Sense of Community in On-Line, Face-to-Face, and Blended Learning Contexts

By

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A thesis submitted to the Faculty of Education

In conformity with the requirements for

the degree of Master's of Education

Memorial University of Newfoundland

St. John's, Newfoundland & Labrador, Canada

(December, 2016)

Abstract

Advances in educational technology leading to the growth of on-line and blended learning contexts as valid alternatives to traditional face-to-face classrooms, as well as recognition that social interactions among learners play a key role in the learning process, has led to an evolution of teaching approaches from direct instruction to facilitated learning. To choose the most appropriate pedagogical approach in the most suitable learning modality, educators need to know which approaches work effectively with the students and why. This mixed-methods research study compared sense of community in on-line, face-to-face and blended learning contexts. Twelve participants, four from each learning context, enrolled in a trades-related training program at a polytechnic reported their sense of community by completing the Classroom Community Scale (CCS) survey. Three participants, one from each learning context, shared their experiences in an interview about how each learning context contributed to their sense of community within the context in which they studied. Likely due to small sample size, survey results showed no statistically significant differences in sense of community between groups. The interviews showed that regular physical contact among students, synchronous discussions, instructor presence, and student-centered pedagogical approaches promote the establishment of sense of community.

Keywords: sense of community, learning contexts, CCS, on-line learning, blended learning, instructor presence

Acknowledgements

First and foremost, I wish to express deepest gratitude to the Almighty God, who is the source of life and strength of knowledge and wisdom.

I make so many mistakes, there is no end or limit to them.

O Lord, please be merciful and forgive me; I am a sinner, a great offender.

Guru Granth Sahib Ji, Page 1416.

Next, I am deeply grateful to Giani Sant Surajpal Singh Ji, my godfather and mentor for showering unconditional love and blessings; and sharing his wisdom with me that continues to enlighten my life's journey. I am forever indebted to him.

I would also like to express my sincere gratitude to my advisors Dr. Chris Mattatall and Dr. Tim Seifert for guiding my research and thesis writing. Their support, patience, motivation, and that extra "push" at the end made it possible for me to finish.

Last but not the least, I would like to thank my family: my husband and my two beautiful girls for their unconditional love and support. My husband continues to be a pillar of strength in my life. I could not have accomplished this without him! My daughters, Kulnoor and Naamroop make me continuously challenge myself. Thanks for being who you are, my girls!

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Sense of Community in On-Line, Face-to-Face, and Blended Learning Contexts

Recent education literature emphasizes the usefulness of community-centered pedagogical paradigms in classrooms (Ritter, Polnick, Fink, & Oescher, 2010). Pedagogical practices that facilitate learner interactions to create new knowledge and provide needed scaffolds to learners in the process of knowledge creation have become popular. However, a common challenge encountered by post-secondary educators is choosing the learning context and determining the instructional strategies that facilitate the development of learning communities among students and between students and faculty (DiRamio & Wolverton, 2006).

Origins of community-centered pedagogical paradigms can be traced back to the theories of social constructivism (Vygotsky, 1978), theory of social learning (Bandura, 1986), theory of socially distributed cognitions (Hollan, Hutchins & Kirsh, 2000), and social learning theory (Blackmore, 2010). These theories underscore the importance of social interactions in the learning process. They have laid the foundation that communication and social interactions lead to cognitive development and learning (Vygotsky, 1978), and that people learn from others by observation, imitation and modeling (Bandura, 1986). When people collaborate to achieve a common goal, they share their knowledge and skills, and in the process, experience feelings of community (Blackmore, 2010).

Feelings of community among learners have been recognized to play a critical role in collaboration and knowledge construction (Siemens, 2005), thus, promoting academic success and persistence in higher education (Rovai, 2002b). Ritter et al. (2010) explain that to establish community instructors need to take on the role of manager, establish classroom norms, and use student-centric teaching strategies. Instructors can establish community in any learning context, whether it is an on-line classroom environment, a face-to-face (f-2-f) setting, or some

combination of the two, also known as a blended classroom. However, when students do not have f-2-f contact, additional care needs to be taken to afford opportunities for students to actively engage with course content, their peers, and instructors.

Background of the Problem

Traditionally, the majority of apprenticeship training in Saskatchewan has been provided in the traditional, face-to-face classroom at one of the four main Saskatchewan Polytechnic's sites (SaskPolytech, formerly Saskatchewan Institute of Applied Sciences and Technology (SIAST). This often requires students to leave their work and their home communities and temporarily move closer to the training site. For the duration of training, the employers of those students also lose their workers. It is also an added cost to the federal government since the apprentices rely on employment insurance (EI) while they attend classes. Partially, to overcome this issue, in recent years, federal and provincial governments have invested in the development of technology-enhanced, flexible, training programs in various trades. As a result, numerous trades training programs in Saskatchewan currently have full or significant portions of their apprenticeship training available on-line. Since such training programs can be taken wholly or partially at a distance, apprentices can continue working in their communities for longer periods of time and reduce their dependence on EI benefits.

A significant portion of the federal and provincial funding for such programs has been channelled towards SaskPolytech to develop flexible training in trades like Carpentry, Truck and Transport, Electrical, Plumbing, and Partsperson Apprenticeship programs. A Saskatchewan Apprenticeship and Trade Certification Commission bulletin sums up the benefits for potential apprentices:

> Given the increased number of apprentices in Saskatchewan, industry has asked for on-line training delivery. On-line and blended trades training opportunities offered by Saskatchewan Polytechnic have been designed to allow the learners to continue residing in their homes, within their communities with minimal or no disruption to their work, personal and social lives. With this option, tradespeople aren't required to leave their jobs or homes to attend a standard seven-week program at an institution" (Saskatchewan Apprenticeship Bulletin, 2009, p. 3).

When taking on-line or blended training, apprentices can for the most part, carry on with their work, personal, and social lives in their communities. However, being away from the campus means that students do not have direct physical contact with their instructors or other apprentices taking the same training. This physical separation can contribute to feelings of disengagement (Shin, 2003), disconnectedness (Kerka, 1996), and isolation (Twigg, 1997), which in turn can impact their ability to complete the training programs (Rovai, 2003). Numerous research studies have shown that students enrolled in distance education programs tend to experience feelings of loneliness, isolation and disconnectedness (Ali & Smith, 2015; Kanuka & Jugdev, 2006; Rovai, 2003), and on-line training programs have attrition rates higher than comparable f-2-f programs (Rovai, 2003).

Learning communities in classrooms play a significant role in improving students' persistence rates and reducing dropout rates (Tinto, 1993). Ashar & Skenes (1993) also suggest that when adult learners experience social assimilation in the classroom, they feel self-motivated to continue in and complete their studies.

Statement of the Problem

More flexible trades programming, specifically training that is available in on-line and blended learning contexts has been recommended as an effective and efficient way to overcome the shortage of skilled labour. College educators have identified that apprentices in on-line and blended training experience limited interaction with instructors, fewer opportunities to learn from fellow students and limited discussions with others (Canadian Apprenticeship Forum, 2016). To choose the most suitable learning approach that supports interaction and the learning context that lends itself to establishment of community among learners, educators need research-based evidence. Accordingly, the purpose of this study was to compare students' perceptions of sense of community in a trades program at a polytechnic in three learning contexts; on-line, f-2-f, and blended. The study aimed to determine if students experience any differences in sense of community and how different leaning contexts contribute to students' sense of community.

Research questions and hypotheses;

1. What are the differences in students' perceptions of classroom community in different learning contexts?

    H1(null): F-2-f students will experience the highest sense of community.

2. How do different learning contexts contribute to students' sense of community?

Literature Review

Theoretical Base for Sense of Community

Human beings are social animals. We have an innate need to belong and connect with others. Experiencing a sense of belonging and connection with fellow humans leads to health and well-being (Barnes, Carvallo, Brown, & Osterman, 2010; Putnam, 2000). We benefit physically, mentally and emotionally when we develop communities and relationships at workplaces, schools, places of worship, and in politics, and civic duty. When humans experience feelings of security and belonging, their intrinsic motivation flourishes (Deci & Ryan, 1985). Deci and Ryan (2000) conducted studies which have shown that when participants perform an interesting task in the presence of an observer who does not respond to their queries and does no share their enthusiasm, the participants experience a diminishing level of intrinsic motivation. Deci and Ryan (2000) posit that a social environment that develops skills and abilities but fails to nurture kinship undermines human well-being.

Humans form bonds in both formal and informal settings such as schools, churches, neighbourhoods and workplaces. Presence of social bonds in schools and classrooms has led scholars to research the impact of social environments on learning. Levine, Resnick, and Higgins (1993) assert that social environment interpenetrates the cognitive processes in human functioning. They suggest various ways in which social factors influence what and how people learn. The most rudimentary way in which social factors influence cognition is via the mere presence of other people. Even when there is no interaction, the physical presence of other people can affect a person's cognitive activity, sometimes enabling it and at other times inhibiting it. Baron (1986) explains that others' presence can be a distraction. A person performing a task in the presence of others, ends up splitting attention between the task and the

audience. This causes cognitive overload and selective focussing of attention, which can lead to better or worse performance. Performance on simple tasks improves, while performance on complex tasks suffers due to distraction. Christaskis & Fowler (2009) also support that presence and actions of others' impacts an individual's motivations and behaviours. When we are surrounded by people who support our goal, our pursuit of that goal becomes more meaningful and gains momentum. People that surround us can help in our goal pursuit by providing feedback and also more directly by providing practical help (Fishbach, Steinmetz, & Tu, 2016).

