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Sense of community in post-secondary online blended courses: importance of, opportunities and implications for course development

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SENSE OF COMMUNITY IN POST-SECONDARY ONLINE BLENDED COURSES: IMPORTANCE OF, OPPORTUNITIES AND IMPLICATIONS FOR COURSE DEVELOPMENT

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DEDICATION

This dissertation is dedicated to my family: Mike, Sophie, Jacqui and Maile. Thank you for your love, support, grace and mercy.

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VITA

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ABSTRACT

The need to belong and connect with others is universal among human beings. Technological advances make connecting and belonging possible via technologies, without face to face interaction. This new ubiquitous way of belonging and connecting is seen in all areas of communication, including work, schools and social environments. Online learning programs pose new challenges and questions. The purpose of this study was to learn more about the importance of sense of community within blended online programs and to determine whether there are specific learning activities that either enhance or detract from a sense of community. This information will inform course developers as to how to build community enhancing learning activities into blended online courses.

Forty-three graduate students enrolled in three different blended online programs from one University participated in an online survey process. The Classroom Community Scale (CCS) was used to assess an overall sense of community as well as 2 subscales; connectedness and learning. Overall, 86% of the subjects reported a sense of community within their educational program. Specific learning activities were assessed for use as well as student perceptions regarding whether the activity enhanced or detracted from the sense of community. Learning activities that were both collaborative in nature and synchronous were those rated by students as enhancing the sense of community. The most utilized learning activities were reading, synchronous discussions, collaborative assignments, writing and asynchronous discussions. Enhancing activities included face to face orientation pre-program start, collaborative projects, synchronous virtual sessions and group presentations.

To enhance community in online programs, it is recommended that an initial pre-program face to face session can best serve to build the initial community and support more effective

learning. Additionally, course developers should incorporate synchronous and collaborative learning activities as much as possible within the structure of the course. Finally, faculty could use the CCS to measure connectedness and learning as a way to understand the learning and community preferences of the students in order to determine options and alternatives for learning and assignment completion.

Chapter 1 Introduction

Humans have a fundamental need to belong (Moller, Deci, & Elliot, 2010). Researchers have argued that this need is a central part of human beings and is considered innate. Belonging is necessary to health and well being (Barnes, Carvallo, Brown, & Osterman, 2010; Baumeister & Leary, 1995). This need for belonging has become part of who humans are and has continued to be the backbone of human existence in both informal and formal settings such as employment, religion, education, politics and civic duty (Putnam, 2000). However, over time, technology has changed the way that humans connect and belong, raising questions about how that fundamental need to belong is met given incredible technological advances (Chayko, 2008). These questions are raised in many areas, including online learning. For example, how do online courses incorporate ways to facilitate communication and belongingness amongst students, especially due to the lack of face to face interaction? Given the importance of the need to belong (Baumeister & Leary, 1995; Moller et al., 2010), online course developers should aim to develop courses and to meet the belongingness needs of learners by using a variety of learning experiences such as: discussion posts, online forums and collaborative projects. However, as this is an evolving and relatively new area of education, little is known about how course developers can design courses that meet the belongingness needs of students.

Technology and Interpersonal Relationships

With technology use becoming ubiquitous, there is an important need to examine the impact it is having on our interpersonal relationships (Putnam, 2000). Much research has been conducted on how humans are still able to fulfill their need for emotional

interaction and through communication and whether technology has helped to change the way that humans communicate and relate to each other in beneficial or detrimental ways. (Bugeja, 2005; Chayko, 2008). Many technological advances such as the telegraph, telephone, the personal computer and the internet have all assisted in the evolution of human communication, bringing both positive and negative effects (Bugeja, 2005). For example, people began to communicate via telephone, at times eliminating the need for a face to face visit to a hospital to visit a loved one. Email communication has also led to less need for face to face communication, in many instances (Bugeja, 2005).

Chayko (2008) suggests that technology has always helped humans maintain relationships by helping to facilitate a sense of togetherness, and explains how human beings can relate virtually. Chayko explains how humans relate virtually using three constructs.

- Cognitive resonance is a feeling that a person is close to another on an emotional level. People may feel like they are in tune with each other, connected and perhaps feel a type of intimacy with each other.
- Temporal symmetry also contributes to a sense of togetherness or connectedness in virtual communication. Temporal symmetry occurs when geographically dispersed humans feel connected to one another by sharing a particular event at the same time. Perhaps the viewing of a birth via the internet or watching a global news event at the same time may cause temporal symmetry.
- Social presence, a feeling or sense that someone is "there" virtually, contributes to the feeling of connectedness in a virtual setting. For

example, people texting back and forth may feel togetherness because they can sense the other person as someone sharing that particular moment, even when they are separated geographically.

Technology and Education

As technology has become woven into most industries, so has it been woven into education. In fact, the phenomenon of virtual or *online learning* is growing rapidly. The term *online learning* refers to education in which instruction and content are delivered primarily over the Internet. (Watson & Kalmon, 2005). In a recent report of undergraduates enrolled in colleges in 2007-2008, twenty percent reported enrolling in a distance education course and four percent were enrolled in distance education programs (Boling, Hough, Krinsky, Saleem & Stevens 2012). These percentages are up from 1999-2000, when eight percent of undergraduates reported being enrolled in distance education courses and two percent reported being enrolled in distance education programs (Radford, 2011).

Online learning has its many benefits and flaws and both impact the educational experience. One of its flaws is persistence, or continuing enrollment. In fact, in post-secondary institutions continuing enrollment has been cited as anywhere from 10% to 50% lower persistence than in traditional educational settings (Drouin & Vartanian, 2010; Huett, Kalinowski, Moller, & Huett, 2008; Nagel, Blignaut & Cronje, 2009; Roblyer, Davis, Mills, Marshall, & Pape, 2008; Simpson, 2004). Although there are many reported reasons for lack of persistence, a sense of loneliness and isolation is one factor reported by students. This loneliness and isolation may be more prevalent in online learning

settings because there are fewer perceived opportunities to connect and interact with other students (Bocchi, Eastman & Swift, 2004).

This growth in online learning has also affected the course development paradigm. Course developers are tasked with determining how to develop rigorous, engaging and interactive online or blended courses that provide similar outcomes as traditional courses. Traditional classroom teachers are being asked to develop online or blended courses while there is some tension about how to effectively use technology within education (Desai, Hart, & Richards, 2008). Although, in the Desai, et al. (2008) study, both students and instructors reported that text heavy courses were less interactive, potentially causing feelings of isolation and loneliness. Considering this information, online course developers may have an even more complex task of developing courses that include enough and varied opportunities for interaction. Finally, the development of online and blended courses is ever evolving, as the online learning industry continues to grow.

Considering that human beings have a fundamental need to belong and with the rapid growth of online learning opportunities with lower persistence rates, an important focus is on the theoretical construct of a sense of community. The construct first appeared in the educational literature by McMillian & Chavis (1986), who define sense of community as a feeling that a member belongs to a group and that group members are committed to each other, as seen for instance, in classrooms with increased communication and mutual respect. (McMillan & Chavis, 1986; Rovai, 2002a).

Many studies have been conducted comparing sense of community to variables such as online versus traditional face-to -face courses, type of online course

(synchronous, asynchronous and blended), persistence in the program and its impact on perceived learning (Carr, 2000; Perry & Pilati, 2011; Rovai & Gallien, 2005; Rovai, Wighting, & Liu, 2005). They concluded that online students scored lower on classroom sense of community and school sense of community, suggesting that online students feel a weaker sense of community than traditional face-to-face students.

In terms of online learning, there are three types of online learning.

- Synchronous online courses are courses in which students are all on pace together and they attend a variety of real time or live discussions with teacher and other students in the course (Bocchi et al., 2004).
- Asynchronous online courses are courses in which students can be self-paced and have few, if any real time or live discussions or connections with the teacher and other classmates. A common end date may exist, but students can be self-paced through the curriculum (Bocchi et al., 2004).
- Blended courses involve a combination of asynchronous and synchronous instruction, often including face to face meeting components (Perry & Pilati, 2011).

Rovai and Gallien (2005) compared the sense of community within the three online models. The blended model had higher sense of community. They concluded that perhaps some level of face to face interaction increases the sense of community within a course. If so, perhaps synchronous instruction, whenever possible should be implemented, in order to assist in the growth of sense of community.

The relationship between sense of community and persistence was investigated in several studies (Carr, 2000; Park & Choi, 2009; Rovai & Gallien, 2005). Results of these

studies point to several factors that may lead to lower persistence rates. Low sense of community (Rovai & Gallien, 2005), technological issues, loneliness and feelings of isolation (Park & Choi, 2009), are among reasons for lower persistence rates. While Carr (2000) reports lower persistence rates in online courses than in traditional courses.

In several studies, the importance of sense of community with respect to learning has also been researched. For example, sense of community was positively correlated with self-reported improved learning by students, in general (Rovai, 2002a) and specifically by female students (Rovai & Baker, 2005). The importance of sense of community in an online course leads to the need to include various opportunities for students to connect with each other and with educators as well as to understand exactly which learning experiences promote sense of community. If a sense of community is important to students learning in online environments, how might course developers and curriculum developers account for sense of community by building in opportunities for it to occur?

Purpose of the Study

The purpose of this study is to examine best practices in blended courses and identify ways in which course developers can build educational experiences into online courses that may help to foster a sense of community for adult learners, perhaps leading to higher levels of student satisfaction and higher persistence rates in blended and asynchronous courses. First, it will be important to determine to what degree students feel a sense of community within their online courses. Secondly, an understanding of educational experiences in the online courses which best promote sense of community

will be sought. Finally, a study of participant demographics may add depth or further understanding to participant responses.

Research Questions

1. To what degree do experienced online learners feel a sense of community as measured by the Classroom Community Scale (CCS) within their online course or program?
2. To what degree do experienced online learners feel a sense of community within their online course or program is important?
3. What types of learning experiences within an online course or program contribute to an individual student's overall sense of community?
4. What types of learning experiences within an online course or program detract from a students' overall sense of community?
5. Are there differences in desire for sense of community across student demographics?

Statement of the Problem

Given the growth of online learning over the past 20 years, educators have seen a number of benefits and concerns arise. The benefits include learning opportunities with fewer geographical restrictions, more flexibility and more availability to students to access courses anytime, and lower cost. According to a report about online learning for undergraduates released by the National Center for Education Statistics (Snyder & Dillow, 2011), older students and students with families that depend on them are more often enrolled in online courses than younger students without dependents. Additionally, the report stated that 62% of undergraduate students enrolled in a distance education

degree program were employed full-time. However, concerns about engagement with a community of learners and persistence in degree programs continue (Carr, 2000; Perry & Pilati, 2011),

Sense of community is a two pronged concept relating perceived learning and connectedness. According to Rovai (2002b), the level of perceived learning and the level of connectedness students feel in a course or program add up to the level of sense of community. A fair amount of research has been conducted on the impact of sense of community on students enrolled in online courses, as well as traditional face-to-face courses. Many interesting findings suggest that a sense of community is an important and predictive construct in online learning. An instrument to measure sense of community, the Classroom Community Scale (CCS), was developed by Rovai (2002b). The instrument measures the level of community within a classroom or program, which can alert an instructor to the general feeling of connectedness and perceived student learning, but does not provide any prescriptive description of how to increase sense of community. A stronger sense of community may lead to more satisfied learners, more connected to other learners and higher persistence rates (Liu, Magjuka, Bonk, & Lee, 2007; Ouzts, 2006; Rovai, 2002a; Rovai & Baker, 2005).

However, deficits in the literature do exist. Much of the research has been done with online learning students, but the method or style of the particular online course has not been fully described. For example, many studies in the early 2000s, have been conducted before the evolution of online learning to include synchronous, and blended models of instruction, focusing instead on asynchronous instruction. As new technologies emerge, course developers are able to be innovative in online course design

and delivery methods, which deserve study for their efficacy with student learning and community building.

Conceptual Foundation

Several key conceptual areas frame this study, including the theoretical construct of community, online learning and pedagogical practices, as well as the area of online course development. First, belongingness and associated theories such as Maslow's Hierarchy of Needs (1954), Bowlby's Attachment Theory (1969, 1973) and Rovai's Sense of Community (2002a, 2002b) are explored and discussed in Chapter 2, orienting the reader to the importance of belongingness in humans and exhibiting the depth and breadth of the evolution of theories related to belongingness.

An emphasis is placed on the theoretical construct of sense of community due to its relative importance in this study. Community has been defined in a number of ways. McMillan and Chavis' (1986) widely accepted definition as a feeling of belongingness, that one matters to the group and that the group is committed to each other. Rovai (2002a) built on that definition adding that community characteristics that support this definition are: spirit, trust, interdependence, interactivity, shared values and beliefs and common expectations. Community building in online classrooms is important because it helps to attract and retain learners.

The second conceptual frame involves andragogy and online learning practices. Andragogy is defined as helping adults learn (Knowles, 1980). Andragogical theory is based on four concepts about adult learners: they are mature and self-directed, they have prior experiences that aid in learning, they posses a readiness to learn and they see learning as a way to gain competence (Knowles, 1980). As such, implications for

instructors assume that learners want to learn, learners accept responsibility for their learning and learners actively participate in the learning process (Knowles, 1980). While the variety of delivery methods may provide students more convenience than that of traditional face to face courses, a close look at the efficacy of each delivery method in terms of student learning outcomes and achievement is necessary. As online learning evolves and changes, the importance of examining the strengths and weaknesses of each delivery method must not be overlooked.

Finally, a discussion of principles and models of online course design and development lend insight into current best practices that emphasize student achievement and learner outcomes. Online course development, much like online learning, is an evolving area of education. According to Huett et al., (2008), online course developers find themselves facing many challenges which include proper design and development which results in rigorous, effective courses. Additionally, online course developers face challenges of a diverse student population, lack of trained professionals to develop online courses within institutions, pushback from faculty and organization change obstacles (Huett, et al., 2008).

The three constructs of community, online learning and course development can be examined both separately and together in order to provide information about how to develop the most efficacious online courses that promote community, student satisfaction and student achievement.

Definitions of Terms

For purposes of this study, the following terms have been derived from literature on belongingness, online learning, course development and course design.

Belongingness Terms

- Belongingness- An innate feeling and sense of belonging to something such as a group, a family, a community (Baumeister & Leary, 1995; Deci & Ryan, 2000). For this study, belongingness will be measured within the Classroom Community Scale (CCS), developed by Rovai (Rovai, 2002b).
- Sense of community- A theoretical construct that describes a feeling of belonging to a particular group (Rovai, 2002b). For purposes of this study, sense of community will be measured within the Classroom Community Scale (CCS), developed by Rovai (2002b; McMillan & Chavis, 1986).
- Desire for sense of community- The degree to which the learner wants a sense of community within an online classroom and is measured by the Classroom Community Scale (CCS), developed by Rovai (2002b).

Online Learning Terms

- Asynchronous learning- A type of online learning instruction that involves students working at their individual paces or times. The majority of instruction is delivered when students are not required to be at the same place at the same time (Bocchi et al., 2004).
- Distance Learning- One of the first names of what we now call "online learning." It involved many types of correspondence, such as mail, television, video and telephone instruction (Bocchi et al., 2004).
- Blended learning- A type of online learning instruction that involves students learning both face to face and virtually (Perry & Pilati, 2011).

- Experienced online learners- For purposes of this study, the researchers is using the experienced online learners defined as students who have completed a minimum of one online course. Learner experience levels will be self-reported through the demographic portion of the survey.
- Online Learning- Education in which instruction and content are delivered primarily over the Internet. (Watson & Kalmon, 2005)
- Synchronous learning- A type of online learning instruction that is delivered to students at the same time, while they are in the same place virtually, such as via website or other social media (Bocchi et al., 2004).

Course Design and Development Terms

- Course Developer- A specialist with expertise in designing online courses. Course developers are usually involved in the development of a course layout, the end-user experience, learning opportunities, content design and development, lesson development and style of a course.
- Learning Activities- For purposes of this study, learning activities are defined as activities that students experience within their online course, specifically when learning is mediated via technology. Examples of learning experiences are: discussions, synchronous sessions, completing and assignment, collaborative presentations, etc.

Significance of Study

This study is significant in several ways. This study may contribute to the improvement of the practice of course development and lead to increased persistence rates through a focus on community. Results of this study may inform course developers

as to best practices for incorporating community into online and blended course design. Finally, this study may lead to an improvement of policy surrounding course development.

The major goal of this study is to inform course developers of student perceived best practices in building a sense of community within asynchronous online courses by examining the best practices of blended online programs. Even though the study is being conducted with blended courses and the findings are applicable to blended course development, they will potentially be helpful for asynchronous course development, as well. It is important to look at the best practices of blended courses and programs in order to inform asynchronous course design, as asynchronous courses can have fewer interactions and opportunities for community building than do blended courses. Findings will be compiled into a list of best practices for course developers in order to provide information on building in opportunities for community building within the foundation of the course, as its backbone, rather than as an appendage or add on. The list of best practices developed from this study may also help to reduce the cost of the development of online courses as well as suggest ways in which to implement this type of change within a given institution. This information may also be helpful for faculty who are increasingly responsible for developing online courses, with little or no training (Huett et al., 2008).

With the ever increasing number of institutions adding online courses to their course catalogs, it is important to examine certain factors contributing to the efficacy of online learning: student persistence and student satisfaction. While much research has been done in the area of persistence within online education (Carr, 2000; Liu et al., 2007;

Rovai, 2002a), few studies have been devoted to the investigation of the relationship between sense of community and persistence within online courses. The findings of this study will provide meaningful insights into the role of online course development within the context of sense of community and online delivery models, which is almost nonexistent in the literature.

Finally, this study seeks to inform policy in the area of online course development. A growing number of groups guide and regulate policy in the area of online learning, such as: The International Association of K-12 Online Learning (iNacol), Sloan-Consortium and Quality Matters. As an evolving area of curriculum development, online course development stands to benefit from an understanding about important policy decisions and choices to be made in order to promote a positive transition with regard to the movement towards online course development for their institution. Change can bring pushback from faculty, staff and other stakeholders about cost and efficacy of the development of online courses.

Summary

Many important things can be learned from experienced virtual learners that can aid the course development process. The importance of learning experiences that promote or detract from an individual building a sense of community within online graduate courses can ultimately improve learning. Developing a set of best practices with regard to the inclusion of experiences and learning opportunities that promote sense of community may be beneficial to the field of online learning. The review of literature in the next chapter presents existing knowledge and research about the basic human need for belonging and emerging theory regarding online learning. The ideas of how virtual

learning environments can promote a measureable construct of a sense of community are also explored in depth along with current thinking about course development is also discussed. Lastly, research in course development will be explored.

Chapter 2 Literature Review

This chapter provides the theoretical foundations for this research project which attempt to understand how specific learning experiences commonly used by faculty and course developers may influence an adult student's sense of community within online courses. The discussion begins with an in depth review of existing knowledge and research about the basic human need to belong. A review of several theoretical constructs will be examined, with an emphasis on Maslow's Hierarchy and Rovai's sense of community, a theoretical construct applying the need to belong within classroom settings, which may contribute to perceived learning, lessened feelings of isolation and increased student persistence. This discussion is followed by a presentation of research regarding online learning, best practices within online learning andragogy, and online course design and development models and practices.

Basic Human Needs

The idea that humans need to belong and that the need to belong leads to health and well being has been widely studied (Baumeister & Leary, 1995; Moller, et al., 2010). There are many constructs and theories that address the need for humans to belong. This section reviews the major theories which seek to explain the basic need for humans to belong and how that need expresses itself in relationships and social interactions.

