution wish to use the SCI-2 survey with their students (whether on-campus or online), the researcher highly recommends that a mixed methods approach be used to provide further context and triangulate different types of data. However, it should be noted that a variety of students with varying SCI-2 total index scores should be sought in completing interviews as a single group (low, mid, or high SCI-2 total index) of participants may not be representative of the larger population, nor provide a complete picture of services and aid needed. Questions specific to the SCI-2 results may need to be developed to address specific areas of need (i.e. membership).

Implications

The findings of this study contribute to the larger collection of research pertaining to the evaluation and building of a sense of community for online students (Dickey, 2004; Garrison & Cleveland-Innes, 2005; Lou, Zhang, Qi, 2017; Rovai & Jordan, 2004; Shea, Li, & Pickett, 2006; Young & Bruce, 2011). By investigating the connection between the online student and their university, this research expands responsibility for online

students' well-being and sense of belonging beyond the instructor (Alonso, Manrique, Martinez, & Vines, 2015; Phirangee, Epp & Hewitt, 2016; Shea, Li, & Pickett, 2006), the classroom (Moore, 1993), and the college (Young & Bruce, 2011) to the larger institution. This expansion of responsibility allows for multi-levels of support to assist in the retention of the student and improve academic performance, much like the support offered to the on-campus student (Cheng, 2004). The potential for improvement in retention and academic performance, in addition to student satisfaction, can reflect well on the University. By improving online student sense of community, and potentially reducing the transactional distance experienced by online students (Moore, 1993), a University has the potential to be a premier learning institution for this demographic of students.

Much as in the classroom, developing opportunities for engagement at the larger University level will call for a student-centered approach (Lancaster & Topper, 2019; Shackelford & Maxwell, 2012). While participants within this study provided many ideas for services and methods of delivery, prior research on sense of community within the classroom can further provide blueprints for where to start in connecting the larger population. Approaches within the classroom that have demonstrated success in promoting online sense of community include: the use of discussion boards (Shin, 2003; Arslanyilmaz & Sullins, 2013; Rovai 2002c), opportunities for students to establish social presence within the online environment (Horzum, 2015; Richardson, Maeda, Lv, & Caskurlu, 2017; Stepich & Ertmer, 2003), active participation and support by the "instructor" or responsible party for each service (Beaudoin, 2002; Nash, 2005; Easton,

2003), and opportunities for students to interact with one and other (Moore, 1989; Drouin & Vartanian, 2010).

These classroom approaches could be applied within a larger learning management system utilized by students throughout the University, allowing students to not only connect with others in their program, but for cross-departmental sharing of knowledge and experiences. Utilizing Web 2.0 tools to create a fresh approach to providing content (Moreillon, 2015), and utilizing the service suggestions of the students themselves (i.e. the tool "Rabbit" as described by a participant in this study) could help an institution establish an environment that not only promotes community but allows online students to connect in ways not applicable to the classroom setting. Further, should new online services be established, the Community of Inquiry (COI) could also serve as a model for those unfamiliar with building a successful online community that promotes student online presence (Garrison, Anderson, & Archer, 1999).

Allowing students to connect and collaborate beyond their course could assist in improving social presence (Garrison, 2007; Rovai, 2002c). Higher levels of social presence have been shown to increase online student satisfaction (Horzum, 2015), cognitive presence (Gutiérrez-Santiuste, Rodríguez-Sabiote, & Gallego-Arrufat, 2015) and perceived learning (Richardson, Maeda, Lv, & Caskurlu, 2017), making social presence an item that should be addressed. Additionally, student engagement (Ouzts, 2006) and the elimination of feelings of isolation (Drouin & Vartanian, 2010; Lake, 1999) can result as students connect. The application of these approaches outside the online classroom and within an optional, student-driven community provided by the University (e.g. writing center, school wide learning management system, etc.) could also

create areas for new research expanding on previous literature. Even should no additional programs, services, or aid be added, it is important to consider the perceptions and wellbeing of our online student population. Therefore, employing the SCI-2 can at least give an overview of the state of community within this population.