Our beliefs and opinions about others are framed by their thoughts and beliefs about us (Smith & Semin, 2004). When we feel that others think well of us, we are more likely to want to spend time with those who affirm and support us, and this could possibly lead to a desire to work with them. These feelings of belonging may affect our willingness to share our ideas with others and listen to their ideas, which in the end could have an effect on how we think and act.

Social Constructivism. The theory of social constructivism (Vygotsy, 1978) emphasizes the importance of social encounters in the learning process. According to Vygotsky, individuals learn by interacting with others. Social interactions stimulate activity in the brain and promote cognitive change (Resnick 1987). During an interaction, when learners engage with their peers, they reconstruct and refine their understanding of the world. They learn from hearing others' thoughts and ideas and from articulating their own emerging understandings. In a group situation, each individual gets an opportunity to interact with peers who come from different social backgrounds, are at different levels of cognitive development, and are likely to have different responses to the same problem (Levine et al., 1993). These interactions need not always be in a face-to-face environment. Simply reading or hearing a counter opinion can facilitate cognitive change (Petty & Cacioppo, 1986).

Socially Distributed Cognition. The theory of socially distributed cognition also supports the notion that learning is not an individual cognitive activity concerned with the acquisition of a set of skills by individuals (Hollan, Hutchins, & Kirsh, 2000). Knowledge is distributed among the members of a group. When a problem is presented to a group, individual members present partial or full solutions to the problem. As a group, they negotiate and come up with an overall solution that is beyond the capability of any individual member. When individuals work collaboratively towards a common goal, their individual cognitive abilities are extended to and shared with other group members (Mansour, 2009). This makes it possible for the group to complete tasks and accomplish goals that cannot be achieved by an individual alone. In a group setting, the whole is greater than the sum of its parts. In summary, socially distributed cognitive systems amplify individual capacities (Brown & Duguid, 2000).

Social Learning Theory. Humans are known to learn from others by observation. Bandura's theory of social learning (1986) posits that humans learn from others by observation, imitation, and modeling. This theory explains that people learn by observing others' behaviours, and outcomes of those behaviours. We see others and model our behaviour on this observation. Learning by watching involves the observation of a model, which is then duplicated (Bandura, 1986). We learn by watching expert models giving demonstrations.

During social interactions, humans tend to align their behaviours with their peers (Lieberman, 2007). Recent research in neuroscience has implicated mirror neurons as a neurophysiological basis for social learning, observational learning, motor cognition and social cognition (Iacoboni, 2008). Iacaboni (2008) explains that mirror neurons, a special type of brain cells in humans get activated when humans watch another person perform a physical task. These neurons help us imitate, infer intention, and potentially do a mental simulation of the task that we

just watched. Mirror neurons also help us to read others' facial expressions and in turn help us empathize with the suffering or the pain, or even the joy and exuberance of the other person. By helping us recognize the actions and emotions of other people, mirror neurons also help us to recognize and understand the possible motives behind the actions, and intentions of other individuals.

Classroom Learning Community

A fundamental concept in the field of social cognition is that of a learning community (Liu, Magjuka, Bonk, & Lee, 2007). According to DuFour (2004), the term learning community is commonly used to describe all the possible combinations of individuals who are working and learning together in education. However, coming to a common understanding of what a learning community is has been a longstanding challenge. Measuring an abstract concept such as community is not trivial (Shea, 2006). The use of term community to describe social interactions at different levels and the use of terms such as "engagement" and "social presence" interchangeably with community make it hard to come up with a standard definition of classroom community (Ellis, 2013).

Simply put, a learning community can be defined as a group of people who engage in intellectual communication with the purpose of progressing their learning (Cross, 1998). Indeed, any combination of people purposely working together under a common learning goal, such as students and teachers, or teams of engineers working to solve a challenging construction problem, can be considered a learning community

Bielaczyc & Collins (1999) identified four typical characteristics of learrning communities: (a) diversity of expertise among its members, who are valued for their contributions and given support to develop, (b) a shared objective of continually advancing the

collective knowledge and skills, (c) an emphasis on learning how to learn, and (d) mechanisms for sharing what is learned. Members of learning communities are engaged in a collective effort of understanding. For instance, if a problem is presented to a learning community, the whole community brings its collective knowledge to resolve the problem. Each individual member does not necessarily assimilate everything that the community knows, but each member knows who within the community has relevant expertise to address that particular problem (Wong et al., 2013). As such, learning communities exist to advance an individual's knowledge by advancing the collective knowledge of the community.

However, communities can experience tension and conflict. Community members, when involved in sustained interpersonal engagement, can experience competition, power struggles, resistance, boredom, anger and hatred (Wong et al., 2013). Wenger (1998) expresses the complexity of relationships in community as follows:

> They are not easily reducible to a single principle such as power, pleasure, competition, collaboration, desire, economic relations, utilitarian arrangements, or information processing. In real life, mutual relations among participants are complex mixtures of power and dependence, pleasure and pain, expertise and helplessness, success and failure, amassment and deprivation, alliance and competition, ease and struggle, authority and collegiality, resistance and compliance, anger and tenderness, attraction and repugnance, fun and boredom, trust and suspicion, friendship and hatred. (p. 77)

Learning communities possess a culture of learning. All learners share the common goal of learning (Polnick, & Zellner, 2012), which enhances their sense of belonging and connection to the community (Rovai, 2003). Learners value learning and collaborate in the learning process

thus actively contributing to others' learning. They believe in on-going, life-long learning and continuously reflect on what they know, gain new knowledge, and contribute towards others' cognitive growth (Taylor, 2002).

Learning communities in education have been classified into four categories, one of them being classroom learning communities (Lenning & Ebbers, 1999). Classroom learning communities are based in the classroom and get established through cooperative and collaborative learning strategies (Polnick & Zellner, 2012). Besides promoting learning and fostering a feeling of connectedness among students, classroom learning communities foster an appreciation of diversity among students from different cultures, languages, gender, expertise, and age (Markowitz, Ndon, Pizarro, & Valdes, 2005). They empower students to take intellectual risks within the learning environment. They inculcate a shared objective of continually advancing the collective knowledge and skills. When a classroom learning community is developed, "it is a thing of beauty. The class becomes more inclusive and builds a sense of unity. Students and teachers get to know each other and feel safe to express themselves, disagree, and even be vulnerable to one another" (Allen, 2000, p. 1).

Connectedness and learning are two main components of classroom community (Rovai, 2001). Connectedness is composed of spirit, trust and interactions. Spirit is the feeling of belonging, acceptance, friendship, and of group identity. Trust is shown when the students feel safe to speak openly and their classroom community responds in supportive ways. Interaction is the belief that closeness and mutual benefit result from working together to complete a goal. Learning is the feeling that the community actively worked together to construct meaning and understanding of the course content. The learning is enhanced due to the work of the members of the community.

Developing Classroom Community

"Community grows, it is not made or given. Neither course designers, administrators, not instructors, can give a sense of community to learners" notes Conrad (2005, p. 17). However, if factors impacting classroom community are known and understood, designers, administrators and instructors can create and support creation of a learning environment that fosters community.

A learning community is created when the instructor, student and the learning content intersect. A positive co-relationship exists between students' perceived learning and community and teaching presence (Shea, Li, & Pickett, 2006). Instructors can proactively establish the elements necessary for classroom community to grow (McKinney, McKinney, Franiuk, & Schweitzer, 2006). In classrooms where instructors play a strong and active role by guiding student discussions, clearly communicating course objectives, quickly responding to student issues, and providing timely feedback on assessments, students perceive a stronger sense of learning community.

To create classroom community, the instructor needs to go beyond the mere transmission of knowledge and engage in dialogue (Wong et al., 2013). Instructors need to create and allow classrooms to be student-centered. Classrooms in which students are engaged in knowledge creation through interactions with each other, the instructor, and the content, promote and support the creation of classroom community. Instructors need to design courses that provide students with collaborative learning opportunities by using strategies such as jigsaw, guided inquiry, problem-based learning, case studies etc. Such opportunities allow creation of new knowledge through collaboration among diverse perspectives of participants. Instructors should take the time to get to know the students (Booker, 2008) and give students the time to get to

know each other. "Students begin to see connections to classmates while learning about one another," (Alleman, Knighton, & Brophy, 2007, p. 168). Instructors who are friendly and have an open communication style promote feelings of connectedness among learners (Rovai, 2003). Instructors can use simple strategies like memorizing student names, asking students to raise their hands to ask questions, soliciting students' prior knowledge depending on their expertise, and encouraging students to ask questions from each other (McKinney et al., 2006).

Peer support groups enhance sense of community among learners (Tinto, 1997). In a classroom, when students work in groups, they create a network of academic and emotional support. Students in cooperative learning classrooms perceive a higher sense of community and report greater motivation in achievement goals than those in traditional, lecture-based classes (Summers & Svinicki, 2007). Incorporating group work into classes, especially, large-enrollment classes is recommended to foster a strong sense of community among learners.