The Need to Belong: Theoretical Models

The need to belong has been defined in many ways and the definition has evolved over time. Anant (1966) defined the need to belong as involvement in a social system to the extent that the person feels an important part of a system. Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier (1992), expanded the conceptual definition to include two

components; the experience of being valued in a social system and the self-perception of fitting within the social system. The concept of the need to belong was further developed by Baumeister and Leary in 1995. They proposed that the need to belong has two components. First, people need many, ideally positive interactions with other people. Secondly, people need to feel an interpersonal bond with another that is "marked by stability, affective concern, and continuation into the foreseeable future (p. 500)." Belonging or lack of belonging has been associated with many positive and negative effects on human beings (Anant, 1967; R.F. Baumeister & Leary, 1995; Hagerty, et al., 1992). Psychologists have long argued that human beings are innately designed to form social relationships and bonds (R.F. Baumeister & Leary, 1995; Bowlby, 1969, 1973; Levett-Jones, Lathlean, Maguire, & McMillan, 2007; Maslow, 1968). Humans have needed to belong to a group for survival and protection from predators. Without forming into groups, humans may not have been able to adapt to the environment and its stressors (Caporael & Brewer, 1995; Carvallo & Gabriel, 2006). From these initial formations as groups for survival, humans continue to need to be grouped (Carvallo & Gabriel, 2006; Stevens & Fiske, 1995).

Maslow's theory of human motivation. Maslow (1954) developed a theory of human motivation. Maslow's work in psychology in the 1950s was ground breaking and has been the foundation of many ongoing psychological studies and models for proper development of human beings. Maslow (1954) developed a theory of human motivation and development based on a hierarchy of needs to be met. Maslow defined five basic needs that all humans possess: physiological needs, safety and security, the need to belong and affection, respect and self-respect and self-actualization.

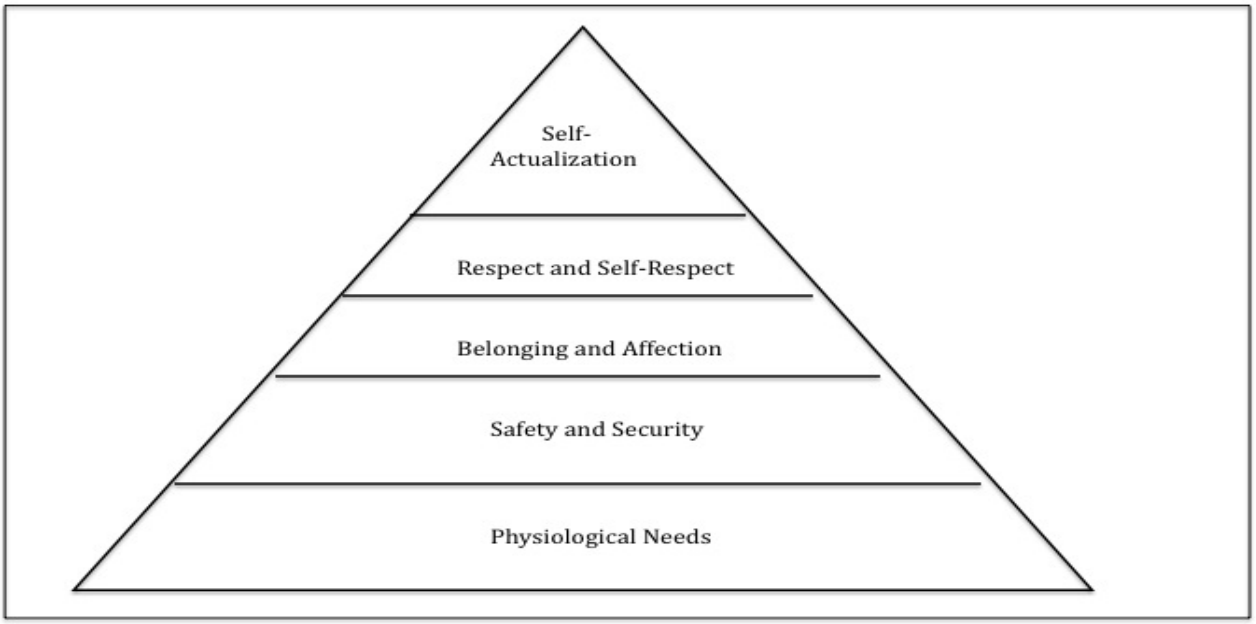

Figure 1. Maslow's hierarchy of needs.

This figure illustrates the hierarchy of needs beginning at the base with physiological needs, working towards the pinnacle, self-actualization.

In theory, each need must be met in order to continue to develop and grow psychologically. As one need is met, one can work on attaining the next need, sequentially. A need may not be considered met until the preceding need or needs have been met. The first primary need is preservation of life or physiologically needs, followed by the needs for safety and security. As one achieves these first needs levels, one can work on achieving the next levels. One would not be able to meet the need to belong and love if physiological needs have not been met. The attainment of needs rises up the hierarchy. At the pinnacle of the hierarchy is self-actualization. According to Maslow (1954), this is the goal of human beings. One of the basic needs is the need to belong and

affection, which comes right after safety and security. As the need to belong is the third most important basic need, this speaks to the importance of belonging to a group, whether it is a family, club, and group of friends, which suggests a link to our group-preferring ancestors.

Attachment theory. Attachment theory is related to the constructs of the need to belong and connectedness because attachment theory posits that a person's secure or insecure attachment as a child can interfere with getting along with others later in life (Bowlby, 1969). Mallinckrodt (1992) found that parental bonds are positively related to self-efficacy and that they are an important predictor of adult behavior. People who had secure attachments throughout their childhood tend to get along with others better in adulthood, showing strong social competencies (Mallinckrodt & Wei, 2005).

Another study by Mallinckrodt (1992) found that parental bonds are positively related to self-efficacy and that they are an important predictor of adult behavior. Research conducted by Carvallo and Gabriel (2006) focusing on the dismissive avoidant style found that although dismissive avoidant people state that they are indifferent to others' perceptions of them, evaluation of the dismissive avoidant participants showed that those that were highly ranked reported higher levels of self-esteem on the follow-up survey, thus indicating that they do in fact care about what others think of them.

The belongingness orientation model. Lavigne, Vallerand & Crevier-Braud (2011) hypothesized a Belongingness Orientation Model (BOM). There are four components to the BOM.

- The need to belong is innate in humans and is universal (R.F. Baumeister & Leary, 1995; Deci & Ryan, 2000).

- Two orientations exist for humans, growth orientation and deficit-reduction orientation. Growth oriented people want to connect with others, be genuinely interested in them as human beings and develop relationships with others. People with a deficit-reduction orientation desire to be close to others to fill some void within themselves. Deficit-reduction oriented people seek relationships to meet their need for social acceptance.
- A person's previous social experiences will develop into one of the two orientations, either growth orientation or deficit-reduction orientation. Lavigne, et. al. (2011) believe that both orientations are in each person, but depending on social experiences, they vary in strength or degree.
- Belongingness orientations (growth or deficit) lead to different social experiences and how one is perceived by others. Those with growth orientations are more likely to adapt to various social situations, while those with deficit orientations may actually look for signs of rejection, thus actually contributing to future rejection.

Results from the four studies showed that there is support for the distinction between growth orientations and deficit-reduction orientations. Additionally, researchers found that both orientations were associated differently with interpersonal and intrapersonal experiences.

In an effort to test several of the BOM's hypotheses, four studies were conducted by Lavigne et al. (2011). The purpose of the group of studies was to develop and validate a scale that would assess growth and deficit-reduction orientation, determine whether or not growth or deficit orientations could predict future "interpersonal consequences"

(p.119), determine if attachment style was predictive of past social anxiety and to predict coworker's predictions of orientation on study participants. Several notable results were gained from the group of studies. First, results showed that growth orientation is negatively associated with anxiety and loneliness, while deficit reduction orientated people may have more of a predisposition to low self-esteem, loneliness and anxiety. Second, results showed that secure attachment style is related to growth orientation, while the fear-avoidant attachment style is related to deficit-reduction orientation. Finally, in the effort to determine if colleagues could predict participant orientation (growth or deficit), the study found that those with a deficit reduction orientation received low evaluations from colleagues, illustrating that those with this orientation have a need for others' attention that is perceptible by others. Generally speaking, the four studies conducted supported the hypotheses of the Belongingness Orientation Model (Lavigne, et al., 2011), that a deficit-reduction orientation to the need to belong is correlated with lower interpersonal functioning, than those with the growth orientation.

Although the generally accepted view on the need to belong is that all people feel a need to belong, there are many people who claim that they do not need a sense of the need to belong in their lives. In Moller, Deci and Elliot's (2010) study on relatedness, they found that people who experienced more relatedness in their lives had more affective value from social encounters. Conversely, people who experienced less relatedness had lower affective value from social encounters (Moller et al., 2010).

Need to belong research involving students. There have been many studies on the need to belong, using students as subjects. Resnick, et al. (1997) reported that adolescents level of connectedness with family and in school were related to lower

emotional distress and rates of violence. Osterman (2000) states that students who feel belongingness in school are more engaged, more motivated and are more committed in school. Baskin, Wampold, Quintana & Enright (2010) conducted a study of middle school students to determine the relationship between the need to belong and peer acceptance and depression. Researchers concluded that the need to belong may be an important protection or defense against the negative effects of low peer acceptance and high loneliness, often found with adolescents (Baskin, et al., 2010). People who feel the need to belong may have positive, close relationships with some peers and family members, which may, in turn, cause them to feel less impacted by low peer acceptance and loneliness.

In Levett-Jones, Lathlean, Maguire & McMillan's (2006) analysis of several nursing studies involving clinical placements, they studied nursing student clinical placement issues with respect to the need to belong. They concluded that the need to belong may or may not be related to the length of placement, but noted a possible link between the need to belong and learning. Nursing students can feel alienated and dissatisfied in their new clinical settings, as well as feel forced to conform whether or not proper procedures are followed. (Levett-Jones et al., 2007; Watt & Goh, 2003). Nursing students who felt the need to belong in their clinical setting expressed a perception of learning more (Levett-Jones et al., 2007).

Need to belong research involving the workplace. The need to belong impacts those in the workplace, as well as in schools. Winter-Collins and McDaniel (2000) found that there were strong correlations between sense of belonging and job satisfaction and the quality of interaction in the workplace. They concluded that managers should focus

on increasing new employees' sense of belonging to lead to job satisfaction (Winter-Collins & McDaniel, 2000). Orientation and training programs that include interaction with many people throughout the organization and hands on type learning, may provide opportunities for developing a sense of belonging.

Close relationships in the workplace can lead to job satisfaction. In 2004, the Gallup Management Journal's semi-annual Employee Engagement Index sought to gain perspective on negative relationships in the workplace (Crabtree, 2004). The study describes three types of employees: engaged, not-engaged and actively disengaged. Analysis of the data found that engaged employees report that their organization encourages them to have friendships at work. Most employees who reported being extremely satisfied at work also reported that their organization encourages friendships at work (Crabtree, 2004).

Belongingness in the workplace also takes on a cultural perspective. Jones, Wilson and Jones (2008) found that ethnic minorities who feel a sense of belongingness in their workplace and believe in their organization's commitment to diversity policies, feel connected to others in the workplace. Cockshaw and Shochet (2010) found that sense of belongingness in the workplace was correlated with depressive symptoms. Those feeling lower levels of belongingness had more depressive symptoms.

Further evidence of the positive impact of belonging and relationships in the workplace were found in Leblebici's (2012) study on workplace environments and productivity. Respondents stated that the two most important factors contributing to employee productivity were emotional factors and interpersonal relationships, suggesting that negative relationships would lower productivity. Additionally, all of the respondents

reported that their interpersonal relationship with their supervisor increased productivity because they felt encouraged and reported increased self-confidence (Leblebici, 2012). Positive interpersonal relationships within the workplace have positive effects on employee productivity.

Need to belong and health studies. Because a need to belong is so deeply ingrained in human beings, it also impacts humans in the areas of health and mental health (Anant, 1967; Lyyra & Heikkinen, 2006; Tomaka, Thompson, & Palacios, 2006). In Anant's (1967) study of mental health and belongingness, he found that there is an inverse relationship between the need to belong and anxiety. The more a person feels a sense of the need to belong, the lower the anxiety will be. There is a positive relationship between the need to belong and mental health.

With respect to physical health and mortality, studies indicate a correlation between the need to belong and mortality (Lyyra & Heikkinen, 2006). In Lyyra and Heikkinen's (2006) longitudinal study, they examined the relationship between social support and mortality. By measuring the effects of providing emotional support or advice, they found there a positive correlation between emotional support, sense of belonging, nurturance in women. Conversely, neither type of support, emotional or advice, showed a significant correlation with mortality in men (Lyyra & Heikkinen, 2006).

Tomaka, Thompson and Palacios' (2006) study of the relationship between social isolation and social support to elder health. found that social isolation and social support are correlated with health in people over 60 years of age. There was strong support correlating the need to belong and family support and loneliness to health. The need to

belong support was correlated with diabetes, hypertension, arthritis and emphysema (Tomaka et al., 2006). Feeling a sense of belongingness can positively impact health.

Affiliation as theory of belonging. Affiliation is a theoretical construct incorporating the idea of belonging was first researched by Heyns and Lansing (1959), Schachter (1959) and Mehrabian & Ksionzky (1974). Schachter (1959) studied the effects of stress on affiliation and found that the higher the stress, the higher the need for affiliation. Baker (1979) defined affiliation as "a motive for warm, close, intimate personal relationships." (p.99). Studies about affiliation needs have produced inconsistencies suggesting that not everyone feels affiliation needs for the same reasons and at the same levels (Rofe, 1984).

Rofe (1984) developed a theory of affiliation called Utility Affiliation Theory. Utility Affiliation Theory attempts to explain the inconsistencies in traditional affiliation theories by stating that the level of affiliation one feels is directly related to the "benefit and/or damage" (p. 236) to a person as a result of being around others. In other words, if being around others right before an important presentation is beneficial to a person, they will have high affiliation needs. However, if being around people right before an important presentation causes stress and anxiety, then the affiliation need, or desire to be around others will be decreased. In a sense, affiliation theory may explain why people vary in their desire to belong, in certain situations.

Parasociality. Thus far, the discussion on the need to belong has been directed towards humans interacting with each other. In fact, literature, television and other media can also provide opportunities for humans to feel a sense of the need to belong or alleviate loneliness (Derrick, Gabriel, & Hugenberg, 2009; Derrick, Gabriel, & Tippin,

2008). These are feelings of parasociality. Parasociality is defined as one-sided relationships with celebrities, characters and other famous people in the media (Derrick et al., 2008; Horton & Wohl, 1956). In Mar and Oatley's (2008) study, the authors describe the role of literary fiction as a way to simulate social experiences, through the act of reading. They state that readers of literary narratives experience thoughts and emotions much like those of the narrative characters, as literary narratives can model our social world. When reading, people can sometimes feel completely caught up in the story, even thinking about it outside of reading or even dreaming about the story and characters. This may be due in part because humans insert or immerse themselves into the story and involve themselves emotionally. Humans can also experience social situations vicariously, helping them to learn how to respond in certain situations.

Derrick, Gabriel and Tippin (2008), researched the impact of parasociality on self-esteem. As people watch television, movies or other media, some may feel that they begin to know the celebrity and connect with them on an intimate level (Derrick et al., 2008). Derrick, et. al's (2008) research was a trio of studies focusing on parasociality and self-esteem. The results showed that participants with low self-esteem felt close to celebrities who were similar to their ideal self and that low self-esteem participants primed with their favorite celebrity showed greater similarity between actual self and perceived self. Derrick, et. al. (2008) interpreted this result to mean that "low self-esteem people experienced movement toward their ideal self through their connection to a favorite celebrity" (p.271). Even though parasocial relationships are not real, they feel real to people involved in them and can help to emotional voids caused by loneliness. (Derrick et al., 2008).

Derrick, Gabriel & Hugenberg (2009) researched their Social Surrogacy Hypothesis. The Social Surrogacy Hypothesis is defined as parasocial relationships between humans and characters on television and how those relationships can mimic belonging (Derrick et al., 2009). In this research composed of four studies, the authors found that television and other technologies could also have an impact on one's sense of belonging and that one-way parasocial relationships can mimic real life relationships (Derrick et al., 2009). The need to belong is so strong amongst humans, that they will sometimes identify with characters, actors and other celebrities to alleviate loneliness and feel a sense of belonging.

Lack of Belonging and it's Impact. A lack of the need to belong can lead to a host of negative consequences related to psychological, emotional and physical well being. Baumeister and Tice (1990) assert that anxiety is derived from the basic human need to belong to social groups. They further state that anxiety is an innate response to the fear of being excluded from social group. The anticipation or fear of being excluded causes anxiety. However, Goodwin (1986) claims that anxiety can be alleviated or reduced by developing positive social bond.

Rejection and ostracism often result in negative effects on people and people respond to rejection in common ways. In one study, the researcher found that when participants experience interpersonal problems, they try to move on and find new friends or affiliations (Maner, DeWall, Baumeister, & Schaller, 2007). In another study, participants responded to rejection by *buffering* themselves from the rejection. Some participants rationalized the rejection by stating that the rejecter did not know them well enough. Participants also responded in a derogatory way against the responder (find

coping with rejection by derogating). Women have been found to be more depressed after a breakup was initiated by a partner than when they initiated the breakup (Ayduk, Downey, & Kim, 2001). Finally, one study completed to determine if physical pain and social pain are similar concluded that social pain was analogous to physical pain (Eisenberger, Lieberman, & Williams, 2003; Panksepp, 2003).

A lack of belonging taken to the extreme is ostracism. Ostracism has similar negative effects on people. In one study, participants were ostracized online and they felt bad and lost their sense of belonging (Williams, Cheung, & Choi, 2000). Another study validated these results by finding that ostracism is difficult on people in both virtual and face to face settings (Zadro, Williams, & Richardson, 2004). These findings illustrate how deeply we can be effected by rejection and exclusion as a result of our highly social nature (Zadro et al., 2004). The need to belong is an important need for humans.

Interpersonal Relationships Mediated by Technology

Interpersonal relationships and technology's impact on them has been an emerging topic as the use of media technologies has become ubiquitous for many people. When considering the issue of connecting with others and belonging in a relational way via technology, one may wonder how one can feel a sense of belongingness who are not within their proximity and is it even possible?

Chayko (2002) has studied social bonds and communities in the internet age. Chakyo asserts that connecting virtually, at a distance, is not a new concept and that the bonds that we form with others are real and exist mentally (Chayko, 2002). Chayko calls these types of bonds sociomental bonds, connections that exist in a mental realm, but are developed when two people have a meeting of the minds, or connect virtually. The author

asserts that these bonds are real and should not be considered less than physical bonds, resulting from face to face interaction, nor devalued (Chayko, 2002). Along with the many positive aspects of sociomental bonding such as sharing cultural knowledge, mentally engaging with one another and developing more ways to communicate with each other, Chayko (2002) notes that one downside of sociomental bonding is withdrawal. Some people have so many virtual connections that they may withdrawal from face to face connections.

Wolak, Mitchell and Finkelhor (2002), studied online relationships between adolescents. Taking data from a national survey on approximately 1,500 adolescent internet users, 14% of participants reported close online relationships, while 7% reported face-to-face meetings with friends they met online. The majority of relationships were reported to be with same age, opposite gender adolescents. While the majority of these online friendships did not lead to close relationships, many adolescents did connect to others online (Wolak, et al., 2002).

A study was conducted to assess the social involvement and psychological well being with internet use (Kraut, Patterson, Landmark, Kiesler, Mukopadhyay & Scherlis (1998). In this study, internet use was tracked for one year and data was collected on demographics, internet use, email use, social involvement and psychological well-being. The authors found that during this longitudinal study, a correlation between the amount of internet use and social involvement both in family and out. The authors state that although the internet is a social technology, in this study, it caused declines in social involvement and psychological well-being (Kraut et al., 1998).

Mitchell, Lebow, Uribe, Grahouse & Shoger (2011) studied the impact of internet use of happiness, social support and introversion based on six types of internet use; purchasing, information seeking, tasks, entertainment, work and school related activities and mischief. Higher internet use in gaming and mischief resulted in lower amounts of perceived social support. Internet use for mischief resulted in lower levels of happiness (Mitchell, Lebow, Uribe, Grathouse, & Shoger, 2011). Additionally, time spent working on tasks alone and time spent in the area of entertainment, showed an inclination towards introversion (Mitchell et al., 2011). The quality or type of internet use seems to effect people in different ways, suggesting that certain types of internet use indicate introversion, as opposed to extroversion and connections with others.