Recommendations for Future Research

In reviewing the ways in which the interviews support, inform, and clarify the quantitative results, it is the recommendation of this researcher that should the SCI-2 be employed to measure an online sense of community that follow-up interviews occur to further explain the results and offer action steps for how to improve scores. Further, these interviews offer insight into what is being done well, which can be adapted by other departments and/or schools. Questions should be developed to inform each subscale, allowing the themes of the interviews to support the quantitative data and create action items that can be utilized.

Students from different departments and those who are in different programs of study (undergraduate, Masters', Doctorate) would be insightful. This study focused primarily on graduate students, but the experience of undergraduate students would also be valuable. Also, studying different educational departments with varying levels of support might prove to influence the SCI-2 scores and the student interpretation of community in the University overall. Lastly, looking more closely at student demographic information as it relates to student scores might provide greater insight. Further, initiating a personality test in conjunction with the SCI-2 may provide even more information about the needs to specific student groups.

A broader study of several universities could provide further insight into online students' sense of community to their providing institution overall. By researching several different universities across different geographic locations, further examples of services and aid that may be provided could be collected, analyzed, and compared. This effort could provide a broader examination of the state of online education in the United States – or beyond – and allow for a comprehensive look at best practices at the University level.

Lastly, this study provided several services and aid that could be potentially implemented into a University to support online students. Further research into the implementation of these services (whether they are newly added or already in place) could provide insight into the impact these individual items have on online student sense of community. Additionally, the impact these services have on transactional distance could also be reviewed. Research into these individual services, and the possible consequences, could potentially provide an inclusive list of best practices for online programs.

Limitations

While this study aimed to represent a variety of genders, races, and ages it is understood that generalizability may have been limited due to the sample. This study specifically targeted students enrolled in one online program (EDTECH) at one single university. Students enrolled in other college programs or those that attend different universities may have more diverse feeling towards community or experiences. Further, the qualitative interviews included an even more limited sample in both demographic

representation as well as SCI-2 scores. Those who valued community were more willing to participate in the interview process which again could have hindered generalizability.

Furthermore, the researcher recognizes that there was a potential for insider bias in that the researcher was enrolled as an online doctorate student within the EDTECH department as well as remotely attending the University being studied. As such, transparency was sought in the reporting of the methodology. Additionally, awareness of the researcher's position was crucial to ensure that results of the qualitative research synthesis were not hindered in any way. Several measures, discussed within the first and third chapters, were put into place to minimize bias within the results, including: a semi-structured interview protocol, cross-checking between data, member checking of the results, and bracketing of the insider's personal experiences during the interview. Additionally, the researcher selected interview participants that were not a part of her cohort or whom she had taken courses with previously.

Lastly, participant bias was a potential limitation within this study. As a fellow student, familiarity between the researcher and participant presented a double-edged sword. In one view, participants may have felt more comfortable, allowing for more candid answers (Seidman, 2013). However, participants may have also experienced participant bias, and could have been attempting to answer correctly or to "help" the researcher. During the interview process, many of the participants sought to learn more about the researcher with questions about the researcher's experience and role within the program. In order to maintain the validity of the interview, the researcher sought to keep all such questions outside the scope of the interview questions, moving such queries to the end of the conversation and then redacting this information to maintain privacy and

validity. While additional data could have arisen from these conversations, the lack of bracketing and potential for bias hindered the reliability of these conversations. The consistent nature of these questions (i.e. How did you get your advisor to agree to advise you? Who can I contact in the department for help? How does the dissertation process work? etc.) raises the potential limitation that students sought to help the researcher in hopes that the researcher would, in turn, help them. However, it should be noted that these questions arose from many participants, both those who sought community and those who felt it was not needed. These repeated occurrences illustrate the need for community, services, and aid as a measure of support as discussed within this paper.