Sense of Community

Although the concept of sense of community in the classroom has been studied for a long time, there is a lack of consensus on its definition and the underlying factors impacting it. "The value of establishing a community of learners has been well documented, however, the methods of fostering and measuring that community are less well understood" (Ellis, 2013, p. 60). Students have a variety of reasons for taking a course or starting a program of study. A number of factors could influence the learning context they choose; f-2-f, on-line or blended. The factors that promote sense of community vary from cohort to cohort (Yasuda, 2009), and within a cohort, from student to student (Brown, 2001).

Despite these challenges, a number of definitions of sense of community are prevalent in the literature. Sense of community has been described as the opposite of sense of isolation and

being out there on your own (Walker, 2007). Unger and Wandesman (1985, p.155) have defined sense of community as ‘‘feelings of membership and belongingness and shared socio-emotional ties,’’ while Sarason (1974, p. 157) describes sense of community as ‘‘the perception of similarity to others, and acknowledged interdependence with others, a willingness to maintain this interdependence, . . . a feeling that one is part of a larger dependable and stable structure.’’

McMillan and Chavis (1986) have extensively researched sense of community. They define sense of community as “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to one another” (p. 9). A decade later, McMillan (1996) further expanded that definition to propose four-dimensional sense of community index that included; spirit, trust, trade, and art as defining features. :

- Spirit, the feeling that there is a community and feelings of acceptance and belonging.
- Trust, the idea that the community members can be trusted.
- Trade, the feeling that all members will mutually benefit from the community
- Art, that the community members share an emotional connection.

Rovai (2001) expanded the McMillan’s four-dimensional sense of community index to define it as follows:

- Spirit depends on friendship, cohesion, and bonding among learners
- Trust depends on credibility, benevolence, and confidence among learners
- Interaction depends on honesty in feedback, trust and safety among learners
- Common expectations depend on commonality of the same goals that is mutual learning.

For the purposes of this research, Rovai’s definition of sense of community in the classroom will be used (Rovai, 2001). According to Rovai, sense of community in the classroom

is a feeling that members have of belonging, a feeling that members matter to one another and to the group, that they have duties and obligations to each other and to the school, and that they possess shared expectations that members' educational needs will be met through their commitment to shared learning goals. Rovai's definition of sense of community in the classroom has been used as a theoretical foundation for this study as it inculcates all generally accepted elements of learning community: shared responsibility, shared learning, and shared process of learning.

Why Classroom 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 (Ritter et al., 2010). On the other hand, a classroom with a weak community has members that do not feel a connection with each other, are likely to be mistrustful and are not inclined to help each other.

Rovai (2001) explains that in a community of learners, as students meet regularly with one another, spirit and trust often manifest themselves automatically. As learners actively contribute ideas and discuss them together, they mutually benefit. Over time, as learners get to know each other, certain emotional connections develop, thus, facilitating the creation of interpersonal relationships. Similarly, Rovai (2002c) posits that, "if learners feel a sense of community, it is possible that this emotional connectedness may provide the support needed for them not only to complete successfully a class or a program but also to learn more" (p. 321). Yuen (2003) states that by focusing on collective knowledge building, learning communities usually help individual learners accomplish what they could not otherwise on their own. A classroom community helps reduce transactional and physical distance because students (Pigliapoco, & Bogliolo, 2008). Since learners in a community environment are integrated into

the academic context, they do not feel alone and collectively help each other overcome obstacles in learning.

When students experience a strong sense of community, they are motivated to learn (Rovai, 2002a), they listen to others more willingly, and they contribute to the class discussions more openly. Communities in which members experience a high sense of community feel safe to try new and different things. They do not have the fear of failing. In doing so, they learn; and as a result, feel more satisfied with their learning. In a classroom with a strong sense of community, learners act as a resource for each other (Ritter et al., 2010). Together, they explore new ideas, give assurances to each other on new understandings and discoveries. In this way, sense of community allows learners to construct new meaning through active involvement (Shackelford & Maxwell, 2012).

Sense of community is imperative to sucessful learning (Graff, 2003). It plays a critical role in academic success and persistence in higher education (Shea et al., 2006). A high sense of community results in improvements in persistence, both within a single course and throughout a program of study (Rovai, 2002c). Students perceive greater academic achievement in environments in which attention has been focused on improving community (Drouin, 2008; Rovai, 2002c). A high sense of community results in successful achievement of learning outcomes (Palloff & Pratt, 2007).

A high sense of community in classrooms has been shown to have a positive correlation with higher self-worth, better social skills, academic self-efficacy (Bateman, 2002), better social cohesion and a higher commitment towards the educational institution (Locks, Hurtado, Bowman & Oseguera, 2008). A high sense of community also leads to reduced loneliness, distress, truancy, violence, substance abuse, and other problem behaviours (Chipuer, 2001).

Moreover, students who experience a high sense of community develop more concern and respect for peers and teachers, more acceptance of those outside of their immediate friendship group, and more altruistic or prosocial behavior (Astin, 1994). Redman and Fisher (2002) suggest that benefits of strong, positive sense of classroom community extend beyond the classroom and school. They explain that high sense of community can compensate for lack of support, cohesion, acceptance and attachment at home and in the neighbourhood. Being accepted in a classroom and having a network of friends for social support can be of significant value to some students. Students who lack social support from families, neighbourhoods, and personal friendships can rely on connections made in classrooms when problems arise.

Students are more satisfied when they perceive a high level of social interactions (Swan 2001). They also learn more and better when they perceive that they are interacting with their peers (Picciano, 2002). Participants' perceptions of interactions with others are more significant than actual interactions (Rovai, 2002; Swan & Shih, 2005). Students attach more value and meaning to social interactions where they perceive the learning environment to be approachable and close-knit (Rourke, Anderson, Garrison & Archer, 1999). Palmer (2002) summarizes that "By now we have enough research (to say nothing of personal experience) to know that the fastest and deepest learning happens when there is a dynamic community of connections between teacher and student and subject" (p. 185).

Measuring Sense of Community

Sense of community is difficult to measure. There are a variety of factors impacting sense of community such as frequency of interaction (Dawson, 2006), quality of interaction, content, and context of interaction (King & Ellis, 2012) making it challenging to come up with a standard way of measuring sense of community in a classroom. Most of the time, research

studies focus on the opportunities or intention to interact, and very rarely do they assess actual interaction (Bernard et al., 2009).

The very first scale to measure sense of community, which focused on the community at large, was developed by Doolittle and MacDonald in 1978 (as cited in McMillan & Chavis, 1986). Since then a number of scales to measure the construct have been developed.

Based on his sense of what sense of community is, and on his definition, Rovai (2002b) developed a self-reporting questionnaire called Classroom Community Scale (CCS) to measure sense of community in a learning environment. The CCS provides scores measuring total sense of community, as well as two sub-scale scores, sense of connectedness and sense of learning. The CCS is described in more detail in the Method section.

On-line and Blended Learning Contexts

Distance education has been around since early 19th century. It started as correspondence courses, then evolved into television courses and finally into web-based courses in the mid-1990s (Perry & Pilati, 2011). Internet-based on-line courses saw phenomenal growth from late 1990s to early part of the 21st century (Allen & Seaman, 2008; Bonk & Graham, 2006). Growth of on-line courses led to the recognition that text-based communication tools are powerful tools for communication, collaboration and reflective practice thus enabling and supporting the creation of learning communities (Walther, 1994).

However, as on-line courses gained popularity, research began to show that they were suitable for all types of learners and faculty (Marino, 2000). They work well for students who are self-regulated, independent and internally motivated. On the other hand, students who do not possess these characteristics, struggle with the course structure and layout, managing their time independently and maintaining self-motivation.

Emerging research on limitations of on-line courses, in addition to increasing pressure on institutions to better utilize resources and on-going advancements in on-line tools and technologies led to the growth of blended or hybrid courses. Blended learning has been defined as "a mix of classroom and on-line learning that includes some of the conveniences of on-line courses without the complete loss of f-2-f contact" (Rovai & Jordan, 2004, p. 1). Some scholars are of the opinion that blended learning has the potential to transform higher education (Garrison & Kanuka, 2004). As blended learning contexts support learner-centered education (McCombs & Vakili, 2005), they have the potential to provide a critical breakthrough in improving learning (Hiltz & Turoff, 2005).

As post-secondary institutions evolve, they update their policies and practices which impact the teaching and learning environment. Many post-secondary institutions try to be student-centric in order to ''provide for a larger and more diverse cross-section of the population, to cater for emerging patterns on educational involvement which facilitate lifelong learning and to include technology-based practices in the curriculum'' (Hicks, Reid & George, 2001, p. 143). It is imperative to assess and evaluate the effectiveness of various teaching and learning environments, so that educators can make rational choices about pedagogical strategies and approaches.

Sense of Community in Different Learning Contexts

Traditionally, learning communities were limited to physical spaces in classrooms and schools. Growing use of technology in education has allowed communities to extend beyond the four walls of the classroom. On-line and blended learning contexts rely heavily on the use of computer-mediated communication to foster learning communities. Although in literature, the significance of sense of community in learning is often associated with on-line education,

McKinney et al. (2006) confirm that the need for learning community is independent of learning environment and medium.