Online Learning and Andragogy

Online learning is not a new concept, as it derived from distance education (Larreamendy-Joerns & Leinhardt, 2006). Distance education began in the nineteenth century as correspondence courses which evolved into television courses and then into web-based courses in the mid-1990s (Perry & Pilati, 2011). According to Larreamendy-Joerns & Leinhardt (2006), distance education began on the periphery of university programs, in university extension. Over time, distance learning has moved from the periphery to the center of university programming with the advancement of technology and acceptance as a legitimate form of education. Enrolling as a distance education student or online student is considered the norm. The industry of online learning has grown as new technologies have become available such as broadband internet access, Skype and virtual classrooms.

Online learning is an important and growing industry throughout the world for students of all ages and backgrounds. According to a recent study by Allen and Seaman (2010), during the fall of 2008, 4.6 million higher education students were taking at least one course online. That is a 17% increase over the previous year, with a growth rate of 1.2% in over all higher education enrolment. More than 25% of higher education students are taking at least one online course (Allen & Seaman, 2010).

Types of online learning. Online learning has taken on many forms during its evolution. As online learning is constantly evolving, so too are the definitions and meanings behind the methodology and delivery. Online learning can occur synchronously, asynchronously or in a blended manner. The three types of online learning delivery are defined below.

- Synchronous courses- courses conducted in real time, with all participants connected via technology to the content deliverer or instructor. These types of courses have requirements of attending online functions, as well as specific deadlines (Bocchi, et al., 2004).
- Asynchronous courses- courses that do not require students to meet at specific times for content delivery. There is often little to no real time communication (Bocchi et al., 2004).
- Blended courses- courses that combine face-to-face instruction and online instruction (Perry & Pilati, 2011).

As evidence of the rapidly changing nature of online education and nomenclature, Allen and Seaman (2010) have provided updated terms to describe various online learning deliveries. Web facilitated courses use the internet to mediate face-to-face

instruction and may include using the internet to post web pages where students access the syllabus or ancillary materials. Blended courses combine online and face to face instruction and may include online discussions and a substantial portion of the content delivered online. Finally, online courses are defined as having most or all of the content delivered via a learning management or course management system online, with little to no face-to-face requirements.

Recent research shows that the types of online courses delivered in post-secondary institutions in the United States vary by type of online program; asynchronous, synchronous and blended (Parsad & Lewis, 2008). According to Parsad & Lewis, asynchronous courses are the most widely used type of online course delivery, with 92% of institutions reporting they use it to "a moderate or large extent," (p.11). Synchronous delivery was reported as being used to a *moderate or large extent* 31% of the time. Blended delivery of online instruction was not recorded in their study (Parsad & Lewis, 2008).

Online learning andragogy, pedagogy and learning experiences. Andragogy and pedagogy are the main building blocks to effective teaching and student learning and should be considered in all teaching environments. While pedagogy and andragogy both act as foundational theory in education, there are similarites and differences between the two. Both pedagogy and andragogy stem from motivation theory, with extrinsic and intrinsic motivation at its core (Pew, 2007). According to Pew (2007), several distinctions can be made between pedagogy and andragogy. Knowles (1980) explained that pedagogy is often referred to when working with children or younger adults. It is characterized by educators making decisions about what, how, why, when something is

learned and based on the transmission of knowledge, whereas andragogy is more focused on "helping human beings learn" (p. 38). Knowles (1980) describes andragogy as the philosophy of teaching for adults and as having the following characteristics:

- Individual's desire to be responsible for learning and self-directed
- Based on individual's experience
- Individual's readiness to learn based on needs in their life
- Learning experiences are based on real-life or practical situations and are purposeful
- Individuals may be more likely to be intrinsically motivated

Knowles (1980) points out that both andragogy and pedagogy are distinct and coexisting models that take into consideration the differing needs of student populations. For purposes of this study, andragogy is the preferred educational philosophy, due to the adult population being studied. Although the same basic andragogy applies in both traditional face-to-face and online learning environments, there are several additional strategies that need to be emphasized or that can be used in online environments to ensure learners have the best opportunity for knowledge acquisition. For example, both settings have lectures, assignments, assessments, projects and other similar learning experiences. But, due to the virtual aspect of online learning, perhaps certain instructional strategies need to be emphasized and expanded upon such as discussions, interactive opportunities and community building.

Fink's Theory of Significant Learning (2003), is a learning theory that is often used as the underlying andraogy in online course development. Fink describes significant learning as integrative, self-reflective, experiential and self-assessing. Significant

learning focuses on promoting growth of learner as a whole, not as discrete parts. This model includes several components: learning how to learn, foundation knowledge, application, integration, human dimension and caring. These components should be incorporated into online courses as a means of best practice. For example, a clear syllabus with course objectives, assignments and course description (Baghdadi, 2011; Fink, 2003) help to ensure students understand the course, the expectations and the assignments up front. Participation and opportunities for interaction are critical for student learning, especially in online environments (Fink, 2003). Participation in course lectures and discussions can impact learning and also provide significant opportunities for interaction (Fink, 2003; Majeski & Stover, 2007).

Many online courses begin with an orientation that introduces students to the course material, syllabus and learning management system. Bozarth, Chapman and LaMonica (2004), found that an orientation or induction process is helpful for students and can provide a clear picture of the level of commitment necessary for successful completion of the class. Although orientations can be helpful, Bozarth found that faculty want to have orientations for students, but that students don't necessarily want the orientation portion of the course (Bozarth, Chapman, & LaMonica, 2004). Orientation can also address the common technical issues that occur in online learning environments and help familiarize students with the learning management system (Motteram & Forrester, 2005). Often, students may come to an online program with limited technology skills. Assessing these skills in the orientation can head off many issues before the course begins (Bozarth et al., 2004).

Instructor behaviors also play a role in the best practices of online learners. When within their control, limiting class size to approximately 20 students is important for more meaningful interaction (Baghdadi, 2011; Bocchi et al., 2004; Kearsley, 2002). Consistent and timely feedback from instructors is also important to students (Baghdadi, 2011; Bocchi et al., 2004; Perry & Pilati, 2011).

Efficacy of online learning. As online learning has grown and become legitimized as a form of educational delivery, questions about its effectiveness remain. In their comprehensive report on online learning in higher education, Allen and Seaman (2010) report that students who took all or part of their course load online performed better than those taking traditional face-to-face courses. Blended instruction had a larger advantage over traditional face-to-face courses, which had a larger advantage over online only courses. Their findings suggest that perhaps blended courses allow for more convenience and flexibility for today's students, allowing them more time to apply to their coursework, which in turn improved their academic performance.

Strengths and weaknesses of online learning. As with traditional face-to-face instruction in classroom settings, online learning has its share of strengths and weaknesses. Song, Singleton, Hill & Koh (2004) found that students enroll in online courses for many reasons, including convenience and flexibility. Students reported that certain components of their online courses were helpful, such as: the intuitive user interfaces and the freedom to work independently and asynchronously. Perry and Pilati (2011) report that students who are generally more successful in online environments are likely to be more self-motivated than traditional students because they may have less interaction with their teachers and classmates and need to work more independently.

One weakness in online learning is faculty members perception and willingness to learn to teach in online environments (Allen & Seaman, 2010; Perry & Pilati, 2011). This may be a legitimate concern because according to Allen and Seaman's (2010) report, almost twenty percent of faculty surveyed reported that there is no specific training provided. There is also a perception that online degrees are not as prestigious as traditional degrees. Approximately 71% of faculty members surveyed perceived online degrees to be less prestigious than their traditional counterparts.

Another weakness in online learning is attrition. Postsecondary online program persistence rates are much lower than those from traditional face to face programs (Drouin & Vartanian, 2010; Huett, et al., 2008; Nagel, 2009; Park & Choi, 2009; Roblyer, et al., 2008; Simpson, 2004). Persistence is ten to twenty percent lower in undergraduate online courses than it is in traditional face-to-face courses. Carr (2000) reported that persistence rates in online learning courses are 10-20% higher in traditional face-to-face classrooms, with variation among graduate schools anywhere from 20% to 50%.

In multiple studies, students cite lack of sense of community and isolation as a weaknesses of online learning (Song, et al., 2004; Vonderwell, 2003; Woods, 2002). According to Song, et.al (2004), 71% of less satisfied students surveyed reported a lack of community as a weakness in their online courses. Additionally, students cited the following components of their online courses as weaknesses: lack of understanding goals and objectives, technical problems related to the online course, lack of immediate responses that would have occurred instantly in traditional face to face classrooms (Petrides, 2002).

Sense of Community within Online Learning Environments

The notion of *sense of community* goes back as far as 1978 with development of a sense of community scale by Doolittle and MacDonald, which focused on the community at large (McMillan & Chavis, 1986). Although the concept of a sense of community has been studied by various researchers, no one definition has been agreed upon. McMillan and Chavis (1986) developed a comprehensive definition of sense of community that included four categories: membership, influence, integration and fulfillment of needs, and shared emotional connection.

Dede (1996) states that in the classroom, it is required to have social and academic interactions to accomplish some learning goals. Rovai (2002b) adds that community building is important for online learning because sense of community attracts and keeps students, so teachers need to account for sense of community and help it thrive.

Rovai (2002a) believes that persistence rates will increase if educators help to improve student satisfaction. Creating a sense of community with in the online classroom is one way to do this. He further states that students need extra support making the jump from the traditional to the online classroom. Liu et al., (2007) believe that a strong sense of community in the classroom helps to keep students more engaged in their learning, leading to higher persistence rates. Rovai (2002a) defines classroom community as having "feelings of connectedness among community members and commonality of learning expectations and goals" (p.322). A classroom community can have a strong or weak sense of community. A classroom with a strong community is one where learners are connected with each other, communicate with each other, share values and help each

other. A classroom with a weak community has members that do not connect with each other, may be mistrustful and may exclude one another.

The Classroom Community Scale (CCS) is an instrument to measure classroom community (Rovai, 2002b). This instrument was developed to help educators measure the classroom community and make adjustments in their teaching in ways that would increase community, as well as aide instructional designers in the development of courses that promote said community. The CCS measures classroom community and two subscales: connectedness and learning. Connectedness includes feelings of belonging and cohesion. Learning in this sense refers to satisfying educational goals. The CCS was found to be a valid measure of classroom community (Rovai, 2002b). Both subscales for connectedness and learning showed high internal consistencies. Rovai intended for the CCS to be used by teachers as a way to measure the level of community in their classrooms. Depending on the level of community, teachers would then know to make instructional adjustments to increase the sense of community (Rovai, 2002b). However, no prescriptive suggestions for instructional experiences to increase sense of community were provided.

Several studies have been conducted using the CCS to measure sense of community, specifically studies comparing the differences in sense of community between online and face to face classes. Rovai et al., (2005) sought to determine whether or not there was a difference in sense of community between face to face courses and online courses. In this study of 279 students, 89% were female and 29% were male. They found that online students reported lower sense of community and felt less connected than the face-to-face students. Nontraditional students (students returning to school and

mostly older) reported stronger bonds within their courses than younger students. No differences in perceived learning were found between face to face and online courses (Rovai, et al., 2005). In a 2009 study, Exter, Korkmaz, Harlin and Bichelmeyer compared online students desire for community with traditional classroom students and found no significant differences in sense of community between online and face to face courses. Students in the face to face courses reported more interaction, while the majority of the online students reported a desire for sense of community. The effects of sense of community on students have also been studied. In Ouzts' (2006) study, the purpose was to measure the sense of community in online courses. The researcher found that students who reported low sense of community perceived the experience in these particular courses to be "miserable" (p. 292). However, when students reported a higher sense of community, their reports of perceived learning were higher than those reporting a low sense of community. Ouzts concluded that including an orientation to the online course and using experiences that support interaction and connection may help to increase the sense of community (Ouzts, 2006).

Sense of community may be impacted by interaction within an online course. Dawson (2006) studied undergraduate and graduate online students and found sense of community and communication interactions to be correlated. Students communicating more with their peers and instructors via email, forum posts and face to face interaction showed a higher sense of community than those with less interaction (Dawson, 2006).

Research shows that the types of interaction within an online course may contribute to sense of community. Drouin (2008) examined student-student, student-teacher interactions and their impact on sense of community. These interactions included

discussion threads and perceived interactions with other students and teachers. There was a correlation between sense of community and student-student interactions, but not between sense of community and student-teacher interactions. Drouin (2008) also found there to be no correlation between sense of community and achievement or sense of community and retention. The researcher concludes that increased student-student interaction will increase sense of community (Drouin, 2008).

Few studies in this area explicitly focus on a given type of online course or delivery such as synchronous, asynchronous and blended instruction. However, Rovai's (2002a) study focuses specifically on asynchronous online classrooms. He studied adult learners in online asynchronous courses and found that connectedness and learning were related to perceived student learning. Perceived student learning is measured via the learning subscale of the CCS and is based solely on student self-reporting, as opposed to other empirical data such as test scores and course grades. This study found no significant differences between connectedness and gender or connectedness and ethnicity.

In an effort to determine whether or not a sense of community matters, the following studies were conducted on students' desire for sense of community. Drouin and Vartanian (2010), conducted a study of 198 students to compare the desire for sense of community between face to face and online students. They found both similarities and differences between both groups. Both groups report low desire or need for sense of community. Half of the face to face students and one third of the online students reported desiring sense of community. More face to face students desire sense of community. There were demographic differences between the two groups. The online students tended to be older and worked full-time and desired less connectedness. The authors conclude

that their decreased desire for sense of community is because they are not necessarily looking for connections at school (Drouin & Vartanian, 2010). In comparing faculty and student perceptions of sense of community, Liu et al., (2007) found that there was a correlation between sense of community and perceived learning, perceived learning engagement and student satisfaction. Sense of community lowered the feelings or sense of alienation in students. The researchers conclude that it may be important to consider the development or building of communities in online courses. This can be done partially in the course design process (Liu, et al., 2007).

The literature has shown that sense of community is an important theoretical construct within the area of online learning (Dede, 1996; Rovai, 2002b). A strong classroom community can lead to satisfied, connected students, while a weak sense of community can lead to feelings of alienation and isolation, lower persistence rates, as well as student dissatisfaction (Liu, et al, 2007; Rovai, 2002b). Overall, a sense of community is an important factor in online learning.

Demographics and sense of community. Although several studies on sense of community have been completed, there are few, if any generalizations to be made with respect to sense of community and demographics, including gender and ethnicity. Rovai and Baker (2005), studied gender differences in online learning with respect to sense of community, perceived learning and interpersonal interactions. In their study of 162 females and 31 males, females reported higher sense of community and higher perceived learning than males. Rovai and Baker concluded that females felt more connected to each other than males, but acknowledge that such a large female to male ratio, female

domination of the discussion threads may have led to this stronger connection amongst females.

In another study by Rovai and Wighting (2005), conducted with 117 participants, 66% female and 35% male, 37% African-American, 60% Caucasian and 2% Hispanic, they found that African Americans felt alienated within virtual classrooms. The authors do state that the studies that try to show a correlation between alienation and ethnicity have inconsistent results and cannot be generalized (Rovai & Wighting, 2005).

Online Course Development

Proper design and development of online courses are important factors in their success or failure of the course. Evidence of the importance of course design is seen in Song, et al., (2004) study of student perceptions of online learning, 83% of participants rated course design as a component that contributes to a successful online learning environment. Course design was followed by comfort with online technology (78%), motivation (76%) and time management (75%). The top two components reside in the responsibility of the course development team.

There are many obstacles facing online course developers. These obstacles include student populations with diverse needs, limited research-based approaches, lack of trained online course developers to develop courses and resistance to organizational change within institutions (Huett et al., 2008). Huett, et al., (2008) state that although there are many studies comparing online efficacy to face to face classroom efficacy, there is a dire need for research comparing efficacy amongst various online models and a great need to determine the effectiveness of each. Additionally, many institutions are turning to online education as an additional option for students, with little investment in specialists

skilled in course design. Often times, the conversion of classes from traditional to face to face is usually done by face to face faculty instead of instructional designers (Huett, et al., 2008). This design solution may result in less engaging online content and less online pedagogical considerations. The final issue in online course designs that in addition to the paradigm shift to online courses in institutions, there is a great deal of organizational change occurring, suggesting that instructional designers be hired to aide in the conversion of face to face courses to online courses.

Decisions about which online course standards to use as a foundation for course development also exist (Sloan Consortium, 2004). Schools have many things to consider when developing courses such as student population needs, content, type of online courses to design and school culture. Furthermore, assessing quality of the courses developed is yet another important issue to consider (Chao, Saj, Hamilton, 2010; Middlehurst, 2001).

Online course development involves a number of specialists working together such as course developers and instructional designers. Course developers typically write the content for the course and have an expert knowledge in the specific content areas for which they are writing. Instructional designers develop learning experiences that will enable students to understand the content provided by the course developer, such as interactive games, videos, graphic organizers, all of which support the content. Parscal & Riemer (2010) believe in the pairing of both types of experts, course developers and instructional designers as a design solution. As with the development of traditional face to face courses, online course design needs to take into account several important factors including andragogy and the development of online courses. One of the most frequently

used frameworks in online learning is constructivism (Chitanana, 2012; Knabe, 2004). Constructivism is a teaching philosophy or andragogy that allows for and encourages learners to understand the content in their way and knowing that there are many ways to learn (Gulati, 2008). In the constructivist model, students are not treated as *vessels* waiting to be filled, but rather students attempting to understand the world and make meaning for themselves through active learning and engagement (Knabe, 2004). What does constructivism look like in an online classroom? Interaction amongst learners, educators and content, meaningful learning experiences, collaboration, engagement in authentic learning experiences, reflection and authentic assessment follow a constructivist andragogy (Chitanana, 2012). Interaction may come in the form of discussion, chat, email and collaboration on assignments (Chitanana, 2012). Course design taking these factors into consideration may not be so intuitive, as identified by Desai et al., (2009), there is a serious lack of understanding about how to appropriately use technology in education. In their study conducted to understand both student and faculty perceptions about online courses, they found that courses that were text based and offered little to no interaction with other students were less helpful than courses that were more interactive. This has important design implications for instructional designers and course developers. More interaction in online courses may mitigate feelings of isolation and loneliness experienced by some online learners. Students reported that one of the reasons to enroll in traditional face-to-face courses "was the intrinsic urge to become part of a community" (p. 125). Further, research by Ausburn (2004) shows that students prefer two-way communication and frequent announcements, notably via push notification that sends the announcements to student emails.

The process of designing effective online courses varies from institution to institution. As online learning continues to grow in popularity as a viable learning option, the level of discourse about its design to improve efficacy at the national level takes on new importance. Although there is not yet a national policy providing specific requirements for online course design, there are several organizations that offer guidelines in one form or another, such as the Sloan Consortium. The Sloan Consortium offers guidelines based on five pillars of quality online courses that include: faculty satisfaction, student satisfaction, learning effectiveness, scale, and access (Sloan Consortium, 2012). Increasingly, the use of frameworks and templates has been found to be effective (Swan, Matthews, Bogle, Boles, & Day, 2012).

Swan et al. (2012), conducted a study on the use of two separate frameworks used to design courses, Quality Matters (QM) and Community of Inquiry (CoI), as guides to the redesign of online courses. The QM framework is a peer-review process to ensure quality assurance for online courses. It consists of eight general standards with multiple sub indicators for each. The standards are: course overview, learner objectives, assessment and measurement, resources and materials, learner engagement, course technology, learner support, and accessibility. The courses have been re-designed with these standards in mind. Additionally, researchers applied the CoI framework to the re-design of the course. While the QM framework addresses course design, the CoI framework addresses the learning process from the constructivist point of view. The CoI uses the construct of presence as its foundation. In a course, there should be three presences: teaching presence, social presence and cognitive presence. These presences together are said to promote inquiry learning. Swan, et al. (2012), found that the

effectiveness of both frameworks in course design could not be measured, due to small sample sizes. However, grades in the course increased from an average of 90% to 93%, suggesting that use of these frameworks increased student learning. The researchers suggest further research using frameworks in course design and also believe that using QM for the first major course design or re-design and CoI for subsequent iterations, for incremental fine tuning that addresses the three presences (Swan et al., 2012).