Conclusion

The findings of this study demonstrate that online students within the EDTECH program felt somewhat connected to the University. This value was supported by participant interviews, in which the students identified services and aid that would promote their overall sense of community. The scores of the subscales: membership, reinforcement of needs, influence, and shared emotional connection were presented in both the quantitative and qualitative data, allowing for further identification of how specific services could impact the overall SCI-2 score. A well-balanced approach to these subscales would likely result in better student reception and improve the total index of student sense of community overall.

As online programs continue to grow within Universities, retaining online students, encouraging morale, and improving academic success should be at the forefront of the University agenda. By addressing a student's sense of community, the University, or any other learning organization, is demonstrating recognition that each student is an

individual with needs that need to be met beyond just the classroom. While there is no one-size-fits all solution for making students feel present within the University online, taking steps to improve interaction, connection, and isolation will communicate an understanding that online students are not lesser than their brick-and-mortar peers. Instead, there should be a recognition that the technology used to teach these students can further be utilized to provide a full University experience – from a shared writing center to a football fandom, from responsive counseling to coffeehouse chats, and beyond.

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APPENDIX A

Survey Recruitment Email

Dear All,

My name is Shannon Skelcher and I am a doctoral candidate in the department of Educational Technology at [Northwest University]. As part of my dissertation, I would like to invite you to participate in a study that would help in the understanding the sense of community that online graduate students experience in terms of their connection to the educational institution providing their courses or degree. Your participation is valuable to the research and will help inform how social experience for online students can be improved. Please read the following for more information about this study.

1. What is this research study about? This research aims to study online graduate students' sense of community to the higher learning institution providing their education. This study will specifically look at graduate students enrolled in the department of Educational Technology.

2. Criteria for participation: a) You need to be 18 years of age or older; 2) You have to be a current graduate student enrolled in the department of Educational Technology at [Northwest University].

3. What you will do if you participate? If you agree to participate in this study you will fill out a brief survey assessing your sense of community to [Northwest University]. You will also have the opportunity to opt-in to a one-on-one interview about your experiences as a member of the [Northwest University] community. Please be assured that your responses will be kept completely confidential.

4. How long is the study? If you agree to participate, it will take you no longer than 10 minutes for taking the survey.

5. Compensation & Risk: There is no monetary compensation & there are no known risks or inconveniences for participating in this study.

If you have any questions regarding this research, please contact the principal investigator **Shannon Skelcher** (**shannonskelcher@u.boisestate.edu**). Thank you very much for your interests and we look forward to your participation!

If for some reason you do not wish to do this, you may contact the Institutional Review Board, which is concerned with the protection of volunteers in research projects. You may reach the board office between 8:00 AM and 5:00 PM, Monday through Friday, by calling (208) 426-5401 or by writing: Institutional Review Board, Office of Research Compliance, Boise State University, 1910 University Dr., Boise, ID 83725-1138.

To participate in this study, please access the consent form via this link:

https://boisestate.az1.qualtrics.com/jfe/form/SV_6tAyKayEsRajubH

APPENDIX B

Student Survey

Sense of Community Index Scale – 2

[Northwest University] 2018: Sense of Community Survey - Skelcher

We are interested in understanding the sense of community that online graduate students experience in terms of their connection to the educational institution providing their courses or degree. You will be asked to complete the Sense of Community Index – 2 Scale (Chavis, Lee, & Acosta, 2008) to assess your sense of community to [Northwest University]. Please be assured that your responses will be kept completely confidential.

The study should take you around 15 minutes to complete. There is no incentive for participation. However, when filling out the survey, you will reflect on your experiences within your online program of study. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice.

There are no known risks or inconveniences for participating in this study. However, you are free to decline to answer any questions you do not wish to answer or to stop your participation at any time. For this research project, we are requesting demographic information. Due to the make-up of Idaho's population, the combined answers to these questions may make an individual person identifiable. We will make every effort to protect participants' confidentiality. However, if you are uncomfortable answering any of these questions, you may leave them blank.