Russell and Ginsburg (1999) note that there are inherent differences in f-2-f and on-line learning communities. They explain that structurally, traditional communities tend to be more linear while, on-line communities are "multidimensional, and multilayered" (p. 1). On-line communities exhibit various characteristics and purposes and adapt according to the nature of learning environment and to meet the needs of learners. They are not based on a single pre-specified learning theory nor do they prescribe to a specific learning model. In fact, on-line learning communities advocate "emerging psychological theories of development in adulthood" (p. 1) and incorporate learning strategies that are transformative and support self-directed learning. Blended learning contexts enjoy the advantages of both, f-2-f and on-line learning contexts. Blended courses frequently incorporate tools like discussion boards, wikis, blogs and chat to facilitate discussion and interaction. Use of such tools can enhance the development of sense of community among learners by offering opportunities for regular interaction (Lord, & Lomicka, 2008).

Various aspects of community in on-line, f-2-f, and blended courses have been investigated and compared. Participants' perceptions of sense of community, differences among genders' perception of community, impact of teaching presence on community, relationship between sense of community and performance have been studied.

On-line education programs, when compared to f-2-f cohorts, experience lower persistence rates (Angelino, Williams, & Natvig, 2007; Kanuka & Jugdev, 2006; Liu et al, 2007; Park & Choi, 2009). A lower sense of community (Pigliapoco & Bogliolo, 2008; Rovai & Gallien, 2005; Rovai, 2002a), technological issues, loneliness and feelings of isolation (Park &

Choi, 2009), are among reasons for lower persistence rates in on-line programs. A qualitative study by Zembylas, Theodorou and Pavlakis (2008), found that loneliness and isolation were the two major categories of emotions reported by learners. Students used words such as alone, desperate, hopeless, distress, stress, and anxiety to describe their states of emotion in diary entries, interviews, final reports, phone conversations, and e-mails. When learners experience such negative emotions they feel disconnected from other learners and are neither willing nor able to engage and support their peers in the course (Furrer, Skinner & Pitzer, 2014).

Compared to on-line classes, students' perceive that f-2-f classes are better as they provide more opportunities to get to know instructors and classmates; friendships are more likely to occur in f-2-f classes (Glisan and Trainin, 2006). Students also indicated that they attached more value to friends in f-2-f classes compared to on-line classes. In spite of noting these differences in perceptions, the study also concluded that there was no significant difference in academic performance between the f-2-f and on-line groups of students.

On-line courses, by allowing students to engage in deep discussions, support the development of critical and, higher-order thinking skills. Asynchronous discussions in on-line courses are powerful tools for developing reflective thinking by providing learners with extra processing and thinking time (Rovai, 2002a). On the other hand, f-2-f discussions are often found to be superficial, spontaneous and more likely to be dominated by a few students.

Studies conducted to compare sense of community within on-line, f-2-f and blended learning contexts have found that sense of community is highest in blended contexts (Rovai & Jordan, 2004; Rovai & Gallien, 2005). It is likely that some level of f-2-f interaction increases the sense of community within a course. Based on these findings, these studies suggest that

synchronous instruction, whenever possible should be implemented, in order to assist in the growth of sense of community.

A review of existing research investigating sense of community found no research study focusing specifically on sense of community among learners in trades-related programming. As more and more community colleges and polytechnics develop and deliver on-line and blended trades-training programs, there is a need to understand how and which learning contexts; on-line, blended or f-2-f support the development of sense of community among learners. Therefore this research study aimed to compare students' perceptions of sense of community in the trade-related course across three different learning contexts; on-line, f-2-f and blended and determine how the different learning contexts contribute towards the establishment of sense of community among learners.

Conclusion

Social learning theories underscore the importance of regular interactions among learners. Growing recognition that learning is social in nature is paving the way for educators to create learning contexts that promote and support social and academic interactions. Strong sense of community in the classroom has been shown to reduce feelings of isolation, improve learner motivation, satisfaction, as well as academic performance (McKinney et al., 2006). As educators infuse technology in to their pedagogical practice they need empirical evidence about what works with the students and why. This research aims to contribute to that evidence base through quantitatively and qualitatively examining which learning contexts contribute most to the development of students' sense of community and how.

Method

Context and Setting

The setting for this study was within a single polytechnic in Western Canada. The target population was students enrolled in trades-related apprenticeship and non-apprenticeship training programs. Parts Management Technician (PMT) Certificate and Parts Person Apprenticeship programs delivered through Saskatchewan Polytechnic (SaskPolytech) were chosen as the two programs from which participants were drawn for this study. PMT Certificate is a 30-week certificate program that provides knowledge and skill development in customer service at the parts counter, dispensing parts to a dealership's service department, and selling related products and whole goods (SaskPolytech, 2016). The program is offered in f-2-f, blended, and on-line formats. The Parts Person Apprenticeship program is a three-year program that is also offered in f-2-f, blended, and on-line formats. All f-2-f training for both of these programs takes place at SaskPolytech's main campus in Saskatoon, Saskatchewan. Both programs operate under the same academic and administrative leader known as the Program Head.

Purposive sampling was used to select participants for this study from the PMT Certificate and Parts Person Apprenticeship programs, as these programs are the only known training programs at SaskPolytech that offer full programming to three different types of cohorts (f-2-f, blended and on-line). Selecting students from the same program ensured that all the students took the same training (i.e., same curriculum, same program requirements and comparable or same instructional resources), thus, helping control for a number of other variables that may have had an influence on students' sense of community. In the f-2-f format, students attended classes on campus alongside their student colleagues for 30 hours per week. Students received instruction from various instructors, worked independently on some projects

and worked in groups on other projects. In the on-line offering of the courses, students never met their student colleagues in person. Instead, they worked in virtual discussion forums and chat rooms through the on-line learning system that SaskPolytech used for on-line course delivery. Students worked independently on some projects, and worked in virtual groups on-line, completing projects by submitting portions of their work for others in their group to comment on, edit, revise, and evaluate. The blended cohort of the program received their instruction and training through a combination of on-line modules and f-2-f modules. This mode of delivery provided complete flexibility to students by allowing them to pick which modules they wanted to take f-2-f and which they wanted to take on-line.

Recruitment of Participants

All students who had completed one full year of PMT Certificate program or one full level of Parts Person Apprenticeship training within the last twelve months were considered eligible to participate in the study. I chose students who had completed a full year of the program because I hypothesized that they would have had more time to reflect on sense of community after completing the program instead of trying to reflect on sense of community after only completing part of the program. To minimize the effect that the passage of time might have on student's memory of the program, and their sense of community during that time, participants were recruited from students who had completed training within the last twelve months only. Program alumni who had completed their training more than twelve months ago were not considered eligible. A total of 90 former students were considered eligible for recruitment as participants.

The Program Head used the SaskPolytech email system to invite all eligible students (n=90) to participate in this research study. Because of institutional privacy policies, I was not

allowed to contact students directly for recruitment purposes. The email contained a recruitment letter, survey, and instructions for next steps (Appendix A). Participants were instructed to complete the survey and submit it as an email attachment to me by the end of the following week.

Participant consent for the survey was implied if they choose to complete the survey. The recruitment letter also informed participants who completed the survey that I would be contacting them to request an interview either by telephone or in person. Consent for either interview format was sought prior to the start of the interview session. In-person interview participants were given a copy of the consent form that they were required to sign, keep a copy for their records and return a copy to me for filing. For phone interviews, the consent form was read to the participants before any questions were asked. Oral consent was sought over the telephone and then I signed the consent form noting their consent along with the time and date of the interview.

Twelve *(n=12)* students responded to the invitation to complete and submit the Classroom Community Scale (CCS). An equal number (4) from each of the cohorts (i.e., on-line, f-2-f, and blended) completed the survey. Three (*n*=3) students—one from each learning context—agreed to be interviewed further regarding their sense of community in the program. Two participants were interviewed over the phone, and one participant was interviewed in-person. To protect the identity of participants, pseudonyms were used to report results.

Data Collection Method and Measures

This study used a mixed methods approach. Quantitative and qualitative research methods were employed to collect and analyze the data. The Classroom Community Scale (Rovai, 2002b) was administered to measure the level of sense of classroom community

(Appendix B). To gain insight into how different learning contexts contribute to students' sense of community, three participants, one from each learning context, were interviewed. All participants were invited to be interviewed. The first respondent who was willing to be interviewed from each learning context was recruited.

A case study approach was used, as case studies are the preferred strategy when "how" and "why" questions are posed (Yin, 1994). Qualitative case studies are best suited for examining a phenomenon in context to explore relationships, communities, or programs (Yin, 2003). Case studies "can bring about the discovery of new meanings, extend the reader's experience, or confirm what is known" (Merriam, 2009, p. 44). Stake (1995) explains that case studies lend themselves for use in qualitative research where the phenomenon needs a holistic, interpretive and empirical examination. Detailed data collected through case studies was used to explain how different learning contexts contributed to a sense of community among students.

A collective case study approach, where one case study from each of the three leaning contexts, was chosen for analysis of differences and similarities between the learning contexts. The collective-case study approach enables the researcher to explore differences within and between cases (Stake, 1995; Yin, 2003).

Classroom Community Scale (CCS: Rovai, 2002). The CCS was developed by Rovai (2002b) as an instrument to measure students' experiences of community in an on-line classroom. The original scale consisted of 40-items, which upon field testing was refined to 20-items. The concept of classroom community, which was used to develop the CCS, was based on the concept of community as present in the professional literature applicable to the field of education. Moreover, three educational psychology university professors rated all 20 items as totally relevant to the concept of community in the classroom, thus affirming the validity of the

scale. Cronbach's coefficient of 0.93 and split-half of 0.91 testified the reliability of the instrument.