Consideration for course design is very important for students, faculty and institutions. Taking into consideration specific design needs and using frameworks as design guides may increase the efficacy of course design (Swan et al., 2012). It is important to understand the design needs and existing obstacles to course design and more specifically, which online learning activities help to enhance opportunities for sense of community. With this knowledge, perhaps course developers can design more effective courses for students.

Summary of the Literature Review

The literature review provided an in depth look at the three main concepts behind this research study: the need to belong, online andragogy and best practices for course design and development. Together, these three theoretical constructs may help to demonstrate the importance of sense of community in the online classroom. Sense of community is an important construct in online learning because students often feel isolated and alone, which may contribute lower persistence rates in online courses than in traditional face to face courses (Liu et al., 2007), as well as less satisfied learners (Rovai, 2002a). By understanding the importance of sense of community within the online classroom and which learning experiences either contribute to or hinder the development

of the construct, course developers may be more likely to design and develop courses that that sense of community as its underlying foundation.

Although an instrument exists to measure sense of community within a course or program, there are no prescriptive suggestions outlining what to do with that information. What is not known is how to design blended online courses in such a way that opportunities for community development are embedded within the structure or framework of the course, nor which types of learning activities serve to enhance and detract from sense of community.

Chapter 3 Methods

The purpose of this chapter is to provide information about how this research study was conducted, including research design, research questions, data collection for the three-part online survey instrument, subject selection and recruitment, human subjects considerations, data collection, and data analysis.

Experiences, Beliefs and Assumptions of the Researcher

The philosophical worldview that shapes this study is the post positivist worldview. Cresswell (2009) describes a worldview as a foundation consisting of beliefs and assumptions about research. The post positivist worldview is the basis of this study because it assumes the researcher's need to identify and evaluate the cause of problems. As both an educator in traditional face to face settings and online settings of both children and adults, I have personally experienced the impact of sense of community on the dynamics of a group of students. My experience has led me to naturally seek to understand more about humans' innate need to belong and how that need can be satisfied within the online classroom environment. Traditionally, I have found it easier to gauge sense of community in face to face classrooms simply because I have the opportunity to read students' body language and interpret the mood and tone of the class, leading me to determine whether or not the group is close knit, acting as a community or whether there are islands of small groups or individuals in the class. As an online teacher, I have had a little more difficultly determining how much connection and community exists between students, because I lacked the ability to read their body language and felt more disconnected generally from the students. However, I was able to observe their interaction in discussions and virtual sessions, which gave me some insight. Rovai's

Classroom Community Scale (CCS) is an available tool for online teachers wishing to quantify an online class' sense of community. However, once the results are in, one is left wondering just what to do with the data. A post positivist worldview naturally pointed me in the direction of wondering what next? The post positivist worldview is in alignment with my desire to identify the learning experiences that increase sense of community within an online classroom and develop a set of best practices that will inform course developers as to the importance of including said activities into course design. Using the post positive view, leads me to question: How can a teacher use that information to his/her advantage? Just what activities and opportunities can a teacher provide in an online classroom that will contribute to elevating the sense of community? Are there activities and interactions that generally lower the sense of community?

I believe that a strong orientation session, preferably face to face or synchronous, can also help students to connect with each other, to understand what the course will be like, and to set the expectations and tone. Orientations may be able to lower the stress level of incoming students by clearing up any misconceptions about the course expectations and the technology used to participate in the course, which may lead to students' comfort and connection with each other through shared concerns and experiences.

I am certain that learning experiences that provide for student interaction, student engagement and a bit of freedom will increase sense of community. For example, providing opportunities for students in discussion threads can give them an opportunity to meet one another, share their viewpoints and get to know a little about the people in their

class, potentially leading to a stronger sense of community. Collaborative assignments may also help to build community, as they can in traditional classrooms.

Design

A quantitative research design was appropriate for this study to measure the level of sense of community in online courses, its importance to students, and learning opportunities that both increased and decreased the sense of community. By conducting this research, insights and best practices for online course developers may have been achieved. The post positivist worldview lends itself to quantitative research design, in that it is based in part on the identification of relationships between variables. In this case, where the sense of community will be measured against various learning experiences based on survey responses, numerical data will be collected and analyzed. According to Cresswell (2009), quantitative studies typically involve examining the relationship between variables and can be statistically analyzed. These studies usually employ the measurement of numbers via close-ended questions.

Research Questions

1. To what degree do experienced online learners feel a sense of community as measured by the Classroom Community Scale (CCS) within their online course or program?
2. To what degree do experienced online learners feel that a sense of community within their online course or program is important?
3. What types of learning experiences within an online course or program enhance an individual student's overall sense of community?

4. What types of learning experiences within an online course or program detract from a students' overall sense of community?
5. Are there differences in desire for sense of community across student demographics?

For purposes of this study, experienced online learners were defined as students who have completed a minimum of one online course. Learner experience levels were self-reported through the demographic portion of the survey.

Sources of Data

The setting for this study was within a single private university in southern California. The target population was masters and doctoral level graduate students within three graduate level blended online programs in the education department. The three programs were:

- Graduate Program 1 (MALT): This program was a cohort model blended online program with 85% of the instruction online and 15% of the instruction in person (Personal communication 03/26/13 Program Administrator). An emphasis was placed on learning and leadership in leading technology initiatives in organizations.
- Graduate Program 2 (EDLT): This program was a cohort model blended online program with 40% of the instruction online and 60% of the instruction in person (Personal communication 03/26/13 Program Administrator). The program started with a five day in person orientation to the program. An emphasis was placed on building student knowledge of emerging technologies, media and collaboration.

- Graduate Program 3 (EDOL GAP): This program was a cohort model blended online program with 40% of the instruction online and 60% of the instruction in person (Personal communication 03/26/13). An emphasis was placed on advancing leadership skills. This program was specifically designed to meet the needs of students across the globe.

These programs were delivered in a blended fashion, combining both face to face and online instruction, in cohort groups. The target population for this research project was currently enrolled graduate students registered in at least one course with an online component. To minimize effects of new learners to the online environment, potential subjects needed to have been active in the program for at least one term, as of Spring 2013, which will have given them, at minimum, experience in two courses with online components. All registered students enrolled in their second term or later were invited to participate in the study. The total population of all qualified, enrolled students was approximately ninety. The estimated sample size of qualified participants was approximately 90. This was a convenience sample, as these students came from a discrete set of graduate programs at this university, which indicated a willingness to participate.

Data Collection Strategies

An online survey was the means for data collection. Approval to approach the target population was obtained by permission from the Academic Dean of the department. Participants were be identified by the program coordinator, based on their enrollment in one of three online graduate level programs at the university, as described above. Each potential participant was contacted via an email that is sent from their learning management system, Sakai. These emails were sent via the learning

management system coordinator or other authorized employee of the university. In the email sent to the target population, an announcement described to participants the study and its purpose. They were offered information about the length of the survey and instructed further on how to participate (Appendix A). An informed consent statement was included in the email announcement. Participants wishing to participate indicated consent by clicking the survey link at the bottom of the email. Participation was voluntary and anonymous and did not impact their grades in any way.

Survey Monkey, an online survey tool, was used to conduct the survey (SurveyMonkey, 2012). Survey Monkey was chosen as the survey delivery system for the security measures taken to protect users. According to their website security statement, Survey Monkey protects users in a variety of ways. Users have a unique login so that others cannot see their entries, thus protecting their data online. Survey Monkey also has a fully staffed security team and digital surveillance at their server facility, preventing physical breaches. Their website does warn that transmission of data over the internet cannot be fully protected, but that there are measures in place for protection (SurveyMonkey, 2012). Participants took the survey and results were sent to the researcher directly from Survey Monkey in an anonymous fashion, protecting the identities of the participants. Participants needed access to the internet for completion of survey. The time period for data gathering time was approximately two weeks. On day one, the initial email announcement and invitation to participate was sent via email from within the learning management system, announcing that the survey would remain open for fourteen days. On approximately day seven, a reminder email was sent to the entire target population via the learning management system, announcing that the survey would

remain open for an additional seven days (Appendix B). On day fifteen, the survey was closed and no further access was allowed.

Instrument

The instrument for this research was an online survey. The survey consists of three sections. (see full survey in Appendix C). The first section of the survey was the Classroom Community Scale (CCS). The second section focused on the learning experiences that may or may not be utilized in the participants' online program with the purpose of determining respondent's perceptions of how each learning experience contributes to a sense of community. The third section of the online survey focused on participants' demographics and inclination towards community within their online program.

Classroom Community Scale (CCS). The CCS was developed by Rovai (2002b) in order to develop an instrument to determine the level of classroom community within an online course, as indicated by the subscales of perceived learning and connectedness. Rovai's (2002b) purpose of determining the level of community was to enable the teachers of online courses to test the level of community and make instructional decisions that would either increase the level of community or maintain it. Permission to use the instrument in this research was obtained from the author. (Appendix D).

The CCS is a 20 item scale built upon characteristics of sense of community. Rovai explains:

> Connectedness represents the feelings of the community of students regarding their connectedness, cohesion, spirit, trust, and interdependence. Learning represents the feelings of community members regarding interaction with each other as they pursue the construction of understanding and the degree to which members share values. (2002b, p. 206)

The CCS measures the sense of connectedness and perceived learning. Respondents rate their level of agreement to each item using a 5-point scale. Items are coded using either a positive or negative scoring scheme depending on the nature of the item. An overall CCS score is calculated and can range from a minimum score of 0 and maximum score of 40. The higher the CCS score, the higher the sense of community. Two subscale scores are also calculated; Connectedness Score and Learning Score. Each subscale score can range from 0 to 20 with a higher score reflecting a stronger sense of connectedness or learning.

Rovai (2002b) developed and analyzed the instrument items using a panel of experts and established instrument validity through factor analyses procedures (2002b). Following, two internal consistency procedures were used to establish the instrument's reliability. Chronbach's coefficient for the full CSS was .93 and a split-half coefficient of .91 demonstrated strong reliability. To confirm reliability of the two subscales, Chronbach coefficients were .92 for the connectedness subscale and .87 for the learning subscale (Rovai, 2002b).

The instrument was validated using only 375 participants on one population, which raised the concern about the tools' validity and reliability for this current research. An exploratory factor analysis was conducted to re-examine the 20 items and confirm how the items loaded on the two factors and also analysis to ensure reliability of the subscales. A detailed report of the analyses is contained in Appendix E. The outcome of the analyses resulted in a shorter CCS instrument and reliability coefficients for the sub-scales consistent with the original instruments' development. Although the shorter CCS version could still generate the overall CCS score as well as reliable sub-scale scores, the

loss of items lessened the depth of discussion through an item analysis. For this reason, findings involving the CCS are reported using Rovai's original 20-item instrument.

Learning activities. The second section of the survey focused on the learning activities that may or may not be utilized in the participants' online program, and asked respondents to rate whether the activity enhanced their sense of community. The coding for each item ranged from strongly enhances to strongly detracts from. Additionally, questions were asked to ascertain the frequency of use for each learning activity used within their program.

Participant demographics. The third section of the survey focused on participants' demographics and inclination towards community by asking several questions regarding their desire for a sense of community within their online program. Participants were asked to check boxes indicating their gender, age group, and program.

Online survey validity. In order to establish content validity for sections two and three, a group of four experts in the area of online learning and familiarity with online survey tools was convened to review the items for content and clarity. The panel of experts collaboratively developed a list of all potential learning activities that are used within online classrooms.

Pilot test of survey instrument. To ensure that the complete survey was reliable for the targeted population a pilot test was conducted through SurveyMonkey. Three experienced college online students participated in the pilot test. The main goal of the pilot was to ensure that the electronically formatted survey on SurveyMonkey was functional. They each completed the survey within SurveyMonkey and their participation provided information to the researcher about the proper functionality of the survey within

that online context. Any issues with the functionality of the survey or reporting of results were addressed by the researcher prior to launching the main study.

Human Subjects Considerations

Precautions were taken to minimize any risks to the study participants. As the survey process provided for individual anonymity, there was a perceived minimal risk involved in completing this survey. Estimated time to complete the survey was approximately 15 minutes and none of the content requested posed threats to emotional or social stress. The greatest perceived risk to a participant was that their identity may be revealed or that their responses or willingness to participate would influence their course grade. By contacting students via their learning management courses, in Sakai, the researcher did not have any access to participant identification nor did the faculty teaching the associated courses have access to survey response data or even know whether the currently enrolled students chose to participate. The researcher received anonymous response results for each survey item.

Potential participants were informed that there were several benefits to this research that may directly impact them. As the participants were enrolled in online graduate programs, this research was meant to inform course developers as to how to design courses that promote sense of community, a known factor in student persistence, perceived learning and satisfaction. Additionally, participation in this study may have enlightened students as to the quality of their current learning environments. Finally, participants may have benefited by informing researchers about best practices through their answers involving sense of community and learning experiences in the online environment.

Participation was voluntary and did not affect the participant's grade in any way. Informed consent was achieved through the initial Sakai course announcement inviting students to participate. In the email delivered via the Sakai course, the researcher explained the following:

1. The purpose of the study was to determine the sense of community in their online classroom and to inform course developers of best practices with regard to designing and developing effective courses that promote sense of community.
2. The duration of the survey was to be approximately 15 minutes.
3. There were very minimal perceived risks associated with participation in this study. Their choice of participating would not be known to their course instructor nor would any of their responses have identifying information even to the researcher. Participation or lack of participation would not affect any grade in any of their courses. The survey items were straight forward and focus on their individual perceptions about online course activities with no anticipated emotional or social discomfort.
4. The benefits that may be gained from participation are: helping improve the quality of online courses with respect to sense of community, gaining a better understanding or appreciation for the variety of learning opportunities in their online programs.
5. Finally, anonymity was to be strictly maintained by the university and the researcher. No one will have access to student information, including student contact information, as all contact by researcher is done through Sakai course

announcements. All anonymous survey responses will be sent to the researcher directly from SurveyMonkey, ensuring complete privacy.

Potential participants were advised of how to contact the researcher if they had questions or concerns about the study. If they chose to participate, a link to the survey was provided. Potential participants were asked to either agree or disagree to the above list of informed consent information. If they agreed to the informed consent, they were instructed to click the button for the survey and begin. If they disagreed with the informed consent, they were thanked and via survey logic, were sent to a disqualification page. Those in disagreement with the informed consent were not able to participate in the study.

This research qualified as being Exempt based upon 45cf4.46.101 (b)(2). This research was exempt because responses were completely anonymous and could not identify respondents in any way. The responses, if they were to be released accidentally, would not subject participants to potential civil or criminal liability. Finally, the questions did not address participants' mental well being, attitudes and perceptions of a sexual nature, or other sensitive subjects. An application for Exempt status was submitted to the University GPS-IRB and approved (Appendix F).

Analysis

A number of statistical methods were used to analyze survey results. Descriptive responses of the responding subjects were reported and graphically displayed. The statistical analysis focused on the use of frequency distribution and measures of central tendency for the CCS data. To explain differences in results based on sub-groups, cross-tabulations were created.

The one open-ended question received textual analysis to arrive at topics and themes. Thematic analysis involves developing a framework from which to analyze and compare qualitative data collected through open-ended questions (Bryman, 2008). Each answer was read by the researcher and coded into themes. Themes included suggestions for improving sense of community, expression of feelings towards online learning or even a brief comment about the survey itself. Once all open ended responses were coded, the researcher convened a panel of two experts in online learning to repeat the process and effectively validate the themes of the open ended question responses.

Chapter 4 Results

This chapter presents statistical findings that examined the level of sense of community in blended online courses, its importance and learning activities that both increased and decreased the sense of community and the degree to which subjects desire a sense of community. The research questions that guided those findings are:

1. To what degree do experienced online learners feel a sense of community as measured by the Classroom Community Scale (CCS) within their online course or program?
2. To what degree do experienced online learners feel that a sense of community within their online course or program is important?
3. What types of learning activities within an online course or program enhance an individual student's overall sense of community?
4. What types of learning activities within an online course or program detract from a students' overall sense of community?
5. Are there differences in desire for sense of community across student demographics?

The online survey had three main sections consisting of the Classroom Community Scale (CCS), learning activities and demographics, which included items designed to measure subjects' inclination towards community in their online program. This chapter presents a description of the survey results, beginning with the description of the study subjects and the overall data and continues with a presentation of the survey results as they relate to each research question.

Description of Study Sample and Subjects

A convenience sampling method was used to identify survey subjects. Subjects were required to be currently enrolled in one of three Masters or Doctoral programs at a private university in Southern California. Subjects were in at least their second semester of their current program,, in order to minimize measurement errors relating to lack of experience with blended online learning. Using these criteria, an invitation to participate in the study was sent to a total of 90 students, in three graduate programs, as an email, through their online learning management system (Appendix A). The three graduate programs included two doctoral programs and one master's program. A reminder email requesting participation was sent via the online learning management system to the exact same group of students one week after the initial email invitation was sent (Appendix B). Three weeks after the initial email invitation was sent, the survey was closed. Of the 44 subjects who began the survey, one declined to consent to the conditions of the informed consent and was automatically denied access to the survey. Forty-three subjects did agree to the informed consent and completed the survey. The response rate for the online survey was 47%, which is comparable to Cobanoglu, Warde & Moreo's (2001) findings that web-based survey responses average 44%, compared to 26% for surveys delivered via mail and 17% via fax.

Subject Demographics

Demographic information and inclination towards community were gathered as part of the online survey process. As shown in Figure 2, there were almost twice as many female as male subjects. The vast majority of the subjects reported being in the 30-45 age group. The second largest age group was 46-65, while the smallest number of subjects

was in the age group of 20-29 (Figure 3). Almost half of the subjects were enrolled in the ELDT program. The percentage of students from the MALT OR ELT program and the EDOL GAP program was roughly equal, at 25% and 30%, respectively. Although the percentage of MALT or ELT student participation is the lowest, this group participated in greater numbers, when comparing target population enrollment numbers in each program (Figure 4).