If you would like to contact the Principal Investigator in the study to discuss this research, please e-mail Shannon Skelcher at shannonskelcher@u.boisestate.edu or (307) 214-8485. The student advisor for this research and Co-Principal Investigator, Dr. Dazhi Yang, can also be contacted at dazhiyang@boisestate.edu or (208) 426-3212. If for some reason you do not wish to do this, you may contact the Institutional Review Board, which is concerned with the protection of volunteers in research projects. You may reach the board office between 8:00 AM and 5:00 PM, Monday through Friday, by calling (208) 426-5401 or by writing: Institutional Review Board, Office of Research Compliance, Boise State University, 1910 University Dr., Boise, ID 83725-1138.

By clicking the button below, you acknowledge that your participation in the study is voluntary, you are 18 years of age, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason. Please print this page for your own records.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

- ○ I consent, begin the study
- ○ I do not consent, I do not wish to participate

Demographic Information

What is your age group?

- ○ 18 to 24 years
- ○ 25 to 34 years
- ○ 35 to 44 years
- ○ 45 to 54 years
- ○ 55 to 64 years
- ○ 65 or older

What is your sex?

- ○ Male
- ○ Female
- ○ Transgender

Choose one or more races that you consider yourself to be:

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Other _____

Are you now married, widowed, divorced, separated or never married?

- ○ Married
- ○ Widowed
- ○ Divorced
- ○ Separated
- ○ Never Married

Do you have children under the age of 18?

- ○ Yes
- ○ No
- ○ Pregnant

What is your current employment status?

- ○ Employed full time (40 or more hours per week)
- ○ Employed part time (up to 39 hours per week)
- ○ Unemployed and currently looking for work
- ○ Unemployed and not currently looking for work
- ○ Student
- ○ Retired
- ○ Homemaker
- ○ Self-employed
- ○ Unable to Work

Please select the degree program you are currently enrolled in for this school year:

- [ ] Master's Degree
- [ ] Doctoral Degree
- [ ] Graduate Certificate
- [ ] Other (please explain): _____

How many years have you been enrolled at [Northwest University]?

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5 or more.

Have you ever completed any postgraduate work at a college/university other than [Northwest University]?

- ○ Yes
- ○ No

Have you ever visited the [Northwest University] campus, in [Northwest], in person?

- ○ Yes
- ○ No

SENSE OF COMMUNITY INDEX II

The following questions about community refer to: [Northwest University] **

** **NOT** the Department of Educational Technology

How important is it to you to feel a sense of community with other community members?

	1 Prefer Not to be Part of This Community	2 Not Important at All	3 Not Very Important	4 Somewhat Important	5 Important	6 Very Important
	○	○	○	○	○	○

How well do each of the following statements represent how you feel about this community?

	Not at All	Somewhat	Mostly	Completely
1. I get important needs of mine met because I am part of this community.	○	○	○	○
2. Community members and I value the same things.	○	○	○	○
3. This community has been successful in getting the needs of its members met.	○	○	○	○
4. Being a member of this community makes me feel good.	○	○	○	○
5. When I have a problem, I can talk about it with members of this community.	○	○	○	○
6. People in this community have similar needs, priorities, and goals.	○	○	○	○
7. I can trust people in this community.	○	○	○	○

8. I can recognize most of the members of this community.	○	○	○	○
9. Most community members know me.	○	○	○	○
10. This community has symbols and expressions of membership such as clothes, signs, art, architecture, logos, landmarks, and flags that people can recognize.	○	○	○	○
11. I put a lot of time and effort into being part of this community.	○	○	○	○
12. Being a member of this community is a part of my identity.	○	○	○	○
13. Fitting into this community is important to me.	○	○	○	○
14. This community can influence other communities.	○	○	○	○

15. I care about what other community members think of me.	○	○	○	○
16. I have influence over what this community is like.	○	○	○	○
17. If there is a problem in this community, members can get it solved.	○	○	○	○
18. This community has good leaders.	○	○	○	○
19. It is very important to me to be a part of this community.	○	○	○	○
20. I am with other community members a lot and enjoy being with them.	○	○	○	○
21. I expect to be a part of this community for a long time.	○	○	○	○

22. Members of this community have shared important events together, such as holidays, celebrations, or disasters.	○	○	○	○
23. I feel hopeful about the future of this community.	○	○	○	○
24. Members of this community care about each other.	○	○	○	○

Are you interested in participating in a follow-up interview (via Google Hangouts) regarding your sense of community and experiences at [Northwest University] as an online graduate student? Those selected to participate will be contacted via email.