The CCS is a self-reporting, 20-item questionnaire. Following each item is a five-point Likert-type scale of potential responses ranging from strongly agree (SA), agree (A), neutral (N), disagree (D), to strongly disagree (SD). Students were instructed to choose the one statement that most closely reflected their feelings about the item in relation to the course that they just completed. Each item on the survey was weighted according to a scoring key provided by the survey author (Rovai, 2002b). Items were reverse-scored for negatively worded statements to ensure the most favourable choice was assigned the highest value of 4 and the least favourable choice was assigned a value of 0. Even-numbered items on the survey assessed influence of feelings of community on learning and odd-numbered items on the survey assessed feelings of connectedness among learners. The total CCS score were calculated by adding points assigned to each of the 20 five-point items; the learning and connectedness sub-scores were calculated as the sums of even and odd items, respectively.

Interviews. Students who completed the CCS and indicated their willingness to be interviewed were contacted by telephone to arrange a time for the interview; either by telephone or in-person. Three (n=3) students, Elizabeth (face-to-face context participant), Brad (on-line only context participant), and Shelley (blended format participant), agreed to be interviewed regarding their experiences as they related to their sense of community from their point of participation in their studies.

Brad and Shelley were interviewed over the phone, and Elizabeth was interviewed in-person. All interviews were audio-recorded and transcribed for analysis. To get an in-depth understanding of how different learning contexts were contributing to development of sense of

community among learners, a list of interview questions was prepared (Appendix C). At the interview, the participants were asked questions such as: What kinds of opportunities were you given to interact with your colleagues? How frequent were those interactions? How meaningful were those interactions?

Quantitative Analysis

Survey Analysis. Survey data analysis was conducted using SPSS (Statistical Package for the Social Sciences). Descriptive statistics from the survey data were used to report on participant responses to the questions posed. Demographic data were compiled to describe the study participants and examine demographic differences among cohorts. Data from 20 Likert-scale items were quantitatively analyzed to ascertain students' sense of classroom community. Descriptive statistics were calculated for each item.

All of the 20 scores from the survey were then added to obtain an overall CCS score. Each survey item was rated from strongly agree to strongly disagree. Negatively-worded items were reverse-scored that is 0 for strongly agree to a 4 for strongly disagree, CCS raw scores ranged from a minimum of zero to a maximum of 80. Higher scores indicated a stronger sense of community and a lower score indicated a weaker sense of community. In addition, two sub-scores, connectedness (sum of odd-numbered items) and perceived learning (sum of even-numbered items) were calculated. Individual total scores for connected and perceived learning ranged from 0-40.

A casual-comparative design was used to determine if mean differences in sense of community exist among the three different cohorts. A one-way analysis of variance (ANOVA) was conducted to assess differences between cohorts on their overall reported CCS scores.

Significant differences between groups would indicate that cohorts differed in how they perceived a sense of community within their learning modality.

Qualitative Analysis

Interviews. Audio recordings of interviews were transcribed. Interview data was read and re-read to get a general sense of information. Data was then analyzed manually to search for patterns. Theme identification techniques of pawing, and cutting and sorting are recommended for manually analyzing a few interviews (Ryan & Bernard, 2003). Using the pawing technique, the material was proofread, read over multiple times, and key phrases highlighted with different colour pens. Once a pattern was identified, an attempt was made to interpret it in terms of either one of the foundational learning theories or the setting in which it occurred. Interview data was also analyzed in the light of quantitative data to explain the experiences of participants. A three-part analysis for collective case studies, as recommended by Creswell (2007) was conducted. In the first step, a within-case analysis was done to provide a detailed description of each theme within the case. This was followed by a cross-case analysis to identify themes and commonalities or differences across cases. Lastly, an attempt was made to interpret meaning of the findings in reference to recent literature.

The interpretive model of analysis was generally followed which entailed reading of the data for a holistic view, reflecting on impressions, cross-checking with other data sources, rereading data and coding into themes. Existing literature was also referenced on an on-going basis to enhance data analysis. Finally, the case study was written in a narrative format providing descriptions of critical events and interactions that impacted sense of community.

Results

This section presents statistical findings that examined the level of sense of community and comparisons among the three cohorts under examination. In addition, it presents findings from semi-structured interviews with one student from each cohort.

Quantitative Analysis

Twelve participants completed the survey reporting their perceptions of sense of community in their respective learning contexts. The survey was comprised of five demographic questions, followed by 20 questions measuring self-reported sense of community (Appendix A). Analysis of variance of sense of community with age or gender was not done because of the small number of participants.

Description of Sample. The sample recruited for the study consisted of a mix of male (33.33%) and female (66.67%) participants. Majority of the participants were in the age range of 18 to 34 (83.33%), with only two participants who were 35 or older. The sample consisted of an equal number of participants from the on-line, f-2-f, and blended learning contexts.

Table 1

Descriptive Statistics of Participants

Variable		n	%
Gender			
	Male	4	33.33
	Female	8	66.67
Age			
	18-24	6	50.00
	25-34	4	66.67
	35-44	1	8.33
	44 or older	1	8.33
Learning Context			
	On-line	4	33.33
	F-2-f	4	33.33
	Blended	4	33.33

Level of Sense of Community as Measured by the CCS. The 20 items on the CCS provided an overall CCS score, as well as two subscale scores, connectedness and learning. These scores are reported in Table 1. The total CCS scores reported by participants ranged from a low of 14 to a high of 80. Scores reported on Connectedness and Learning subscales ranged from a low of 5 to a high 40, and from a low of 9 to a high of 40, respectively. Lowest scores were reported by Participant # 1 who studied in the on-line context while, the highest scores were reported by Participant # 5 who studied in the f-2-f context.

Table 2

Demographic Data and Individual CCS, Connectedness and Learning Scores

Participant	Gender	Age	Highest Education	Context	Total CCS Score	Connectedness Score	Learning Score
1	F	25-34	Grade 12	On-line	14	5	9
2	F	25-34	Technical training	On-line	54	24	30
3	M	18-24	Some college	On-line	50	18	32
4	M	18-24	Grade 12	On-line	60	28	32
5	F	18-24	College graduate	F-2-F	80	40	40
6	F	18-24	Technical training	F-2-F	36	13	23
7	M	18-24	College graduate	F-2-F	70	37	33
8	F	25-34	Technical training	F-2-F	55	25	30
9	F	25-34	Technical training	Blended	62	29	33
10	F	18-24	Grade 12	Blended	58	26	32
11	M	44+	Grade 12	Blended	76	36	40
12	F	25-34	College graduate	Blended	63	28	35

Study participants reported an overall mean CCS score of 56.50 (*SD*=17.18), with subscale mean scores of 25.75 (*SD*=10.05) for Connectedness, and 30.75 (*SD*=8.19) for Learning. Average CCS score reported by participants from blended and f-2-f learning contexts were higher than the overall mean CCS score reported by all the participants. On the other hand, average CCS score reported by participants from the on-line context was lower than the overall mean CCS score reported by all the participants.

Table 3

CCS Overall and Subscale Scores

Scores	Mean	*SD*	Min	Max
On-line CCS	44.50	20.74	14	60
On-line Connectedness	18.75	10.04	5	28
On-line Learning	25.75	11.20	9	32
F-2-F CCS	60.25	19.15	36	80
F-2-F Connectedness	28.75	12.34	13	40
F-2-F Learning	31.50	7.04	23	40
Blended CCS	64.75	7.80	58	76
Blended Connectedness	29.75	4.35	26	36
Blended Learning	35.00	3.56	32	40
Total CCS	56.50	17.18	14	80
Total Connectedness	25.75	10.05	5	40
Total Learning	30.75	8.19	9	40

Notes. SD stands for standard deviation.

The average CCS score reported by learners in the blended context was highest at 64.75 (SD=7.80), followed by f-2-f learners who reported an average CCS score of 60.25 (SD=19.15). Learners in the on-line context reported the lowest average CCS score of 44.50 (SD=20.74).

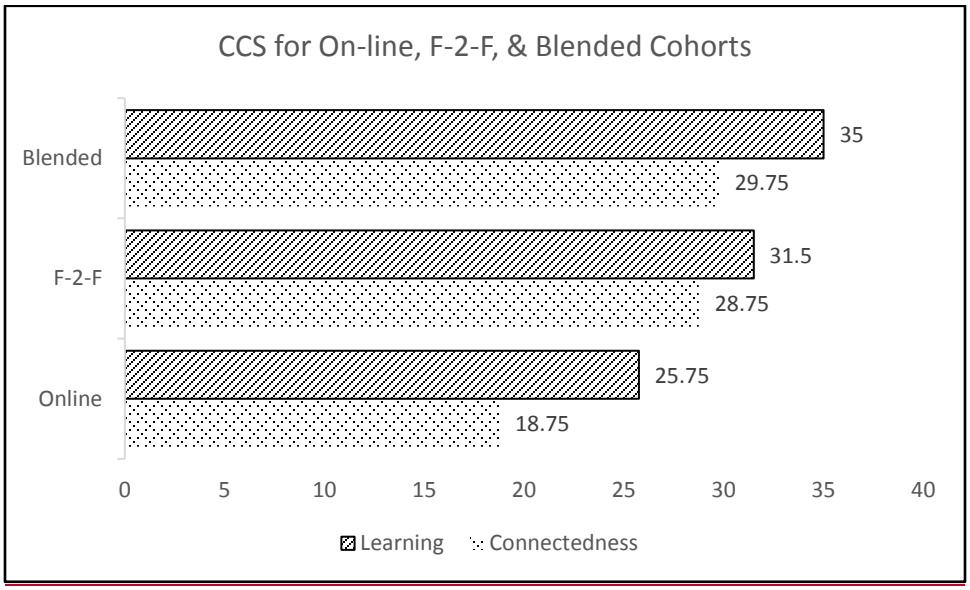

Figure 1. Mean Scores for On-Line, F-2-F & Blended Learners

The null hypothesis states that there is no significant difference in the perceived sense of community among on-line, f-2-f, and blended cohorts.