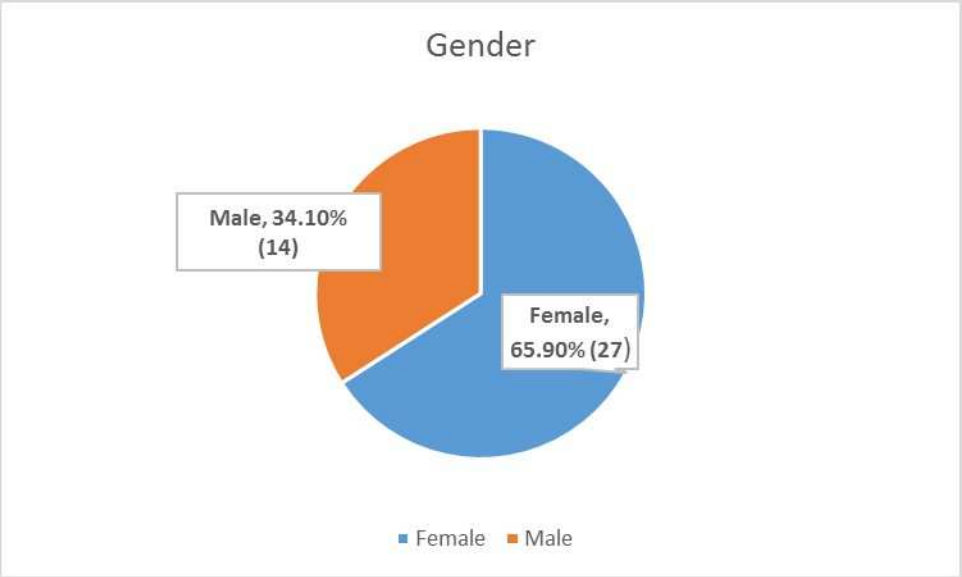

Figure 2. Frequency distribution of gender (*N*=41)

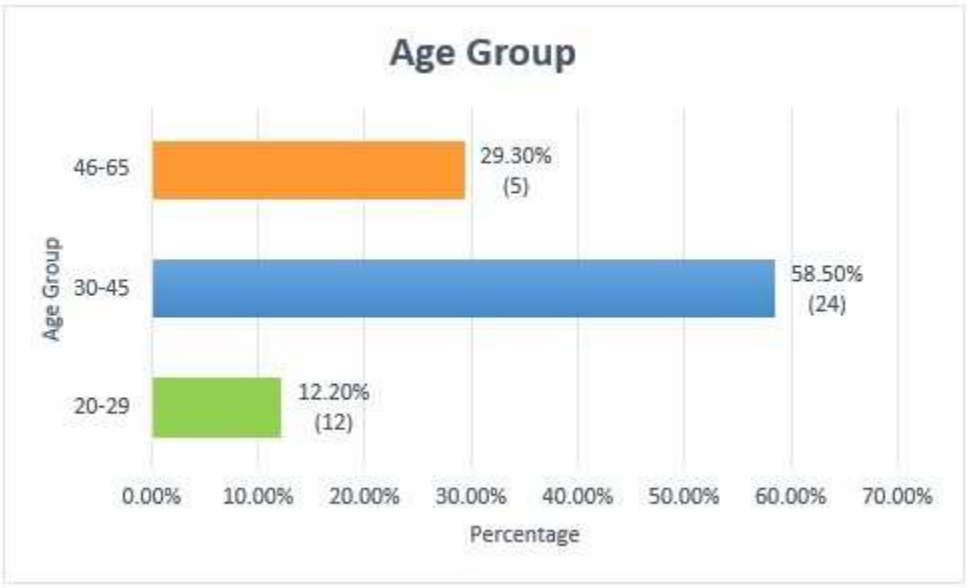

Figure 3. Frequency distribution of age group (*N*=41)

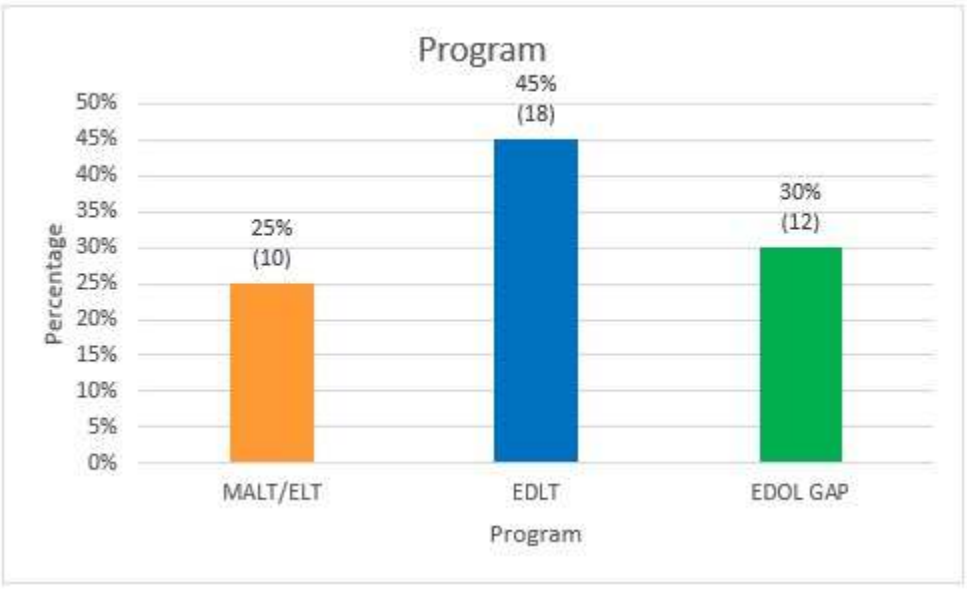

Figure 4. Frequency distribution of program enrollment (*N*=40)

As an additional way to determine student level of experience as an online blended student, subjects were asked to rate their level of experience on a four-point scale, from experienced to inexperienced (Figure 5). Approximately 80% of subjects reported that they were either experienced or somewhat experienced. About 20% of

subjects rated themselves as somewhat inexperienced or inexperienced. These responses are based on subject self-perception of experience level and while approximately 80% feel experienced, it is interesting to note that roughly 20% of subjects rated themselves as some level of inexperienced, especially after at least one semester of blended online experience. We do not know why the subjects rated themselves as having some degree of inexperience, but there may be several reasons for this rating. Perhaps some subjects use technology as little as possible, due to lack of experience and feelings of insecurity over their level of technology competence. Perhaps there is a spectrum in which the online portion of the courses is being used, with some professors using the online portion robustly and others using the online portion of the course solely as a learning repository. For example, students may experience synchronous virtual sessions and other learning activities within the online portion of their course, while others may simply be required to do simple tasks such as upload documents or obtain assignment information from the learning management system, thus having less opportunity for proficiency and comfort in the online portion of a blended course. Finally, this self-rating as inexperienced could also be that they compared themselves to fellow students and not to an objective standard.

Prior to enrolling in the current blended learning program, 72% of subjects had not participated in blended online learning very often or at all. Approximately 30% of subjects had participated in online blended learning often or very often (Figure 6). These numbers may well represent the blended online learning experience gain after at least one semester of enrollment, as expected, showing that subjects are feeling more experienced in this area.

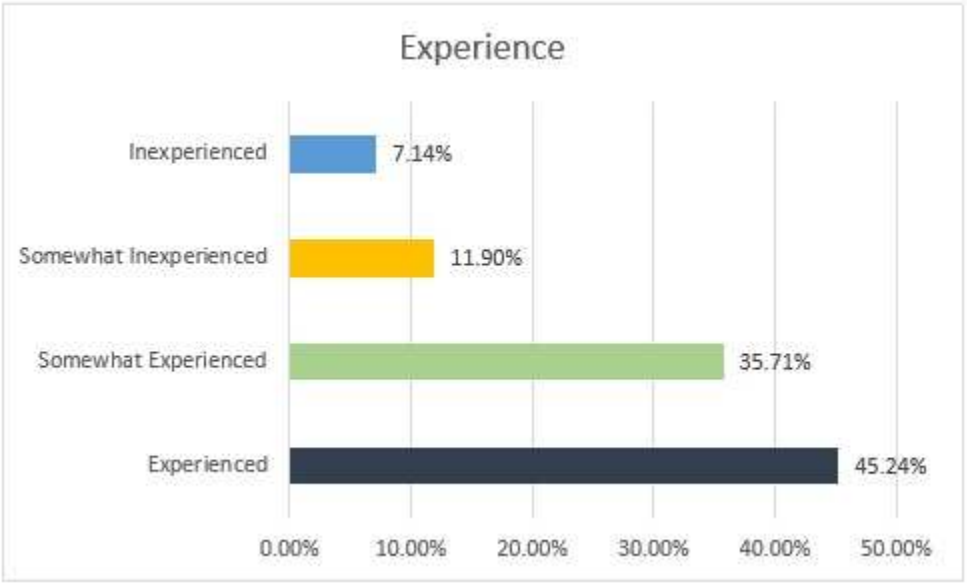

Figure 5. Frequency distribution of level of blended learning experience (*N*= 42)

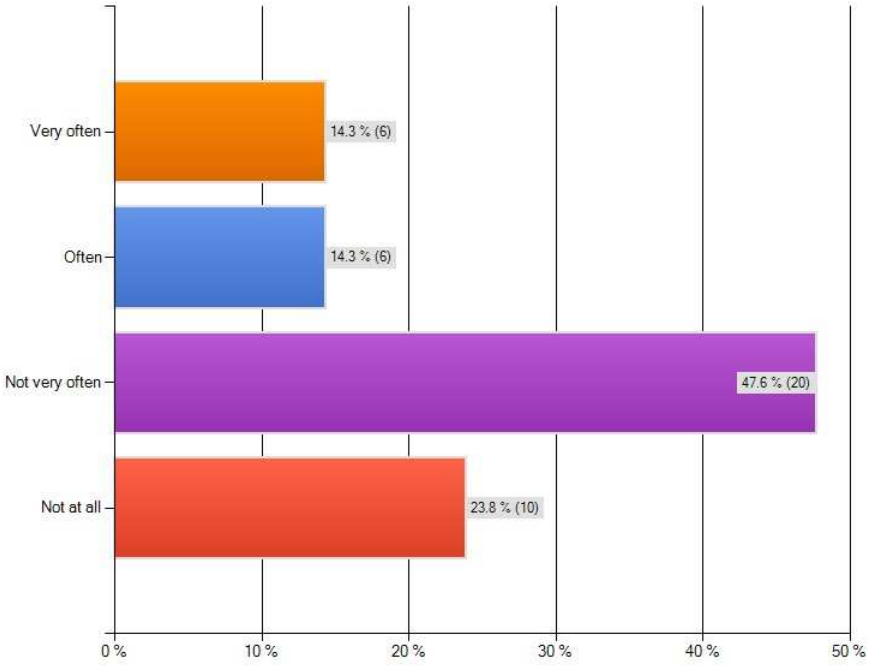

Figure 6. Frequency distribution on blended learning participation (*N*=42)

Level of Sense of Community as Measured by the CCS

Research question 1 asks, to what degree do experienced online learners feel a sense of community, as measured by the Classroom Community Scale (CCS), within their online course or program? The 20 items on the CCS, provide an overall score as well as two subscale scores. The higher the overall score or subscale score, the stronger the sense of community is. In addition, items are coded and scored in a way that either provides a response that reports the item as being something that *enhances* a sense of community or in a way that reports the item as being a *detractor* of sense of community.

CCS scores.

Table 1.

CCS Overall and Subscale Scores.

	Average	**SD**	**Min**	**Max**
CCS Overall	30.33	4.98	17.5	40
Subscales	**Average**	**SD**	**Min**	**Max**
Connectedness	13.90	2.61	6	18
Learning	13.17	2.37	7.5	18

The overall CCS scores had an average of 30.33 with a maximum of 40, with a SD of 4.98. Both subscales of connectedness and learning had very comparable averages and SDs, with connectedness having a slightly higher degree of variance (2.61) than learning (2.37).

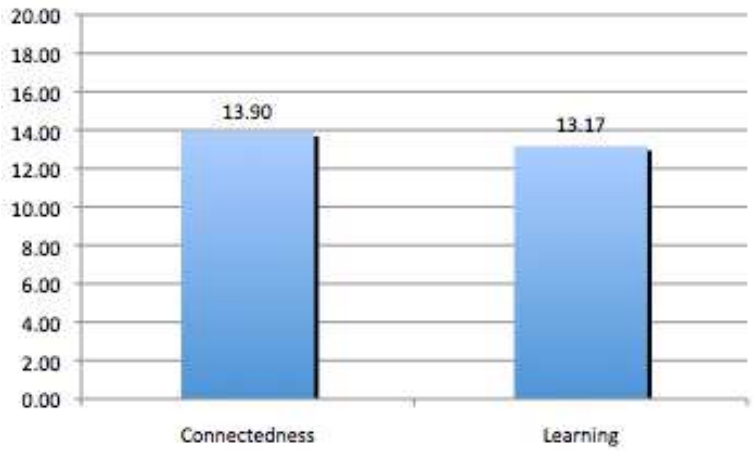

Figure 7. CCS subscale scores

This figure shows the averages of the connectedness and learning subscales of the CCS. While both subscales had almost equal averages, connectedness scored slightly higher in enhancement of sense of community (13.90) than learning (13.17).

CCS enhancers. Of 10 items used to determine enhancement of sense of community, 7 items had over 86% strong agreement rated as an enhancer of sense of community (Table 2). One item was in 100% agreement, *I feel that students in this program care about each other*. Three items had agreement in the 90-99% range. Three items had agreement in the 80-89% range. Overall, 86% or more students felt cared for, encouraged, connected, trust, rely on others, supported and given opportunities to learn. Seventy-two percent of subjects said that the program is like a *family*. Although 72% is a fairly high percentage of subjects indicating agreement to feeling like a *family*, it falls into a more moderate range, looking at the results of these 10 questions. This may be due in part because students may be connecting on school related topics, while the term *family* may imply a different type of emotional connection involving topics that are more personal and outside of the school realm. This type of relating may well be occurring within the programs but perhaps in smaller groups of students, such as in dyads, rather

than as a total cohort. Two items had low agreement of 43% and 56%. The item, *I feel that I received timely feedback*, with 43% agreement, 29% neutral and 29% disagreement. This item specifically deals with faculty, which is beyond student control. In addition, this question relates to faculty responsiveness, as opposed to peer responsiveness. The item *I feel others depend on me* had a relatively low agreement rate as an enhancement of 56% and a high neutral rate of 31%, perhaps due to the notion that it would be hard to measure others' dependence on an individual, as dependence can be expressed in a number of ways.

Table 2.

Frequency Distributions for the CCS Enhancers

Item	**Strongly Agree**	**Agree**	In Agreement	**Neutral**
I feel that students in this program care about each other.	57%	43%	100%	0%
I feel that I am encouraged to ask questions.	62%	24%	86%	10%
I feel connected to others in this program.	57%	36%	93%	5%
I feel that I received timely feedback.	7%	36%	43%	29%
I feel that this program is like a family.	31%	41%	72%	26%
I trust others in this program.	31%	60%	91%	10%
I feel that I can rely on others in this program.	43%	45%	88%	10%

(continued)

Item	Strongly Agree	Agree	In Agreement	Neutral
I feel that members of this program depend on me.	23%	33%	56%	31%
I feel that I am given ample opportunities to learn.	43%	52%	95%	5%
I feel confident that others will support me.	38%	48%	86%	12%

(N=43)

CCS detractors. Generally speaking, this set of questions related to detracting from sense of community resulted in overall lower percentages of subjects either disagreeing or strongly disagreeing, with higher percentages of subjects in agreement. Three items were in the 90-97% range of disagreement, 2 items were in the 80-89% range, one item was 75% and 4 items were in the 60-69% range of disagreement (Table 3).

The three items with the highest percentages of disagreement were: *I do not feel a spirit of community* (95%), *I feel that other students do not help me learn* (90%), I feel this program does not promote a desire to learn (97%). Over 90% of subjects feel a spirit of community, feel that other students help them learn and feel that the program promotes a desire to learn. The two items that scored in the 80-89% range of disagreement feel that their educational needs are being met and that the program results in more than modest learning.

The four lowest percentages of disagreement were for the items: *I feel that it is hard to get help when I have a question* (64%), *I feel uneasy exposing gaps in my understanding* (62%), *I feel reluctant to speak openly* (67%) and "I feel uncertain about

others in this program" (57%). Subjects are in more agreement with these items, which may indicate an underlying feeling of being unsure about others and how one may be judged when speaking up or in a group setting. There were four neutrals that stood out due to their relatively higher percentages within the 19%-26% range. The 4 highest percentages of neutral responses correlate exactly with the four lowest percentage items of disagreement. These 4 items have common characteristics of involving the need for students to speak up and ask for help, exposing gaps in understanding and being unsure about others in the program and how one might be judged.

Table 3.

Frequency Distributions of the Classroom Community Scale Detractors

Item	Neutral	Total in Disagreement	Disagree	Strongly Disagree
I feel that it is hard to get help when I have a question.	19%	64%	45%	24%
I do not feel a spirit of community.	10%	95%	40%	45%
I feel uneasy exposing gaps in my understanding.	24%	62%	50%	12%
I feel isolated in this program.	12%	75%	46%	29%
I feel reluctant to speak openly.	19%	67%	36%	31%
I feel that this program results in only modest learning.	12%	84%	67%	17%
I feel that other students do not help me learn.	5%	90%	45%	45%
I feel uncertain about others in this program.	26%	57%	43%	14%
I feel that my educational needs are not being met.	10%	86%	67%	19%
I feel that this program does not promote a desire to learn.	2%	97%	57%	40%

(N=43)

Reasons for Desire of Sense of Community

Research Question 5 sought to answer, "Are there differences in desire for sense of community based on student demographics?" Three items were utilized to answer the question.

1. If you desire a sense of community in an online program, is it to help you learn?
2. If you desire a sense of community in an online program, is it so that you can connect with others?
3. If you desire a sense of community in an online program, is it to help you learn and to connect with others?

A frequency distribution analysis was conducted to examine levels of responses to these three items. Of 43 subjects, 38 to 40 people responded that community was indeed desired in order to connect and learn (Table 4).

Table 4.
Reasons for Subjects Who Value a Sense of Community

Reasons	**n***
Sense of community helps me learn	38
Sense of community is desired for connection to others	38
Sense of community provides both the ability to connect and to learn	40

(N=43*) Note*: Number of subjects saying "yes."

Table 5.

Gender Differences in Reasons for Valuing a Sense of Community

Reason Subjects Desire Sense of Community	**Male N=14**		**Female N=27**	
	n	**%**	**n**	**%**
For Learning	14	100%	24	89%
For Connecting	14	100%	24	89%
For Both Learning and Connecting	14	100%	25	93%*

**Note*: One subject indicating yes did not indicate gender.

There were gender differences noted for the reason for valuing a sense of community for all three reasons (Table 5). For learning, 100% of males were in agreement that they valued a sense of community for learning, while 89% of females were in agreement. For connecting, 100% of males were in agreement, while 89% of females were in agreement. For both learning and connecting, males again were in 100% agreement, while females were in 93% agreement, up from their agreement rates for learning and connecting when measured separately.

Table 6. *Age Group Differences in Reason for Valuing a Sense of Community*

Reason Subjects Desire Sense of Community	**20-29 N=5***		**30-45 N=24***		**46-65 N=12***	
	n	**%**	**n**	**%**	**n**	**%**
For Learning	5	100%	21	88%	11	92%
For Connecting	4	80%	22	92%	11	92%
For Both Learning and Connecting	4	80%	22	92%	12	100%

**Note*: One subject responding yes did not indicate age group.

There were some differences by age group with regard to why subjects valued a sense of community (Table 6). For learning, 100% of 20-29 year olds reported that they desire sense of community for learning, while age groups 30-45 and 46-65 were in less

agreement with 88% and 92% agreement, respectively. For connecting, subjects from the 20-29 year age group had the lowest rate of agreement at 80%, with the remaining age groups in 92% agreement. For both learning and connecting, the 20-29 year old group had the lowest level of agreement (80%), with 30-45 year olds 92% agreement and 46-65 year olds in 100% agreement that they value sense of community for both learning and connecting. The 20-29 year olds most value sense of community for learning and the middle age group 30-40 is relatively stable across the three reasons.

Table 7. *Program Differences in Reason for Valuing a Sense of Community*

Reason Subjects Desire Sense of Community	**MALT/ELT N=10**		**EDLT N=18**		**EDOL GAP N=12**	
	n	**%**	**n**	**%**	**n**	**%**
For Learning	10	100%	16	89%	10	83%
For Connecting	10	100%	15	83%	11	92%
For Both Learning and Connecting	10	100%	16	89%	12	100%

**Note*: Two subjects did not indicate program.

There were also some differences within program (Table 7). MALT/ELT subjects were in 100% agreement for all three reasons for valuing community; learning, connecting, both. ELDT and EDOL GAP were in less agreement for learning, connecting and both, than the MALT/ELT group, with the one exception of EDOL GAP group in 100% agreement that they value sense of community for both learning and connecting. EDLT has overall lower levels of agreement for all three reasons than the remaining two groups.

Importance of Sense of Community

Research Question 2 sought to determine "To what degree do experienced online learners feel that a sense of community within their online course or program is

important?" A question related to, but separate from the CCS was included in the instrument to determine the importance of sense of community in their program. To examine the importance of sense of community within an online course or program, central tendency and dispersion were examined using a mean and SD. Table 8 presents descriptive statistics including minimum rating, maximum rating, mean, and SD.

Table 8.

Ratings for Degree of Importance of Sense of Community

	Minimum	Maximum	Mean Rating	SD
Degree of Importance	2	5	4.69	.89

(N= 43*) Note*. SD = Standard Deviation

Respondents rated the level of importance from a 1 *not at all* to a 5 *very important*. With a mean of 4.69, study subjects placed a high level of importance on sense of community.

In addition, a frequency analysis was conducted to examine the responses by degree of importance. Table 9 presents frequency and percentage of each choice given in this item. Overall, 79% of subjects rated the sense of community as important. Almost 20% responded neutrally to this question, with 2.3% responding that sense of community is not important. The high neutral score implies that approximately 20% of subjects do not have a strong opinion either way.

Table 9.