○ Yes

○ No

APPENDIX C

Interview Email

Dear (Survey Respondent),

Hello again! I am conducting interviews as part of my dissertation seeking to gather data of the sense of community that online graduate students experience in terms of their connection to the educational institution ([Northwest University]) providing their courses or degree. In the previous survey, you indicated that you may be interested in providing further valuable, first-hand information from your own perspective. I am writing to ask if you are still interested in participating in an interview via Google Hangouts?

The interview takes around 20 minutes and audio from this interview will be recorded. I hope to collect and record your perspectives on being an online graduate student at [Northwest University]. Your responses in this interview will be kept strictly confidential. For each interview, I will assign an individual code in place of your name to ensure that personal identifiers are not revealed during the analysis and write up of any findings. While there is no compensation for participating in this interview, I do appreciate your willingness to expand or add to the research. It is my hope that the information provided by this study will help promote understanding and services institutions provide to other online students.

If you are interested in participating please respond to this email with a day and time that works best with your schedule and I will work to meet your availability. Please also reach out with any questions or feedback you may have pertaining to this study.

Thank you for your consideration!
Shannon Skelcher

APPENDIX D

Interview Protocol

Introduction

Hello! Thank you for taking the time to speak with me today. My name is Shannon Skelcher and I am a doctoral student in the department of Educational Technology. I will be facilitating the interview today. Before we get started with the interview questions, I would like to share some information about the study and interview:

The purpose of this interview is to follow up on the Sense of Community Index 2 survey that you took pertaining to your sense of community to [Northwest University]. The data collected within this interview will be used to provide insight into the online graduate student experiences within their perception of community and belonging to their institution. The interview responses may also provide insight to the survey results.

The interview will last about twenty minutes. You may choose to ask me to stop the interview at any time. There are no known risks or inconveniences for participating in this study. However, you are free to decline to answer any questions you do not wish to answer or to stop your participation at any time. Please know that your identity will, of course, remain confidential to only the researcher. None of your answers will be linked back to you in any way or form.

Do you have any questions before we begin?

First, I would like to explain a sense of community for you as defined by Chavis, who created the Sense of Community Index 2 survey that you took prior to this interview. Chavis defines a sense of community as: "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together."

Questions

1. Can you tell me a little bit about yourself?
2. How long have you been a student at [Northwest University]?
3. Have you taken an online course prior to starting the EDTECH program?
4. How do you, personally define a sense of community?
5. Do you perceive that there is a community amongst online students within the EDTECH department at [Northwest University]?
6. Do you perceive that there is a community amongst online students within [Northwest University] as a whole?
7. Do you consider yourself a member of the [Northwest University] community?
8. Would you identify yourself as a [Northwest Mascot]?
9. In your opinion, what does the University do to promote community for their online students?
10. What could the University do to improve a sense of community for online students?
11. Are there any services, programs, or events offered to on-campus students that you would like offered remotely?

Closing

Those are all of the questions that I have. Is there anything else you would like to add?

Thank you very much for your participation and for your time! Have a good day.

APPENDIX E

Additional Interview Questions

Do you think that your community will improve with your cohort as you guys are in the program longer? Or do you think that the distance is always going to play a factor?

Do you think that having a cohort system would be more appealing to you at the master's level?

Do you like the cohort system?

Have you ever wanted to connect with students outside of the EDTECH program - other online students in other programs?

Do you have any desire to connect with online students in other programs at Boise State?

APPENDIX F

IRB Approval

This research was conducted with approval of the Institutional Review Board at Boise State University, protocol #101-SB18-163.