$H(_0) = \mu_1 = \mu_2 = \mu_3$

where μ_1 is the mean CCS score for on-line cohort, μ_2 is the mean CCS score for f-2-f cohort, and μ_3 is the mean CCS score blended cohort.

A one-way analysis of variance test was used to assess differences between cohorts on their overall reported CCS scores. Statistical analysis gave a p-value = 0.26 which is greater than 0.05, and F calculated = 1.58 which is less than Fcrit. Perceived sense of community results indicate no significant differences between groups, $F(2, 11)= 1.58$, $p=0.26$. Moreover, the small

size of the sample results in low statistical power to detect differences. So, we cannot reject the null hypothesis.

Table 4

Analysis of Variance Summary of Cohorts

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
On-Line	4	178	44.5	430.3333
F-2-F	4	241	60.25	366.9167
Blended	4	259	64.75	60.91667

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	904.5	2	452.25	1.580987	0.257972	4.256495
Within Groups	2574.5	9	286.0556			
Total	3479	11				

Qualitative Analysis

Three students participated in a semi-structured interview. The interview included questions (Appendix B) designed to help students explain in their own words how their own learning modality contributed to their perceived sense of community. Participants were asked about their perceptions of frequency, type and quality of interaction with their peers and how those interactions influenced their feelings of community towards their classmates. Names used below are pseudonyms.

F-2-f Classroom. Elizabeth is an 18-24-year-old, single female, who has completed a college program. She decided to enroll in a f-2-f class cohort because she lives in the community close to the college.

Elizabeth reported a total CCS score of 80, the highest value possible, with 40 on each of the subscales of connectedness and learning. She expressed extreme satisfaction with the overall

learning experience in the f-2-f classroom. She felt that there were lots of opportunities to interact in the classroom. Some of those interactions involved the whole classroom, some of them were within small working groups, and others were one-on-one with the instructor. There was also a variety of formal interactions like discussions, group work, and student-led presentations. In addition, students often interacted with each other and sometimes with their instructors informally.

Student learning was enhanced by hands-on activities. Elizabeth recalls an outdoor activity where the instructor led the whole class outside to an area where they all participated in taking apart a car engine. She found this activity especially useful because it allowed students to learn-by-doing. As the students tore apart the engine, they discussed the functioning and significance of each part. For students who had worked with farm equipment, this was an opportunity to compare small engines with larger engines. This activity provided students with a constructivist learning environment in which they played an active role in their own learning as well as contributed to each other's learning through peer interactions.

Student presentations were scheduled regularly throughout the course. Elizabeth recalls being giving an opportunity to present to the whole class about her experience with a race car engine. She brought her personal race car engine into the classroom and gave a presentation to the whole class about how its' parts function. Her presentation was very well received. She felt she contributed to her classmates learning: "I realized I had valuable things to offer to my classmates. That empowered me to continue sharing my knowledge …. Since then I have never felt intimidated in a classroom". This was a very significant experience in this student's life. Her outlook on learning evolved as she realized that each student brings valuable experience to the classroom and witnessed how much students can learn from each other.

Elizabeth felt that informal social contact among students and with instructors helped develop connections and provided an enhanced sense of community in the classroom. "Beer nights were popular. Although I could not go with them as I was just shy of being eighteen, I would hear lots of stories in the class the next day". She observed that students who hung together after school also tended to help and support each other during classes. Over the duration of the course, instructors and department head organized social events like team-building days or student appreciation days. Elizabeth felt that such events significantly enhanced feelings of sense of community. She expressed:

> pizza lunches around Christmas, student appreciation days, team building days and all those events gelled us together… some of the activities were funny like lifting a cup full of coffee without spilling… not sure how it related to team-building…. however, I noticed how each one of us tackled that activity differently… maybe they wanted us to appreciate that we are all diverse (personal communication, June 25, 2015).

She suggested that there should have been more social events at the beginning of a class or program as they would help bring students closer together, increase their comfort level with each other and, overall the class becomes more close-knit.

Elizabeth's class regularly went on field trips. She recalls one particular field trip where all of the students and the instructor headed to a nearby restaurant for lunch afterwards. She expressed "that afternoon brought us closer together. I got to know several of my classmates better… some of whom I had never talked to before". She also experienced that as they sat down together, some of them discussed what they had learned at the field trip. Elizabeth also got a change to reiterate her observations from the field trip, which helped her confirm her

understanding. She recalls telling her instructor “after each field trip, we should spend some time reflecting on what we learned and if it is accompanied by lunch it will be even better”.

On a few occasions, the f-2-f students got to interact with their on-line counterparts. They would give presentations in their class and the on-line students would join-in via a synchronous communication tool. Elizabeth experienced that her f-2-f classmates participated actively by asking questions and sharing their comments, while the on-line students more mostly passive listeners. She expressed that “group dynamics were interesting. It was hard to ignore that on-line students did not participate in the discussion as much as the f-2-f students did”.

On-line Classroom. Brad is an 18-24 year old, single male with some college education. He decided to enroll in an on-line class cohort because he worked full-time.

On the CCS, Brad reported a total score of 50 comprised of a score of 18 on the subscale of connectedness, and a score of 32 on the subscale of learning. In comparison to the average sample scores, this participant reported lower than average CCS, and was lower than average on the subscale of connectedness. However, he reported higher than average on the scale of learning. Overall, Brad expressed satisfaction with the course content. However, he had some apprehensions about on-line learning, in general, and some on-line course design features, in particular.

Brad indicated that there were some opportunities to interact with other students in the classroom. There were several discussion forums, and some group work and presentations that required interactions with other students. Most of the discussion forums required students to post their responses and respond to a few items posted by their classmates. The discussion forums were marked by the instructor using a rubric that was posted in the course. Brad participated in the discussion forum as and when required. He did not find the discussion forums

engaging. The only motivation factor for him was the marks attached to the discussion. He remarked “for the most part I did not participate a whole lot in those discussions except where I had to for a mark”.

Brad felt that the design of the course did not lend itself to much interaction. Since students were scattered in the course (i.e. they were actively working on different sections of the course), interactions among students were limited. He explained that some students were way ahead in the course likely because they spent more time studying. Others, like him, who worked full-time could devote only a limited amount of time per day to the on-line course and progressed through the course slower.

Moreover, he felt that the on-line students, being geographically dispersed did not have any physical contact with each other. As a result, they did not feel a sense of belonging with others in the course. Brad had trust issues with his classmates. He chose to do his group assignments independently. “I find that in the on-line medium things are different. You know a person by voice only… it is harder to trust and rely a person that you have never met”. This worked for him as it supported his independent learning style. “I find that I learn best independently… at my own pace. I do not feel much need for interaction with others.” Brad did not feel lonely in the course in spite of having limited interactions with his classmates. In fact, he specifically mentioned that overall, he felt content with the amount of interaction with other students in the course.

The course included a discussion area set up as a “water-cooler” section for informal chats among students. Brad observed that some students engaged with others in non-academic, social kinds of interaction through that discussion area. For instance, there were conversations about scheduling of group work, discussing and supporting each other on technical issues with

the course, planning social activities, discussing sports and other areas of common interest. Although he did not participate in that discussion area except when there were technical issues, a number of other students did. He felt that participation in that forum was a matter of personal preference.

Brad indicated that as an on-line learner, his commitments and priorities were different from full-time learners, especially those who were taking the studying in the f-2-f medium. Working full-time, he was able to devote only a small fraction of his day to course work. Flexibility in scheduling of on-line classes allowed him to continue working full-time. He usually spent a part of his evening studying on his computer.

Brad was very pleased with his interactions with the course instructors. He found them very responsive, readily available, and eager to help. "I phoned the teacher whenever I needed… in the beginning I texted them." They were easy to correspond with and always respectful of my questions: "the instructors did not make me feel stupid or that I did not know much." For all those reasons, Brad chose to interact with his instructors over his classmates and any other student support services. In fact, instructors were Brad's first point-of-contact for all technical issues as well.

In addition to his instructors, Brad had another very reliable and accessible resource he could easily consult with for any course related matters. One of Brad's co-workers, who had taken the same program in the recent past, proved to be very helpful to Brad. "I relied on him for help whenever I was having issues". It seems that Brad developed a sense of community with his instructors and his co-worker, while limiting his interactions with his classmates to only when necessary.