Frequency and Percentage of Importance of Sense of Community

	Frequency	Percentage
Very Important	32	76.2%
Important	8	19.0%
Somewhat Important	1	2.3%

Neither Important or Unimportant	1	2.3%
Not at All Important	0	0.00%

(N= 42)

Learning Activities that Enhance or Detract from Sense of Community

Research Questions 3 and 4 seek to answer, "What types of learning activities within an online course or program enhance or detract from an individual student's overall sense of community?" The learning activities portion of the survey consisted of 17 items used to assess each type of learning activity as either an activity that enhances or detracts from a sense of community within the program.

To present the activities, Table 10 below rank orders the activities based on the percentage of subjects that either agreed or strongly agreed that the activity enhances the sense of community..

Table 10.

Assessment of Learning Activities as Enhancers or Detractors to Sense of Community

Learning Activity	Enhances	Detracts
Participating in face to face orientation before the program began	100%	0%
Participating in a collaborative project.	100%	0%
Participating in synchronous virtual sessions – students participate in real time	95%	2%
Participating in a group presentation.	90%	0%
Reading course materials	72%	2%
Peer reviewing assignments	69%	5%
Conducting an individual presentation	69%	2%

(continued)

Learning Activity	Enhances	Detracts
Writing Assignment	68%	7%
Completing an individual project	67%	5%
Participating in asynchronous discussion-students participate in discussions, but not in real time.	62%	15%
Participating in asynchronous discussion with push out notification- students are notified electronically when others add to the discussion.	57%	7%
Participation in class wiki	41%	9%
Listening to a recorded virtual session.	39%	5%
Participation in virtual faculty office hours.	36%	0%
Participating in online assessment	34%	5%
Completing an online orientation before the program began.	33%	2%
Completing a poll or survey.	22%	7%

Four of the learning activities had high agreement among the subjects for being an activity that served to enhance the sense of community (table 10); *participating in a collaborative project* (100%), *participating in a face to face orientation before the program began* (100%), *participating in synchronous virtual sessions* (95%) and *participating in a group presentation* (90%). All four of these learning activities require a high degree of synchronous collaboration. During these synchronous collaborative activities, subjects have more opportunity to connect with each other or feel more connected to each other, raising the level of sense of community.

The next group of learning activities had from 39% to-72% of subjects stating that said activities enhanced the sense of community. Each of these learning activities involve solo work in an asynchronous environment, even though the activity contributes to a connection with others, such as the *asynchronous discussions* (57% & 62%), *peer reviewing assignments* (69%) or *participating in a class wiki* (41%). Traditional

individual activities such as *reading course materials* (72%), *completing individual assignments, presentations or projects* (67%, 68% & 69%) or *listening to a recorded session* (39%) all are accomplished individually by the learner.

Finally, the learning activities rated as enhancing a sense of community by the smallest percentage of subjects (22% to 36%), represented a mixture of activities two of which involved faculty engagement. *Participating in virtual office hours* (36%) is actually both synchronous and collaborative as well as *participating in an online orientation* (33%). A professor in an online virtual classroom usually holds virtual office hours. Generally, a professor is available for a specific time period to answer any questions students may have. These sessions can be very helpful both in increasing student comprehension of content and connecting with other students. Meanwhile, students who are waiting often connect with each other by using the virtual classroom instant messaging. The low percentage of subjects rating this as being an enhancing activity may be the result of two issues. First, subjects may have had little or no experience with virtual office hours, leading to a lack of understanding about the potentially enhancing aspects. Second, students may simply consider interaction with professor as unrelated to sense of community. Subjects may understand sense of community to involve peers, not professors. The two remaining learning activities with a small percentage of the subjects rating them as being enhancing were associated with assessment of learning; *participating in an online assessment* (34%) and *polling* (22%).

Figure 8 shows the frequency distribution of the most utilized learning activities. The six most utilized learning activities are *reading course materials* (91%), *participating in synchronous virtual sessions* (88%), *participating in a collaborative*

project (86%), *participating in asynchronous discussions* (83%), *writing assignment* (79%) and *participating in a group presentation* (71%).

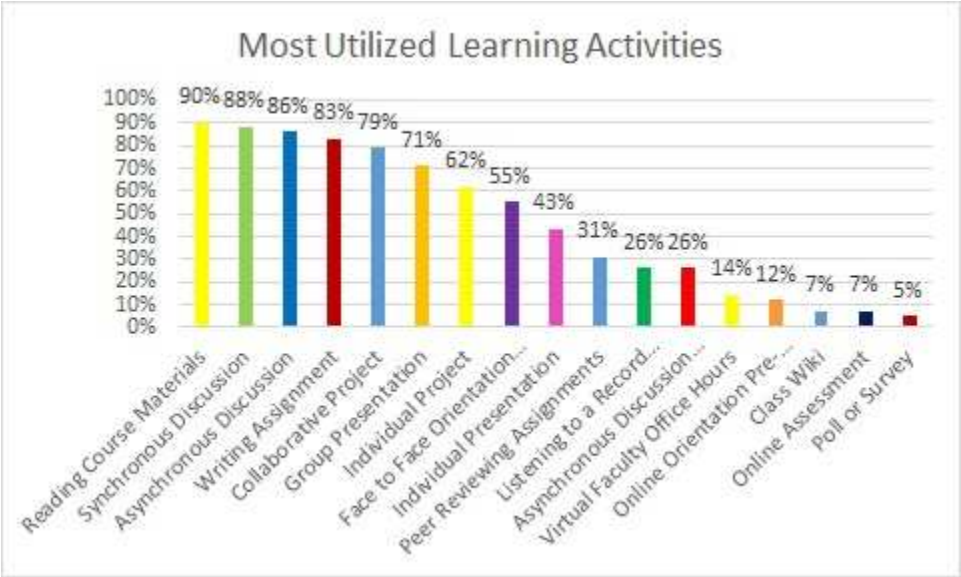

Figure 8. Most utililized learning activities in rank order (*N*=42)

Table 11

Learning Activities Rated as Most Enhancing by Rank Order and Highest Utilized

Learning Activity	**Enhances Total**	**Most Utilized**
Participating in face to face orientation before the program began	100%	55%
Participating in a collaborative project.	100%	86%
Participating in synchronous virtual sessions – students participate in real time	95%	88%
Participating in a group presentation.	90%	71%
Reading course materials	72%	91%
Conducting an individual presentation	69%	43%
Peer reviewing assignments	69%	31%
Writing Assignment	68%	79%
Completing an individual project	67%	62%

Participating in asynchronous discussion-students participate in discussions, but not in real time.	62%	83%

(continued)

Learning Activity	**Enhances Total**	**Most Utilized**
Participating in asynchronous discussion with push out notification- students are notified electronically when others add to the discussion.	57%	26%
Participation in class wiki	41%	7%
Listening to a recorded virtual session.	39%	26%
Participating in virtual faculty office hours.	36%	14%
Participating in online assessment	34%	7%
Completing an online orientation before the program began.	33%	12%
Completing a poll or survey.	22%	5%

Of the highest ranking learning activities that enhance sense of community, (Table 11) the top four activities are utilized in varying degrees. *Participation in collaborative group projects* (100%, 55%) and *participating in synchronous virtual sessions* (95%, 88%) are ranked highly as enhancing sense of community, but they are utilized within the three blended online programs to varying degrees. While *synchronous virtual sessions* are both highly rated as enhancing sense of community and highly utilized, *collaborative group projects* are highly rated as enhancing community, but utilized about 50% of the time. However, *pre-program face to face orientation* (100%) were rated as being utilized 55% and they are one of the top learning activities that can enhance sense of community. *Group presentations* (90%, 71%) are also high ranking and utilized often, helping to enhance a sense of community.

Several learning activities are highly utilized, but have lower value in terms of enhancing sense of community. *Reading course materials* (91%), *writing assignments (79%), asynchronous discussions (83%) and individual group projects* (62%) are highly utilized and rated between 62%-91%, but they are not rated as providing much enhancement to sense of community.

Extent of agreement regarding learning activities. Of the learning activities that enhance learning activities, there was high agreement among subjects for three learning activities that strongly enhance sense of community (Table 12). *Participating in face to face orientation before the program began* (86%), *participating in a collaborative project* (67%) and *participating in synchronous virtual sessions* (52%) are all highly collaborative and synchronous learning activities that inherently provide opportunities to enhance sense of community. Only one learning activity had a relatively high rate of agreement for enhances, *reading course materials* (62%).

Table 12.

Frequency Distributions for Learning Activities with Enhanced Responses

Learning Activity	**Enhances Total**	**Strongly Enhances**	**Enhances**
Participating in face to face orientation before the program began	100%	86%	14%
Participating in a collaborative project.	100%	67%	33%
Participating in synchronous virtual sessions – students participate in real time	95%	52%	43%
Participating in a group presentation.	90%	45%	45%
Reading course materials	72%	10%	62%
Conducting an individual presentation	69%	19%	50%
Peer reviewing assignments	69%	19%	50%
Writing Assignment	68%	17%	51%
Completing an individual project	67%	24%	43%
Participating in asynchronous discussion-students participate in discussions, but not in real time.	62%	14%	48%

Participating in asynchronous discussion with push out notification- students are notified electronically when others add to the discussion.	57%	5%	52%

(continued)

Learning Activity	**Enhances Total**	**Strongly Enhances**	**Enhances**
Participation in class wiki	41%	5%	36%
Listening to a recorded virtual session.	39%	7%	32%
Participating in virtual faculty office hours.	36%	7%	29%
Participating in online assessment	34%	5%	29%
Completing an online orientation before the program began.	33%	14%	19%
Completing a poll or survey.	22%	0%	22%

(N=41)

Although subjects responded in low numbers to the concept of detracting from sense of community, one learning activity, *participating in asynchronous discussions* (15%) had the highest response rate for detracts from sense of community (Table 13). This type of interaction is frequently used in online classrooms and is widely considered as a standard type of student interaction. *Class wiki* (9%), *participation in asynchronous discussion with push-out notification* (7%), *writing assignment* (7%) *and completing poll or survey* (7%) were all rated higher than the remaining learning activities in detracting from sense of community. These four learning activities are typically asynchronous and individually completed. Lack of live interactivity, collaboration and synchronicity may result in subjects feeling that fewer opportunities to engage with others exist, thus diminishing opportunities for development of community. Overall, for learning activities students rated as detracting from, there was low agreement from the group as a whole.

Nine learning activities had high levels of agreement for neutral answers, with regard to enhancement or detraction (Table 14). Those higher neutral levels did correspond directly to not having experienced a particular learning activity for four activities: *completing a poll or survey, listening to a recorded virtual session, participation in class wiki and completing an online orientation before the program began*. This may indicate that some subjects are reserving judgment on rating learning activities because they have not experienced them. Eight of seventeen learning activities were experienced by all subjects.

Table 13.

Distributions for Learning Activities with Detracts from Responses

Learning Activity	**Detracts from Total**	**Strongly Detracts From**	**Detracts From**
Participating in asynchronous discussion- students participate in discussions, but not in real time.	15%	5%	10%
Participation in class wiki	9%	2%	7%
Writing Assignment	7%	0%	7%
Participating in asynchronous discussion with push out notification- students are notified electronically when others add to the discussion.	7%	2%	5%
Completing a poll or survey.	7%	2%	5%
Listening to a recorded virtual session.	5%	0%	5%
Participating in online assessment	5%	0%	5%
Completing an individual project	5%	0%	5%
Reading course materials	2%	0%	2%
Peer reviewing assignments	5%	0%	5%
Participating in synchronous virtual sessions – students participate in real time	2%	0%	2%
Completing an online orientation before the program began.	2%	0%	2%
Conducting an individual presentation	2%	0%	2%
Participating in a group presentation.	0%	0%	0%
Participating in face to face orientation before	0%	0%	0%

the program began			
Participating in a collaborative project.	0%	0%	0%
Participating in virtual faculty office hours.	0%	0%	0%

(*N*=41)

Table 14.

Distributions for Learning Activities with Neutral or Have Not Experienced Responses

Learning Activity	**Neutral**	**Have not Experienced**
Completing a poll or survey.	37%	34%
Listening to a recorded virtual session.	33%	24%
Participation in class wiki	29%	21%
Completing an individual project	29%	0%
Completing an online orientation before the program began.	26%	38%
Reading course materials	26%	0%
Participating in asynchronous discussion- students participate in discussions, but not in real time.	24%	0%
Writing Assignment	24%	0%
Conducting an individual presentation	24%	5%
Participating in asynchronous discussion with push out notification- students are notified electronically when others add to the discussion.	21%	14%
Participating in online assessment	20%	41%
Participation in virtual faculty office hours.	14%	50%
Participating in a group presentation.	10%	0%
Peer reviewing assignments	10%	17%
Participating in synchronous virtual sessions – students participate in real time	2%	0%
Participating in face to face orientation before the program began	0%	0%
Participating in a collaborative project.	0%	0%

(N=41*)*

Additional Comments Made by Subjects

An open-ended question giving subjects an opportunity to add anything additional to their responses was included in the instrument. Of 43 subjects, 13 provided short answer responses to the question, "Is there anything further you would like to add?" The 13 responses were coded into a number of themes, including: importance of professors' commitment to student learning, importance of sense of community in online program, usefulness of face to face sessions, importance of peer support, EDLT student needs to acquire necessary related technology skills and excellent learning opportunity. Table 15 summarizes the frequency result of the open-ended question.

Table 15.

Responses to Open-Ended Questions

Theme	Frequency
Importance of professors' commitment to student learning	4
Importance of sense of community in online program	3
Usefulness of face to face sessions	2
Importance of peer support	2
EDLT students' needs to acquire necessary related technology skills	1
Excellent learning opportunity	1

(N=13*)*

For purposes of this study and its focus on sense of community, the three most frequent themes were closely reviewed. Importance of sense of community- Three subjects wrote about this theme. One subject stated, "sense of community is one of top three reasons I chose this program." Another subject stated, "I did not expect to feel the sense of community that I do, when I began this program. It has been a pleasant surprise. (But then again, when I started, I really didn't understand anything about the social

aspects of learning.)" Finally, a third subject wrote, "The sense of community I desire is so we can care about each other, and help each other succeed personally and professionally."

Importance of peer support to learn- Two subjects wrote comments that fit within this theme. One subject cited the importance of peer support to learn, while another subject stated,

> "The Cadre in which I am a member has gone above and beyond the perimeters of the program, in regards to supporting each other. (may be a reflection of the "set up itself). Our motto is, 'There are no gazelles here'. We 100% help and get each other through. There are 'no dumb questions.'"

Usefulness of face to face sessions- Two subjects stated that the face to face component of these blended programs helped connect group members. One subject wrote, "Having a strong CoP is very important to the process of learning and completing the program. It was vital that the students in the program have face-to-face time to connect and get to know each other. This builds the community and trust and enhances the activity, bringing the program to an even higher level. Simply knowing we have more face to face time coming is encouraging. We like to be with each other and have a safe place to take risks with our learning and get feedback from each other.

Key Findings

In summary, several key findings were discovered upon analyzing the data from the survey instrument.

1. Roughly 20% of students in the online blended program rated themselves as some level of inexperience after at least one semester enrollment.
2. There was a high level of sense of community among the subjects enrolled in the three blended online programs.

3. The vast majority (86%) of subjects desire a sense of community to help them learn and to connect with others.
4. Sense of community is important to 78% of subjects in this study.
5. The learning activities most highly rated as enhancing sense of community were collaborative and synchronous.
6. The learning activities most highly rated as detracting from sense of community were individualistic and asynchronous.
7. Many of the most utilized learning activities are rated as not enhancing sense of community.
8. Of 13 responses to open-ended question, 7 responses were closely related to the notion of collaboration and synchronistic learning within the program: usefulness of face to face sessions, peer support and importance of sense of community.
9. There were no differences in desire for sense of community across student demographics.

Chapter 5: Discussion

Issue and Significance

The growth of online courses and programs in post-secondary institutions has afforded many students an alternative to the traditional face to face courses, thus providing opportunities for students to attend courses who would not have previously been able due to a variety of reasons, such as; geography, time constraints and scheduling conflicts (Song, et al., 2004). However, prior research demonstrates a lower percentage of persistence in online courses and programs due to a number of factors (Drouin & Vartanian, 2010; Huett et al., 2008; Nagel, 2009; Park & Choi, 2009; Roblyer et al., 2008; Simpson, 2004). Main factors of low persistence can be categorized into the two main categories of student characteristics and institutional characteristics. While the main student characteristics can include lack of organization and low motivation (Song, et al., 2003) , the main institution characteristics for low persistence relate to poor technical support and hard to use technology related to the learning management system (Petrides, 2002). However, one factor related to low persistence crosses both the student and institution related causes of low persistence. Feelings of loneliness or isolation have been cited by students as reasons for lack of persistence, achievement and satisfaction in the course or program (Liu, et al., 2007; Song, et al., 2004).

When specifically considering the issues of loneliness or feelings of isolation, it has been shown that humans have an innate need to belong (Baumeister & Leary, 1995; Moller et al., 2010). When people feel that they belong to a family or a group or feel they have emotional support they are happier, have higher self-esteem and better health-

related outcomes (Anant, 1967; Baumeister & Leary, 1995; Hagerty,et al., 1992; Tomaka, et al., 2006).

How is the need to belong satisfied with the ubiquitous use of technology? Has technology caused a change in the way humans communicate and connect? Communication, for example, is increasingly mediated by technology. Texting, instant messaging and meetings held via web-based applications are commonplace. While online friendships were perceived as *not real friendships* in the past, there is an increasing acceptance of the legitimacy of online connections and relationships. Community is found and felt when connecting via technology (Chayko, 2002).

Rovai (2002b) addressed the issue of belonging and community in the classroom by developing Classroom Community Scale (CCS) to measure the level sense of community within a classroom. Sense of community is a theoretical construct that describes a feeling of belonging to a particular group (Rovai, 2002b). It has been shown to contribute to an increase in retention rates, higher sense of learning and higher levels of satisfaction, as reported by students (Liu, et al., 2007; Rovai, 2002a). The overall CCS score would give an educator a general indication of the level of community within a given class. However, no prescriptive measures were described or suggested, based on the results of the CCS score.

This research was conducted to investigate ways in which online course developers could design courses to increase the sense of community. The determination of which types of learning activities enhance or detract from the sense of community within an online blended program may inform course developers as to which types of learning activities to build into online courses and which to either leave out or minimize.

This type of examination of the efficacy with regard to sense of community may be an important step in increasing student connection within online blended courses and programs and ultimately student persistence and graduation rates.

Conceptual Foundation

Multiple, but related theoretical constructs were used to frame this study, in order to understand how specific learning activities or experiences may influence a sense of community within a blended online program. The topics of basic human need to belong, online learning, andragogy and online course design have been explored in an attempt to understand how best to inform course developers of ways in which to increase sense of community within online courses.

There exists a basic human need to belong. This need has been demonstrated as far back as early man, when humans would group up for matters of survival. Abraham Maslow (1954) developed a theory of human motivation and development based on a hierarchy of needs. Bowlby's (1969) Attachment Theory is related to the idea of human belongingness, posits that the types of attachments, secure or insecure, one has as a child to primary caregivers can shape their interpersonal relationships later in life.

Furthering the notion that humans need to belong, Lavigne, Vallerand & Creiver-Braud (2011) hypothesized a Belongingness Orientation Model (BOM). The BOM suggests that the need to belong is universal and that humans can have one of two types of orientation; growth orientation or deficit-reduction orientation. Much like Maslow (1954), Bowlby (1969) and Mallinckrodt's (1992) research, the BOM suggests that a person's previous social interactions will effect future social interactions, resulting in either orientation; growth or deficit-reduction. The importance of human belonging

cannot be over-emphasized, as this need impacts humans and their social interactions and health throughout their lives. Not only do humans need to belong to social groups and families, belongingness in other settings such as school and the workplace (Baskin, et al., 2010; Crabtree, 2004; Leblebici, 2012; Levett-Jones, et al., 2007; Winter-Collins & McDaniel, 2000).

Traditional in person relationships are not the only types of relationships that help humans to belong and connect with each other. Relationships as mediated via technology also promote feelings of belongingness and are increasingly becoming commonplace, with the ubiquitousness of technology. However, some wonder if virtual relationships are as real as face to face relationships. Chayko (2002) asserts that virtual connections or relationships are real and exist mentally.

Adult learning theory or andragogy is another theoretical construct explored in the context of this study. Knowles (1980) described andragogy as the philosophy of teaching for adults having certain characteristics that set it apart from pedagogy, which is more specifically related to the learning of children or younger adults. When considering andragogy in the online classroom, Fink's Theory of Significant Learning (2003), is often used as the foundation of online teaching.

Online courses have their weaknesses and strengths when it comes to efficacy, much like the traditional classroom setting. Statistically speaking, online courses face between 10-20% lower persistence rates than their traditional counterparts (Carr, 2000). There are many factors that contribute to lower persistence rates that can be characterized as either institution-centric or student-centric. The theoretical construct of sense of community has been shown to have an impact on retention rates in online courses. Rovai

(2002b) developed the Classroom Community Survey (CCS) in order to measure the level of community within a classroom. The CCS score would indicate to a teacher how high or low the sense of community was and was meant to trigger some action on the part of the teacher to incorporate more opportunities to build sense of community, if the score was low. Students feeling a high sense of community report less feelings of loneliness and isolation, more satisfaction and are more likely to continue in online courses (Liu, et al., 2007).

The final element of the conceptual foundation for this study was to examine the best practices in course development. Careful design of online courses is important to ensure the best application of andragogy and best practices possible. In Song, Singleton, Hill and Koh's study (2004), 83% of students rated course design as contributing to a successful online learning environment.

Methods

A quantitative research design was used for this study to measure the level of sense of community in online courses, its importance to students, and learning opportunities that both increased and decreased the sense of community. A total of 43 subjects enrolled in one of three blended online graduate programs with at least one semester of blended online learning experience participated in the study. The research questions were:

1. To what degree do experienced online learners feel a sense of community as measured by the Classroom Community Scale (CCS) within their online course or program?

2. To what degree do experienced online learners feel that a sense of community within their online course or program is important?

3. What types of learning activities within an online course or program enhance an individual student's overall sense of community?

4. What types of learning activities within an online course or program detract from a students' overall sense of community?

5. Are there differences in desire for sense of community across student demographics?

The instrument was a three part online survey including the Classroom Community Scale (CCS), a previously developed instrument, a section on learning experiences and a final section collecting subject demographics.

Conclusions Based on Key Findings

There were 8 main findings from in this study:

- Finding 1: Roughly 20% of students in the online blended program rated themselves as some level of inexperience after at least one semester enrollment.
- Finding 2: There was a high level of sense of community amongst the subjects enrolled in three blended online programs.
- Finding 3: The vast majority (86%) of subjects desire a sense of community to help them learn and to connect with others.
- Finding 4: Sense of community is important or very important to 97% of subjects in this study.
- Finding 5: The learning activities most highly rated as enhancing sense of community were collaborative and synchronous.

- Finding 6: The learning activities most highly rated as detracting from sense of community were individualistic and asynchronous.
- Finding 7: Many of the most utilized learning activities are rated as not enhancing sense of community.
- Finding 8: Of 13 responses to open-ended question, 7 responses were closely related to the notion of collaboration and synchronistic learning within the program: usefulness of face to face sessions, peer support and importance of sense of community.
- Finding 9: —There were no differences in desire for sense of community across student demographics.

Conclusion #1. After at least one semester of online blended learning experience, approximately one-fifth of subjects rated themselves as inexperienced in blended online learning. This percentage of inexperienced learners is higher than expected. This high percentage of inexperienced subjects could be related to several issues.

While it is not known why the subjects consider themselves inexperienced, but there may be several reasons. Perhaps some subjects use technology as little as possible, due to lack of experience and feelings of insecurity over their level of technology competence. Perhaps there is a spectrum in which the online portion of the courses is being used, with some professors using the online portion robustly and others using the online portion of the course solely as a learning repository. For example, students may experience synchronous virtual sessions and other learning activities within the online portion of their course, while others may simply be required to do simple tasks such as upload documents or obtain assignment information from the learning management

system, thus having less opportunity for proficiency and comfort in the online portion of a blended course.

One would assume that both students and universities involved in blended online programs would consider a minimum level of technology proficiency as a result of this type of learning experience. Recommendations for both students and universities can be made to increase levels of learner proficiency and experiences in online blended programs. First, universities can offer in person technology training for students prior to program start. Students can have an opportunity both to learn the technology needed to successfully navigate the online portion of their courses. Pre-program technology training can also increase the comfort level for students with less technology experience, as well as identify students who may require extra support or who may be more successful in a traditional face to face learning environment. Such a pre-program training or orientation may also employ techniques that encourage social interaction and community building, to increase community (Ouzts, 2006) as well as technological proficiency.

Secondly, universities should consider the quality and user friendliness of their adopted learning management system and other technologies that students and faculty will use in the blended online program. Using one learning management system with multiple features that allow students and faculty to complete all tasks and requirements in one place would be ideal, instead of adopting multiple technologies and applications that can be cumbersome and inconvenient.

Finally, in order for students to have the same opportunities to experience and learn the technology necessary to be successful in blended online programs, there may need to be a minimum requirement or uniformity in which faculty use the learning

management system. For example, a certain set of recommendations of use of a learning management system that would ask that faculty post announcements, syllabus, have students upload assignments and grade tracking, would allow for students and faculty to have multiple opportunities to navigate the learning management system for multiple purposes, thus gaining experience and perhaps a facility of use.

Conclusion #2. There was a high sense of community among the subjects enrolled in three blended online programs, as well as a strong desire for sense of community. Additionally, community is important to help people learn and connect with each other. Although this study results showed high levels of sense of community within programs, it is important to note that these results cannot be directly compared to results from previous studies because many studies were conducted when online learning was in its infancy. As a newly emerging learning delivery model, the term *online* with regard to learning, programs or classes was defined in many ways. For example, the term *blended online course or program* has only recently been coined to describe a course that is both synchronous and asynchronous and may or may not require face to face meetings. That being said, previous studies seemed to have lumped the term *online* to mean several different things, without distinguishing.

Sense of community scores may be higher for blended online programs, in general, due to the nature of increased synchronous learning and engagement, coupled with face to face time, when required. Perhaps that level of synchronicity lends itself more towards a development of community than purely asynchronous online programs.

This particular set of programs within a school within a university may be particularly good at fostering a sense of community amongst its students. Perhaps the

very point of offering blended online programs is for fostering community and raising retention rates, student achievement and student satisfaction.

Several recommendations may be considered with regard to sense of community. First, it is important not to assume that all students desire community and to understand that the very nature of a program may attract people with varying degrees for need for community. For example, completely asynchronous online programs may attract students with a lower desire for sense of community, while blended online programs with a required face to face component mat inherently attract students desiring those opportunities to connect with others.

Universities should take into consideration the importance of community, especially within the growing world of online learning, where community may not be as natural a consideration as it may be in traditional programs. University programs may well look within to reflect on their mission to determine the level importance of community within their institutions, with regard to online learning. If community is an important tenet of a given university, it is recommended that online programs are developed that are blended in nature, with opportunities for either face to face interaction or meaningful, real-time synchronous sessions, giving students and faculty multiple and varied opportunities to engage with each other to work towards the development of sense of community. Additionally, a cohort model may provide opportunities for people to get to know each other and develop meaningful connections.

Students selecting an online program of study should take into consideration their interest in and desire for community within the academic context and select a program accordingly. If a student does feel that he or she need peer support and connection to

learn and be successful, they should look more towards blended online programs with synchronous opportunities. If a student does not desire community, perhaps an online program that is primarily asynchronous would be a better fit.

Within a course, faculty should also consider the desire for and level of community among students. A suggestion would be to administer the Classroom Community Scale (CCS) to students within a course to determine the level of community. The results of the CCS would provide a rating of level of community and the faculty member could then determine whether or not to incorporate more community-building learning opportunities. Faculty can also take measures to increase the sense of community in a course by providing multiple ways to complete assignments. For example, students may be given the opportunity to complete a specific assignment by working alone, in a small or larger group, with the deliverable being one of many possibilities, such as a presentation, video or paper. These menu-types of assignments can meet the needs of those who desire community and those that do not. In fact, allowing people to choose whether or not they work with others on assignments may well increase the sense of community because students will not be forced to work in ways that they do not prefer.

Conclusion # 3. The learning activities most subjects rated as enhancing sense of community were collaborative and synchronous, while the learning activities most in agreement by subjects as detracting from sense of community were individualistic and asynchronous. Synchronous and collaborative learning activities foster and enhance a sense of community due to the fact that students are required to connect in real time and work collaboratively. It may be assumed that relationships form and students get to know

each other better than those in asynchronous online programs. Individual assignments or requiring students to interact in an asynchronous manner does not give them as many rich opportunities to connect with each other, get to know each other and build community. The lack of human connection in programs that offer mostly individual types of assignments that may be fairly two dimensional and result in student feelings of isolation and loneliness.

These findings point to some important recommendations for online course development. Course developers and instructional designers need to be aware that certain learning activities invite more interaction, collaboration and community than others. As a result, course developers need to take the opportunity to build into online courses the very foundation that promotes community and that is: opportunities for interaction and collaboration. Knowing this, course developers need to consider the paradigm of their course development and be sure that interaction is at the heart of the course. By focusing on community as a course is designed and developed, multiple and varied opportunities for interaction can be built within a course, to give teachers plenty of options and choice to facilitate interactivity amongst the students.

Conclusion #4. Students most frequently experience learning activities that have been rated as less enhancing to sense of community. There seems to be a disconnect between the most utilized learning activities and those that most enhance sense of community. The most frequently utilized learning activities, in many cases, do not promote a sense of community, as they are individual based assignments, require little, if any collaboration or connection with others.

Sense of community can be important to students and it should be regarded as an important construct within any online course or program. Universities must evaluate their current online programs specifically to understand how online learning is being delivered and whether or not students have multiple and varied opportunities to interact and connect with each other. With this information, trainings can be developed to apprise faculty of the multiple ways in which technology can be used to increase sense of community within their courses. Most likely, faculty have been trained on the use of the adopted learning management system and best practices in online learning; however technology and what we know about online learning is changing rapidly. One must not expect that a single training will suffice. Trainings must not be static, but rather designed as evolving iterations, as technology and its affordances are ever changing. Trainings could be conducted within the actual learning management system and technologies that are used, to immerse faculty and to model strategies for interaction and engagement.

Conclusion #5. Many open-ended responses were closely related to the notion of collaboration and synchronistic learning within the program and the usefulness of face to face sessions, peer support and importance of sense of community. Several subjects voiced their desire for connecting via synchronous learning and face to face sessions. This is most likely another example of the desire or need to belong that is innate in humans. One may assume that students enrolling in blended online programs would value the opportunities to connect with others within their programs.

Given the human need to belong and connect, it is recommended that universities offer blended online programs, as ways to build community and engage students in the learning process. In many cases, online programs are developed as purely asynchronous

in order to meet the needs of a global student population. If blended online programs are not possible, the next best option would be to offer online programs that have a minimum requirement for synchronous instruction and interaction. This will also be difficult for programs with global student populations, as it would require students far outside of the local time zone to adjust their schedules to participate synchronously. This is already done often in various industries where people work with distributed teams across many time zones.

Blended and synchronous opportunities may also increase student learning and result in more successful student outcomes, satisfaction and higher graduation rates because of the many opportunities for relationship building, connecting with others and engagement with faculty.

Limitations

The research design and non-probability sampling techniques used in this exploratory research study come with inherent limitations on the findings. External validity, or ability to generalize to the wider population is limited due to the convenience sampling, sample size and sample population of three programs within one school within a single university.

Future Research

Given the findings of this study, there are several recommendations for future research in order to determine sense of community's effect on retention, as well as completion rates for dissertation students. Replication of this study with a larger, random sample would be worthwhile as a way to validate the findings within this study. Study

replication may be useful in terms of validating these findings for course developers and instructional designers.

It is recommended that this study be replicated with different, clearly defined populations of online learning program types, including blended, asynchronous and synchronous. In much of the previously conducted research on sense of community, specifically using the Classroom Community Scale (Rovai, 2002b), online learning was in its infancy and different types of delivery such as; asynchronous or synchronous or blended or hybrid, were not yet clearly defined. As a result, it is hard to accurately data and findings from many of the past studies using the Classroom Community Scale (CCS). Clarity moving forward would contribute to the body of research using the CCS instrument, aside from the online blended program graduate students. For example, conducting a study with students in fully asynchronous online programs may yield different results with regard to the importance of sense of community.

There is a need for more qualitative research on sense of community within and course development within the field of online learning. Within this study alone, some specific, but insightful information was shared for the one open-ended question. A qualitative study may yield much more information with regard to why students desire community and why certain types of learning activities enhance sense of community.

Conducting this study on a younger population of high school students in online programs will also add to the body of work in the field, as high schools are also increasing their offerings of online courses. High school students also may have a stronger need for affiliation and community during their teenage years, increasing the

importance of course development addressing and including multiple opportunities for sense of community development.

Final Thoughts

Throughout the literature and the results of this study, it is clear that community can play a role in student learning and connectedness. Given the importance of sense of community, it is imperative that universities look to this construct as a potential solution for increasing retention and completion rates for programs. Universities may well benefit from taking a closer look at the importance placed on sense of community throughout their institution, from multiple perspectives. If sense of community plays an important role at a university, is that importance reflected in student recruitment, faculty training and support and student engagement? Are students given ample opportunities to connect with each other in online courses? Are blended courses and programs available to those seeking sense of community? Do faculty know how to evaluate the level of community within their courses and provide learning opportunities to promote community? Universities may well benefit from determining just how important community is within their institution and make sure to articulate that vision to all stakeholders, which may result in increasing retention and completion rates.

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APPENDIX A

Invitation to Participate in Study

Dear Graduate Student,

My name is Christy Cleugh, and I am a doctoral student in Learning Technologies at Pepperdine University, currently in the process of recruiting individuals for my study entitled, "Sense of Community in Blended Online Programs." This study is being conducted in partial fulfillment of the requirements of a dissertation. The professor supervising my work is Dr. Kay Davis. The study is designed to investigate sense of community within online blended programs. I am inviting currently enrolled graduate students, who are enrolled in at least their second semester of their current program, and who have taken at least one online course, and are enrolled in either ELT 632, EDLT 751, EDLT 724, EDOL 785.25, EDOL 785.26 or EDOL 763 to participate in my study. Please understand that your participation in my study is completely voluntary and

anonymous. The following is a description of what your study participation would entail, the terms for participating in the study, and a discussion of your rights as a study participant. Please read this information carefully before deciding whether or not you wish to participate.

If you should decide to participate in the study, you will be asked to complete an online survey. It should require less than 15 minutes of your time. Please complete the survey individually in a single sitting.

Although minimal, there are potential risks that you should consider before deciding to participate in this study. The greatest perceived risk might be that your identity may be revealed or that your response or willingness to participate would influence your course grade. I will not have any access to your specific identity nor will your faculty have access to survey response data or even know whether you chose to participate, as you will be contacted through your course within Sakai. The survey is administered through SurveyMonkey and all responses are stripped of IP addresses prior to my receiving the data. You will be anonymous to me.

There are several benefits to this research that can directly impact you. As a student enrolled in an online graduate program, this research is meant to inform course developers as to how to design courses that promote sense of community, a known factor in student persistence, perceived learning, and satisfaction. Additionally, participation in this study may enlighten you as to the quality of your current learning environments. Finally, you may benefit by informing researchers about best practices through your answers involving sense of community and learning experiences in the online environment.

If you should decide to participate and find you are not interested in completing the survey in its entirety, you have the right to discontinue at any point without being questioned about your decision. You also do not have to answer any of the questions on the survey that you prefer not to answer--just leave such items blank.

After the survey has been available for 1 week, a reminder email will be sent to you through your Sakai course, asking you to complete and return the survey. This email will go out to everyone, as I will not have any way of determining who is participating or not. I apologize in advance for sending you these reminders if you have complied with the deadline. After 2 weeks, the study will close and the survey will no longer be accessible.

If the findings of the study are presented to professional audiences or published, no information that identifies you personally will be released.

This study has been approved by GPS-IRB and Dr. Martine Jago, Associate Dean. If you have any questions regarding the information that I have provided above, please do not hesitate to contact me at the email address provided below. If you have further questions or do not feel I have adequately addressed your concerns, please contact Dr. Kay Davis (kay.davis@pepperdine.edu). If you have questions about your rights as a research

participant, contact Dr. Doug Leigh, Chairperson of the Graduate and Professional School IRB, Pepperdine University, Graduate School of Education & Psychology Pepperdine University, 6100 Center Drive 5th Floor Los Angeles, CA 90045.

By completing the survey, you are acknowledging that you have read and understand what your study participation entails, and are consenting to participate in the study.

Thank you for taking the time to read this information, and I hope you decide to complete the survey. A brief summary of the findings will be posted within the Sakai learning management system in the Dissertation Central course in about 6 months.

Sincerely,

Christy Cleugh
Doctoral Candidate
Christina.cleugh@pepperdine.edu

To begin the survey, please click the link below:
https://www.surveymonkey.com/s/95SH2ZS

APPENDIX B

Reminder Invitation to Participate in Study

Dear Graduate Student,

This is a reminder request for those of you who have not already completed the survey for my study entitled, ""Sense of Community in Blended Online Programs." If you have not completed the survey, I would ask that you kindly read the invitation to participate below. If you have completed the survey, I thank you very much for your participation. Your participation is greatly appreciated.

My name is Christy Cleugh, and I am a doctoral student in Learning Technologies at Pepperdine University, currently in the process of recruiting individuals for my study entitled, "Sense of Community in Blended Online Programs." This study is being conducted in partial fulfillment of the requirements of a dissertation. The professor supervising my work is Dr. Kay Davis. The study is designed to investigate sense of community within online blended programs. I am inviting currently enrolled graduate students, who are enrolled in at least their second semester of their current program, and who have taken at least one online course, to participate in my study. Please understand that your participation in my study is completely voluntary and anonymous. The following is a description of what your study participation would entail, the terms for participating in the study, and a discussion of your rights as a study participant. Please read this information carefully before deciding whether or not you wish to participate.

If you should decide to participate in the study, you will be asked to complete an online survey. It should require less than 15 minutes of your time. Please complete the survey individually in a single sitting.

Although minimal, there are potential risks that you should consider before deciding to participate in this study. The greatest perceived risk might be that your identity may be revealed or that your response or willingness to participate would influence your course grade. By using this announcement through Sakai, I will not have any access to your specific identity nor will your faculty have access to survey response data or even know whether you chose to participate. The survey is administered through SurveyMonkey and all responses are stripped of IP addresses prior to my receiving the data. You will be anonymous to me.

There are several benefits to this research that can directly impact you. As a student enrolled in an online graduate program, this research is meant to inform course developers as to how to design courses that promote sense of community, a known factor in student persistence, perceived learning, and satisfaction. Additionally,

participation in this study may enlighten you as to the quality of your current learning environments. Finally, you may benefit by informing researchers about best practices through your answers involving sense of community and learning experiences in the online environment.

If you should decide to participate and find you are not interested in completing the survey in its entirety, you have the right to discontinue at any point without being questioned about your decision. You also do not have to answer any of the questions on the survey that you prefer not to answer--just leave such items blank.

After the survey has been available for 1 week, a reminder announcement will be posted in Sakai to complete and return the survey, on (insert date). This announcement will go out to everyone, as I will not have any way of determining who is participating or not. I apologize in advance for sending you these reminders if you have complied with the deadline. After 2 weeks, on (insert date), the study will close and the survey will no longer be accessible.

If the findings of the study are presented to professional audiences or published, no information that identifies you personally will be released.

If you have any questions regarding the information that I have provided above, please do not hesitate to contact me at the email address provided below. If you have further questions or do not feel I have adequately addressed your concerns, please contact Dr. Kay Davis (kay.davis@pepperdine.edu). If you have questions about your rights as a research participant, contact Dr. Doug Leigh, Chairperson of the Graduate and Professional School IRB, Pepperdine University, Graduate School of Education & Psychology Pepperdine University, 6100 Center Drive 5th Floor Los Angeles, CA 90045.

By completing the survey, you are acknowledging that you have read and understand what your study participation entails, and are consenting to participate in the study.