Having said all that, Brad felt that f-2-f students, in comparison to on-line students are more committed to learning. They are more motivated and develop relationships with other students where they can trust each other more. Brad concluded that as much as the on-line medium provided him the flexibility and allowed him to learn independently, and at his own pace, if he had a choice, he would take this training in the traditional, f-2-f classroom.

Blended Classroom. Shelley is an 18-24 year old female who was in a relationship at the time of the interview. She completed her technical education from a college.

Shelley reported a total CCS of 36, comprised of a score of 13 on the scale of Connectedness and a score of 23 on the scale of Learning. These scores are lower than sample average on all three scales, total CCS, scale of connectedness and scale of learning.

Shelley indicated that the blended course offered numerous opportunities for interaction with other students. There were several discussion forums and some small group work opportunities that required interactions with other students. The discussion forums were included in both the f-2-f as well as the on-line portion of the class. Sometimes, discussions would start in the f-2-f class and carry on to the on-line medium.

Shelley found the f-2-f discussions to be more meaningful than the on-line discussions. "In f-2-f, you learn from discussions; they are real-time…You can reiterate a point; have an argument or real-time discussion right then and there… there is peer pressure… you get going in a discussion." She felt that in the on-line medium students participate in discussions mostly because they are required to and so, the discussions are not as meaningful. Shelley expressed that "on-line discussions are superficial, they lack spontaneity… they are staggered, they drag on and so, they are not as beneficial."

Shelley felt her instructors' presence much more in the f-2-f portion of the class than in the on-line portion. She said, "In the f-2-f class, instructors play a big role." They make a significant contribution to the students' learning by lecturing, facilitating and participating in discussions, reviewing presentations, giving out group work etc. They also enrich the learning environment by telling stories and sharing their personal and work-related experiences. Shelley felt that in the on-line medium instructors do not have much presence. They communicate only when needed. Moreover, the majority of the communication is limited to notifications about upcoming exams, missed deadlines, updates to course schedules, and check-ins to answer student questions. The personal touch goes missing. "I never got the one-on-one in the on-line that I did in the f-2-f" concluded Shelley.

Shelley enjoyed the flexibility offered in the blended classroom. The course work that needed to be done on-line could be done at her own pace, in her own time. On the other hand, f-2-f class-time provided the extra push to stay on task. "In the f-2-f, you push yourself more, to keep up with your classmates, there is peer pressure."

Shelley felt that the f-2-f medium was much better set up for developing classroom community as it affords students the opportunity to spend long periods of time in each other's company. The f-2-f medium pulls the students together in the same physical space. This usually results in lots of interactions. "You are in a building with your classmates for 8 hours whereas on-line, you are not. You generate more communication and a stronger sense of community in the f-2-f classroom". In comparison, in the on-line medium, interactions among students are fewer and limited in nature, therefore students do not experience as deep a sense of community as they do in the f-2-f classroom.

Although Shelley experienced some sense of community in her blended classroom, she felt that the classroom community did not make a significant contribution to her learning. "I did not get too involved with my classmates… I was there to complete a course and be done. I was not looking for interaction".

Shelley was in a unique situation. As an apprentice, she was working in an industry that no other student had worked in. She expressed a lack of common ground with other students. "I felt that where I worked and what I did stood out from what others did. So, I did not have anything beneficial to add to what others do in their workplaces." In return, for very similar reasons, other students' did not contribute much to Shelley's learning experiences. Shelley felt that since the students worked in numerous different industries as apprentices, they had experience with different types and ranges of products. "It is hard to have discussions about a new technology or a new product when everyone is working in a different industry. If everyone was working in the same industry or sector or form of trade, it would be possible to have a legitimate discussion". She concluded that "Lack of commonalities hinders meaningful discussions".

Themes

Discussions. Content-related discussions in the classroom contributed to sense of community among learners. Discussions were an opportunity for learners to share their knowledge, provide and receive feedback from each other, confirm new knowledge, and appreciate diversity of ideas. In comparison, f-2-f discussions were found to be more effective than on-line discussions for facilitating sense of community, and since f-2-f discussions were more spontaneous, students felt motivated and sometimes compelled to participate. On the other

hand, on-line discussions were found to be not as engaging largely because they were staggered and not in real-time.

Instructor presence. Instructor presence contributed towards students' sense of learning and sense of connectedness in the classroom. Instructors contributed to students' sense of community by sharing personal anecdotes, being available to students, being responsive to student needs, and by trusting students'. It was felt that instructor presence was somewhat diminished in the on-line learning context as the instructor communication was limited to important notifications and reminders.

Social interactions with peers. Formal and informal social interactions with peers facilitated building of sense of community among learners. In the f-2-f classroom, ice-breaker and team-building type activities, in addition to informal social get-togethers, led to building of community. In comparison, in the on-line classroom, a lack of sense of community was felt because of the absence of opportunities for social interactions and lack of physical contact with other learners.

Student-centered pedagogical approaches. Classroom activities like student presentations, group work, and learn-by-doing enhanced sense of community among learners. During such activities, instructors acted as guides or mentors, while the students were provided opportunities to share their experiences, ideas and knowledge. These opportunities helped developed feelings of interdependence, cohesion and trust among learners, thus facilitating the development of sense of community in the classroom.

On-line course design. The self-paced on-line course did not lend itself to community building. On-line discussions, being staggered did not promote feelings of community among learners.

Student characteristics for feelings of community. It appears that individual student characteristics impacted their sense of community. Individuals who sought company and closeness with others looked for opportunities to develop relationships with others. On the other hand, students who were independent and preferred to learn individually at their own pace, did not seek active opportunities to develop relationships with other students.

It appears the course design in all three contexts offered students opportunities to interact with each other through discussions and group work. Elizabeth experienced a strong sense of community with her classmates and instructors which she attributes was developed mostly through informal interactions at social events such as pizza parties, lunches, beer night etc. Since the students developed feelings of trust and belonging, they contributed to each other's learning. On-line interactions were found to be less meaningful and engaging than real-time, f-2-f interactions. This could partially be attributed to not all students working in the on-line medium at the same time or in the same section of the course.

Both Brad and Shelley enjoyed the flexibility in scheduling on-line and blended course work respectively. Taking on-line courses allowed Brad to continue working full-time. Instructor presence seems to have a positive impact on students' learning experience, especially in the on-line and blended classrooms, as in those cases, interactions with other students are limited. Both Brad and Shelley chose not to interact much with their classmates. Brad preferred to learn independently while Shelley felt she had little in common with her classmates which limited her sense of community, although it was not related to the learning context.

Overall, the survey results indicate that there are no significant differences in perceived sense of community as reported by learners in three different learning contexts, (i.e. f-2-f, on-line and blended). However, the interview participants from the three contexts reported key differences in their perceptions of sense of community in the classroom. Elizabeth from the f-2-f classroom reported a very high sense of community resulting from extensive interactions among classmates. Brad from the on-line classroom relied on course instructors and a co-worker for support and community, and reported a lack of community with other on-line learners. Shelley from the blended classroom experienced some sense of community with her classmates. However, she reported that the f-2-f medium supported the development of classroom community more than the on-line portion of the class.

In conclusion, considering both the quantitative and qualitative data under analysis to address the questions of this study, the survey findings which indicated no significant difference between means, conflicted with the findings from the interviews in which participants indicated differences in levels of sense of community among the different learning contexts.

Discussion

This convergent-design mixed methods study involved the completion of Rovai's (2002b) Classroom Community Scale survey by 12 adult learners from three contexts of instruction (on-line, face-to-face, and a blended format of the two). Respondents reported on their sense of community after completing their program of studies. Additional follow-up semi-structured interviews with three of these participants—one from each context—converged with the quantitative data to shed understanding on how different learning approaches in the three contexts contributed to participants' perceptions of sense of community. Results from the descriptive data of the study indicated that students in the blended classroom experienced the highest sense of community. However, further analysis of those data indicated that there were no statistically significant differences between groups. It may be that the sample size used in this study was too small to find statistical differences between cohorts, but it may also mean that instructors in each of the three learning contexts are doing a good job of establishing a sense of community with their students, regardless of the learning context. All three contexts were perceived to be contributing equally to sense of community by students. These results contradict my hypothesis that comes from my own anecdotal experiences, student observations, and from literature review on the sense of community. I hypothesized that f-2-f students' would experience significantly higher sense of community when compared to on-line and blended contexts; and that students in blended class would report sense of community higher than on-line students.

Student interviews supported my hypothesis that sense of community will be highest in f-2-f classroom. Elizabeth scored the highest on CCS. She indicated that her course offered numerous opportunities to interact with other students in the class as well as with the instructors.

As predicted by the theories of social constructivism and socially distributed cognition, regular discussions, group work, and student presentations allowed Elizabeth to learn from and connect with others in the class. Sharing of knowledge among students strengthens sense of community (Rovai, 2002a). Elizabeth felt empowered to share her knowledge with her classmates. This deepened her sense of community in the classroom. Frequent social events and field trips for the f-2-f students allowed them to spend a lot of time in each other's company thus increasing their comfort level with each other. Elizabeth felt that this led to student bonding, and as a result, she perceived that the class became very cohesive and believed that other students perceived a high sense of community.