Thank you for taking the time to read this information, and I hope you decide to complete the survey. A brief summary of the findings will be posted within the Sakai learning management system in the Dissertation Central course in about 6 months.

Sincerely,
Christy Cleugh
Doctoral Candidate
Christina.cleugh@pepperdine.edu

To begin the survey, please click the link below:

Insert survey link here: https://www.surveymonkey.com/s/95SH2ZS

APPENDIX C

Survey Instrument

***1.**

Please understand that your participation in my study is completely voluntary and anonymous. Although minimal, there are potential risks that you should consider before deciding to participate in this study. The greatest perceived risk might be that your identity may be revealed or that your response or willingness to participate would influence your course grade. By using the notifications feature within Sakai, I will not have any access to your specific identity nor will your faculty have access to survey response data or even know whether you chose to participate. The survey is administered through SurveyMonkey and all responses are stripped of IP addresses prior to my receiving the data. You will be anonymous to me.

There are several benefits to this research that can directly impact you. As a student enrolled in an online graduate program, this research is meant to inform course developers as to how to design courses that promote sense of community, a known factor in student persistence, perceived learning, and satisfaction.Additionally, participation in this study may enlighten you as to the quality of your current learning environments. Finally, you may benefit by informing researchers about best practices through your answers involving sense of community and learning experiences in the online environment. If you should decide to participate and find you are not interested in completing the survey in its entirety, you have the right to discontinue at any point without being questioned about your decision. You also do not have to answer any of the questions on the survey that you prefer not to answer--just leave such items blank.

After the survey has been available for 1 week, a reminder email will be sent to you through your Sakai course, asking you to complete and return the survey. This email will go out to everyone, as I will not have any way of determining who is participating or not. I apologize in advance for sending you these reminders if you have complied with the deadline. After 2 weeks, the study will close and the survey will no longer be accessible. If the findings of the study are presented to professional audiences or published, no information that identifies you personally will be released.

If you have any questions regarding the information that I have provided above, please do not hesitate to contact me at the email address provided below. If you have further questions or do not feel I have adequately addressed your concerns, please contact Dr. Kay Davis (kay.davis@pepperdine.edu). If you have questions about your rights as a research participant, contact Dr. Doug Leigh, Chairperson of the Graduate and

Professional School IRB, Pepperdine University, Graduate School of Education & Psychology Pepperdine University, 6100 Center Drive 5th Floor Los Angeles, CA 90045. By completing the survey, you are acknowledging that you have read and understand what your study participation entails, and are consenting to participate in the study.

Sincerely,
Christy Cleugh, Doctoral Candidate, Christina.cleugh@pepperdine.edu

- ○ I consent to participate in this study.
- ○ I do not consent to participate in this study.

Directions: Below, you will see a series of statements concerning your activity in the blended program in which you are presently enrolled. Read each statement carefully and click on the circle next to the response that comes closest to indicating how you feel about your experiences in the program. There are no correct or incorrect responses. If you neither agree nor disagree with a statement or are uncertain, click the bubble next to the word "neutral." Do not spend too much time on any one statement, but give the response that seems to describe how you feel. Please respond to all items.

2. I feel that students in this program care about each other.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

3. I feel that I am encouraged to ask questions.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

4. I feel connected to others in this program.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

5. I feel that it is hard to get help when I have a question.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

6. I do not feel a spirit of community.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

7. I feel that I receive timely feedback.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

8. I feel that this program is like a family.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

9. I feel uneasy exposing gaps in my understanding.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

10. I feel isolated in this program.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

11. I feel reluctant to speak openly.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

12. I trust others in this program.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

13. I feel that this program results in only modest learning.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

14. I feel that I can rely on others in this program.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

15. I feel that other students do not help me learn.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

16. I feel that members of this program depend on me.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

17. I feel that I am given ample opportunities to learn.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

18. I feel uncertain about others in this program.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

19. I feel that my educational needs are not being met.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

20. I feel that this program does not promote a desire to learn.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

21. I feel confident that others will support me.

- ○ Strongly Agree
- ○ Agree
- ○ Neutral
- ○ Disagree
- ○ Strongly Disagree

Sense of community is defined as a feeling of connectedness and commonality of learning goals amongst the students in a course or program.

To what degree do the following activities enhance or detract from a sense of community within your blended online program?

22. Reading course materials

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

23. Participating in asynchronous discussion- students participate in discussions, but not in real time.

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

24. Participating in asynchronous discussion with push out notification- students are notified electronically when others add to the discussion.

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

25. Participation in class wiki

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

26. Writing assignment

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

27. Participating in online assessment

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

28. Completing a poll or survey

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

29. Participating in a collaborative project

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

30. Participating in synchronous virtual sessions – students participate in real time

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

31. Listening to a recorded virtual session

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

32. Participating in a group presentation

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

33. Completing an individual project

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

34. Conducting an individual presentation

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

35. Peer reviewing assignments

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

36. Participating in face to face orientation before the program began

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

37. Completing an online orientation before the program began

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

38. Participating in virtual faculty office hours

- ○ Strongly Enhances
- ○ Enhances
- ○ Neutral
- ○ Detracts From
- ○ Strongly Detracts From
- ○ Have Not Experienced

39. Which activities most enhance sense of community within your blended online program? Select all that apply.

- [ ] Reading course materials
- [ ] Participating in asynchronous discussion- students participate in discussions, but not in real time.
- [ ] Participating in asynchronous discussion with push out notification- students are notified electronically when others add to the discussion.
- [ ] Participation in class wiki
- [ ] Writing assignment
- [ ] Participating in online assessment
- [ ] Completing a poll or survey
- [ ] Participating in a collaborative project
- [ ] Participating in synchronous virtual sessions – students participate in real time
- [ ] Listening to a recorded virtual session
- [ ] Participating in a group presentation
- [ ] Completing an individual project
- [ ] Conducting an individual presentation
- [ ] Peer reviewing assignments
- [ ] Participating in face to face orientation before the program began
- [ ] Completing an online orientation before the program began
- [ ] Participating in virtual faculty office hours

40. Which activities are used most often in your blended online program? Select all that apply.

- [ ] Reading course materials
- [ ] Participating in asynchronous discussion- students participate in discussions, but not in real time.
- [ ] Participating in asynchronous discussion with push out notification- stucents are notified electronically when others add to the discussion.
- [ ] Participation in class wiki
- [ ] Writing assignment
- [ ] Participating in online assessment
- [ ] Completing a poll or survey
- [ ] Participating in a collaborative project
- [ ] Participating in synchronous virtual sessions – students participate in real time
- [ ] Listening to a recorded virtual session
- [ ] Participating in a group presentation
- [ ] Completing an individual project
- [ ] Conducting an individual presentation
- [ ] Peer reviewing assignments
- [ ] Participating in face to face orientation before the program began
- [ ] Completing an online orientation before the program began
- [ ] Participating in virtual faculty office hours

41. What is your gender?

- ○ Female
- ○ Male

42. What is your age group?

- ○ 20-29
- ○ 30-45
- ○ 46-65
- ○ 66 and older

43. Which program are you enrolled in?

- ○ MALT or ELT
- ○ EDLT
- ○ EDOL GAP

44. How would you rate your level of experience as an online blended learner?

- ○ Experienced
- ○ Somewhat experienced
- ○ Somewhat inexperienced
- ○ Inexperienced

45. Prior to enrolling in your current program, to what extent had you participated in blended learning?

- ○ Very often
- ○ Often
- ○ Not very often
- ○ Not at all

46. To what degree is a sense of community important to you within your program?

- ○ Very important
- ○ Important
- ○ Neither important or unimportant
- ○ Somewhat important
- ○ Not at all important

47. If you desire a sense of community in an online program, is it to help you learn?

- ○ Yes
- ○ Neutral
- ○ No
- ○ Not applicable

48. If you desire a sense of community in an online program, is it so that you can connect with others?

- ○ Yes
- ○ Neutral
- ○ No
- ○ Not applicable

APPENDIX D

Permission to Use Classroom Community Survey (CCS)

Permission to use the Classroom Community Scale (CCS) developed by Dr. Alfred Rovai in 2002, was sought and obtained via email. The email exchange is below.

From: Alfred Rovai
Subject: RE: Request to Use CCS for Dissertation Research
Date: July 9, 2012 3:30:51 AM PDT
To: christina cleugh

Good morning,

You may use the CCS for your dissertation research as you describe. No further approval is required. just make sure you cite the 2002 Internet and Higher Education journal article that describes the instrument in any report you prepare.

Best wishes,
Fred Rovai

From: christina cleugh
Sent: Saturday, July 07, 2012 8:37 PM
To: Alfred Rovai
Subject: Request to Use CCS for Dissertation Research

Dr. Rovai,

I am writing my dissertation as I pursue my Ed.D. in Learning Technologies from Pepperdine University. Through my coursework and research, I have come to be a strong believer in Sense of Community as the glue and human touch in online learning. I feel that it is truly overlooked in online school and course development, as well as online instruction. My dissertation topic is about studying Sense of Community and the role it plays in graduate level online course design. It is my hope to come away with important best practices that inform course developers, instructional designers and subject matter experts on the importance of incorporating SoC into the development process, as well ways in which to build learning opportunities and experiences into courses in ways that promote that very important sense of community. My belief is that if course designers start with SoC as the foundation, educators will follow suit, resulting in more student and educator satisfaction, feelings of connectedness, higher retention rates, improved perceptions of the efficacy of online learning.

My research questions are:

1. Which learning experiences and opportunities within online courses contribute to an overall Sense of Community?
2. To what degree do students feel a Sense of Community within their online courses?
3. To what degree do students feel that a Sense of Community is important within their online course?
4. In what ways do student demographics correlate with the need and desire for a Sense of Community within the online courses?

As part of my study, I would very much like to use the CCS along with a few additional questions in survey form to gather quantitative and perhaps qualitative data. Would you grant me permission to use the CCS for this study? If so, is there a formal process that I need to begin?

Regards,

Christy Cleugh
Pepperdine University Doctoral Student

APPENDIX E

Pepperdine University Institutional Review Board Approval

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

February 7, 2013

Christy Cleugh
[redacted]

Protocol #: E0113D17
Project Title: Sense of Community in Post-Secondary Online Blended Courses: Importance of, Opportunities, and Implications for Course Development

Dear Ms. Cleugh,

Thank you for submitting your application, *Sense of Community in Post-Secondary Online Blended Courses: Importance of, Opportunities, and Implications for Course Development*, for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Kay Davis, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - http://www.nihtraining.com/ohsrsite/guidelines/45cfr46.html) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b)(2) states:

> (b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:
>
> **Category (2) of 45 CFR 46.101**, research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: a) Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

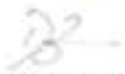
In addition, your application to waive documentation of consent, as indicated in your **Application for Waiver or Alteration of Informed Consent Procedures** form has been **approved.**

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Because your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* (see link to "policy material" at http://www.pepperdine.edu/irb/graduate/).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact me. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

Sincerely,



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Ms. Alexandra Roosa, Director Research and Sponsored Programs
Dr. Kay Davis, Graduate School of Education and Psychology

APPENDIX F

Exploratory Factor Analysis

Exploratory Factor Analysis of Rovai Classroom Community Scale

The original 20 items from the CCS were examined with its two subscales, learning and connectedness, both with 10 items each. In this preliminary analysis, an EFA was conducted to identify factors, valid items and in which subscales these items loaded together. First, a scree plot was observed to examine factors with eigenvalues greater than 1. Five factors were identified in this category: first factor (7.737), second factor (2.059), third factor (1.895), fourth factor (1.482), and fifth factor (1.162).

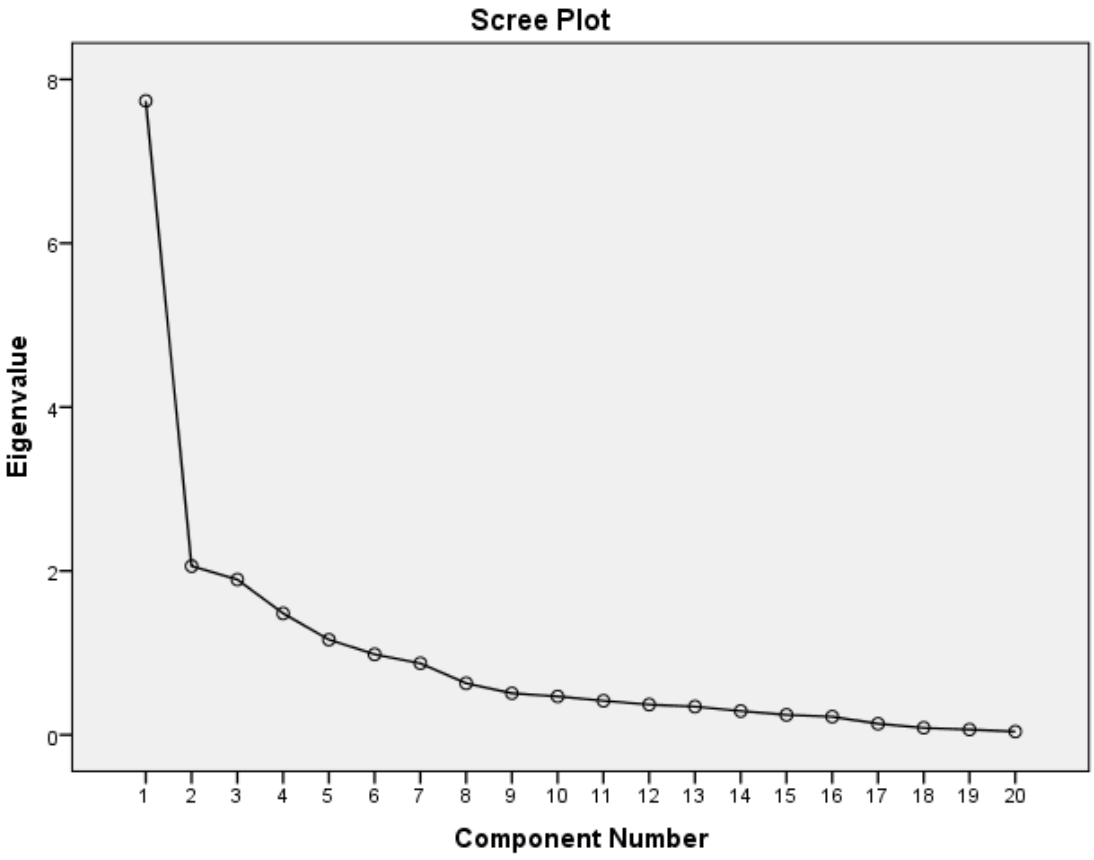

Figure 1 Scree Plot of the Classroom Community Scale

These five factors were tested using pattern matrix. Extract method of principal component analysis and rotation method of Oblimin with Kaiser Normalization were conducted to allow correlation between the identified factors. The quality of the items were identified examining unique factor loadings of all 20 items with acceptable loading and no cross loading. In this current study, to identify the quality of items, acceptable loading was examined using unique factor loading larger than .60. It is usually considered to be high with unique factor loading size larger than .60. Additionally, each item's cross loading more than two factors was examined with loading size larger than .35 (Lackey, Sullivan, & Pett, 2003; Silvera, Martinussen, & Dahl, 2001). If an item fell into two or more factors with .35 or higher, those items were eliminated as non-valid. Finally, to examine the quality of the observed factors, the numbers of items in each factor was counted. Although factors included acceptable loading and non-cross loaded items, if they had less than 2 items, they were eliminated, due to low quality (Lackey et al., 2003). According to the result of factors and items analysis, the following items fell into five factors named: first factor (1, 3, 9, 13, 15, 17, and 20), second factor (8,12, and 19), third factor (5, 10, and 14), forth factor (6), and fifth factor (19). As indicated above, the forth and fifth factors were eliminated, since each factor had only one item. The items of the first, second, and third factors were carefully examined applying literature and the original instrument development paper by Rovai (2002b). In the end, the first and second factors were chosen for this study and the third factor was eliminated. Although a third factor was found and associated with loneliness, it was eliminated due to the focus of this study on sense of community, with respect to learning and connectedness. The total variance of each factor was examined. The first factor and second factor accounted

for 38.68%, and 10.30 % of the variance in initial eigenvalues. After the examination of all items in the first and second factors, the subscales of CCS were identified using the original instrument of Rovai: first factor, "connectedness" and second factor, "learning." Table 1 summarizes the factors, factor loadings, communalities, and reliability statistics of the CCS. Finally, reliability test was conducted with the total 10 items for CCS, and its subscales: 7 for Connectedness and 3 for Learning. The internal consistency coefficients indicated by Cronbach's *a* was used to measure reliability of the scale and subscales. Table 2 summarizes the final two factors' names, number of the items and reliabilities indicated. George and mallery's (2009) categorizations of reliabilites were used. Reliabilities were categorized as: a>.8=good, .7<a<.8=acceptable, .6<a<.7=questionable, .5,a,.6=poor and a<.5=unacceptable.

Table 2 Reliability Result of CCS, Connectedness and Learning

Factor	Scale	n	*a*
1.	Connectedness	7	.88
2.	Learning	3	.73
1 and 2	Classroom Community	10	. 87

Table 1. Results from Exploratory Factor Analysis of Classroom Community Scale

Items	Factor loadings Factor1	Factor2	Factor3	Factor4	Factor5	M	SD	h2	α
C1. I feel that students in this program care about each other	.664	.041	-.050	.146	.006	3.57	.501	.491	.896
C3. I feel connected to others in this program	.881	-.121	. 036	-.070	.071	3.48	.707	.774	.893
C9. I feel isolated in this program	.748	.318	.038	-.007	-.299	2.90	1.02	.752	.892
C13. I feel that I can rely on others in this program	.714	.149	.293	-.060	-.113	3.29	.742	.745	.891
C15. I feel that members of this program depend on me	.606	-.021	.179	-.233	.343	2.67	1.03	.721	.892
C17. I feel uncertain about others in this program	.513	.157	.034	-.307	.177	2.52	.994	.489	.897
C20. I feel confident that others will support me	.785	-.084	.326	.007	-.032	2.52	.994	.808	.898
L8. I feel uneasy exposing gaps in my understanding	.185	.360	.304	.054	.169	3.38	.539	.454	.894
L12. I feel that this program results in only modest learning	-.048	.965	-.107	-.142	.018	2.57	.941	.884	.900
L18. I feel that my educational needs are not being met	-.105	.916	.082	.150	.105	3.00	.698	.896	.896
5. I do not feel a spirit of community	.131	-.097	.786	.110	.135	3.24	.906	.748	.896
10. I feel reluctant to speak openly	.276	.266	.604	.078	.047	2.81	1.09	.733	.890
14. I feel that other students do not help me learn	.002	.062	.904	-.176	-.125	3.29	.864	.838	.901
6. I feel that I receive timely feedback	.142	.162	-.281	.767	-.124	2.17	1.03	.727	.908
19. I feel that this program does not promote a desire to learn	-.070	.180	.070	-.013	.867	3.14	.814	.794	.890
2. I feel that I am encouraged to ask questions	.676	-.135	-.133	.151	.396	3.42	.859	.728	.894
4. I feel that it is hard to get help when I have a question.	-.131	-.088	.487	.688	.207	2.74	1.106	.762	.902
7. I feel that this program is like a family.	.637	.018	-.018	.369	.017	3.00	.826	.605	.894
11. I trust others in this program.	.513	.133	-.213	.000	.500	3.21	.606	.702	.895
16. I feel that I am given ample opportunities to learn.	.194	.500	.130	.404	.106	3.38	.582	.677	.895

Note. Unique factor loading > .60 are in bold. Analysis is based on 42 observations. Classroom Community Scale item scores range from 0 (Strongly disagree) to 4 (Strongly agree) for items, 1, 2, 3, 6, 7, 11, 13, 15, 16, and 20 and 0 (Strongly agree) to 4 (Strongly disagree) for items, 4, 5, 8, 9, 10, 12, 14, 17, 18, and 19. Internal consistency estimates for Factors 1 and 2 were .88 and .73 respectively. C = Connectedness; L= Learning; Factor 1 = Connectedness; Factor 2 = Learning; M =Mean; SD =Standard Deviation; *h*2 = Item communalities at extraction; *α* = Cronbach's alpha coefficient if item deleted