Brad, from the on-line classroom context, reported lower than average score on total CCS and on the subscale of connectedness but higher than average on the subscale of learning. He indicated clearly that he learns best independently. He did not feel an enormous need to interact much with his peers. It appears that Brad had a low desire for sense of community to help him learn and connect with others. He did not seem to share values and beliefs with his classmates. It is possible that Brad chose to study on-line because he was internally motivated and was not seeking help and support from his classmates. It is often reported that on-line students are self-motivated, independent and self-directed learners (Whiting, Liu & Rovai, 2008). However, since Brad expressed satisfaction with the on-line course content by reporting higher than average on the subscale of learning, it appears that his educational goals and expectations were being met. Brad found it hard to trust classmates he had never met in-person. Lack of physical contact with other learners seems to be contributing to his lower than average sense of community and feelings of connectedness with other learners in the on-line course.

Brad also explained that his on-line course did not offer many opportunities to interact with classmates. This certainly may have contributed to his lower than average score on the subscale of connectedness. However, in on-line courses, where instructors build-in numerous opportunities for students to interact, students can experience a strong sense of community (Baab, 2004; Lear, 2007). Brad felt that by design, the on-line course did not lend itself to many interactions with other students. He further explained that since the on-line course was not paced, students were at different points in the course. This made it difficult to have meaningful, interactions via on-line discussions forums. Course design features that minimize student isolation support development of community in on-line courses (McInnerney & Roberts, 2004; Yang & Liu, 2008). On-line discussions with the whole class are known to enhance sense of community (Liu et al., 2007) by providing a forum for students to share their knowledge and learn from others' experiences. In addition, Brad reported that discussion topics were structured to solicit answers to specific questions from individual students and did not necessarily lend themselves to sharing of experiences and creation of new knowledge. Discussion forums that do not facilitate higher-order cognitive processing often fail to generate rich discussions (Lee-Baldwin, 2005). Brad also reported that the on-line course did not include any initial orientation, get-to-know-your-classmates-type activities. Ice-breaker and other on-line social activities, where on-line students can share interests and experiences, are pivotal in creating on-line sense of community (Stepich & Ertmer, 2003; Liu et al., 2007).

Brad indicated that he learned what he needed to in the classroom. This indicates that there is an important distinction between sense of community and the learning achieved. Although, Brad did not feel a strong sense of community with his peers, he never felt that he was compromising on learning in the on-line medium. He relied on his instructors and reported

having meaningful interactions with instructors on numerous occasions. Strong and active instructor presence is well-known to contribute to students' sense of community (Shea, 2006). In addition to his instructors, Brad greatly relied on one of his colleagues who had recently graduated from the program. Brad reported that he used both his instructors and that particular colleague as a resource whenever he felt a need. He indicated that he experienced community with his instructors and this colleague and as such did not seek much community with other learners in the on-line class. It appears from this student that a lack of sense of community with classmates can be offset by the supportive work of an instructor.

Shelley, the interview participant from the blended classroom context, reported lower than average scores for on all three scales, total CCS, subscale of connectedness and subscale of learning. This finding contrasts with many research studies that report that blended courses produce the highest sense of community in comparison to on-line and f-2-f courses (Rovai & Jordan, 2004).

Shelley noted that in the blended classroom, primary mode of interaction with other learners was through discussions, which were included in both the f-2-f and the on-line course content. However, Shelley expressed that the f-2-f discussions were more meaningful. She pointed that it was easier to reiterate a point; have an argument in f-2-f "real-time" discussion when other learners are physically present. The on-line discussions were staggered in time as learners responded at their own pace and so there was no real-time discussion occurring. As a result, the on-line discussion dragged on and became less meaningful than f-2-f discussions.

Shelley also felt that peer pressure experienced by learners in the f-2-f classroom is the impetus to participate in a discussion. Shelley felt that on-line discussions tended to be superficial as there was no peer pressure and no physical contact. Loss of non-verbal

communication is a well-documented disadvantage of asynchronous online discussions (Murphy, 2004).

Shelley noted that instructor presence was of huge benefit to students. However, she also felt that instructor presence is more real in the f-2-f class simply because there is more interaction among students and instructors in the f-2-f class as they share a physical space. Shelley also noted that in the on-line medium instructors do not share as many personal experiences and concluded that overall, the f-2-f medium is a much better set up for developing classroom community as students and instructors are physically together, in the same space for long periods of time.

Shelley shared a very interesting opinion about one of the aspects of this program/industry. She felt that in this program, apprentices from different industries study together and since the apprentices come from different industries, they do not have experience with same products or parts. It appears that lack of commonalities hindered meaningful exchange of dialogue between students. Nonetheless, the blended course was appreciated because of the flexibility it offered to learners. On-line activities and assignments could be done at the student's own pace. Periodic f-2-f class-time provided the extra push to stay on task. Overall, the blended course provided a balance between routine and flexibility to carry on with other aspects of life.

In summary, this study shows that learners spending a significant time in physical contact with each other, as well as a strong instructor presence, play an important role in the establishment of sense of community in a classroom. Since regular, physical contact emerged as a crucial factor for development of sense of community, it can be concluded that establishment

of a strong sense of community in fully on-line courses, wherein learners have no physical contact with others, can be challenging.

However, not all learners are looking for opportunities for interactions with other learners. On-line and blended courses are viewed favourably by learners who are independent, work full-time, and have other commitments. Such learners prefer to interact with an instructor while limit their interactions with classmates.

Limitations of the Study and Implications for Future Research

As student population changes and technology advances, instructional strategies need to evolve (Slavich & Zimbardo, 2012). This study is expected to be valuable to the community of post-secondary educators and administrators, especially those who are directly involved with administering, designing or facilitating on-line training. It provides comparative quantitative and qualitative evidence about which learning contexts contribute most to the students' sense of community and how.

Faculty members will find the results useful in making choices between multiple time consuming elements of on-line and blended course design as they strive to create a supportive learning experience for students. Administrators will find the results informative in terms of where financial resources might best be committed. Administrators who oversee distance education will have additional information as they make choices regarding support for students who take partial or full training on-line.

The context of the study was limited to a specific group of students in a trades program in a community college setting. Due to the small size of the sample, study results cannot be generalized. Duplicating this study in other institutions and/or other programs may provide additional information about how different learning contexts impacts sense of community among

students. Future researchers could potentially increase the sample size by extending the participation to other faculties and departments in an institution. A larger sample of students may further address the research questions and confirm or add to the findings. Moreover, because of the small sample size, it was not possible to find any statistically significant differences among the groups.

Because this study was conducted in a polytechnic specialising in technical education and skills training, the generalizability of results is limited. It is possible that different results would be obtained if the study was replicated in other departments or other types of post-secondary institutions like universities or in university-colleges. To strengthen the generalizability of results, and to explore interdepartmental and inter-institutional differences, this study should be replicated in institutions with different orientations including larger samples of students across a variety of academic and training disciplines.

Results of the study are also limited as the results rely on self-reported data, which may not necessarily reflect participants' true beliefs. Moreover, the participants reported their opinions about sense of community, which may or may not reflect the real picture of the situation. To gather well-rounded data, the study should be expanded to include participants from other stakeholder groups of the teaching-learning process, such as instructors and administrators.

Conclusion

This mixed-methods study sought to compare students' perceptions of sense of community in three different learning contexts. From this study, it can be concluded that sense of community gets established during non-academic, social encounters when learners spend a substantial amount of time in physical contact with each other. However, educators should not

presume that all learners are always seeking sense of community. It is possible that learners who chose on-line and blended learning contexts prefer to learn independently with limited interactions with classmates, and where needed, seek their instructor's support.

The findings from this study are really important during this time when Saskatchewan Polytechnic is re-considering its on-line development strategy as well as planning to offer all courses in all academic disciplines in the blended format. When designing on-line and blended courses, instructors and designers, being mindful of students' needs for community in the classroom, should chose instructional strategies that allow students to bond with their classmates and experience belongingness and acceptance in the classroom.

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Appendix A

Letter of Invitation

Dear Student/Alumni,

By way of this email, you are invited to participate in a research study about sense of community among learners in a classroom. The purpose of the study is to determine if the medium of study i.e. on-line, face-to-face or a mix of on-line and face-to-face (that I am calling blended) has any impact on students' experiences of sense of community.

Jasleen Kaur is the principal researcher in this study. She is conducting this study as a part of the requirements of a Master's degree in Education from Memorial University of Newfoundland.

She works at Saskatchewan Polytechnic as a Project Manager in the department of Learning Technologies. She is responsible for planning, budgeting, scheduling and supporting on-line curriculum development projects through the development life cycle.

Please be assured that this research study is not related to your course(s) at Saskatchewan Polytechnic. Your decision to participate, or not, will not have any impact on your student status or standing.

If you decide to participate, you will need to complete the attached survey. Completed survey should be submitted to Jasleen at jk6478@mun.ca. Upon completing the survey, you will be invited to participate in an interview about your classroom community experiences.

Taking part in the study is your decision. You do not have to be in this study if you do not want to. If you choose to participate in this study, but need to withdraw later, you will be able to that up to two weeks after data collection is complete.

Participation is confidential and anonymous. Data collected during the research study will be kept in a secure location. The results of the study may be published or presented at professional meetings, but your identity will not be revealed.

Although you probably won't benefit directly from participating in this study, I hope that community of post-secondary educators in general will benefit from it.

Thank you for your consideration. If you would like to participate, please respond to the attached survey.

If I do not hear from you by the end of this week, I will contact you again next week though email to see whether you are willing to participate.

If you have study related questions or problems, you may contact Jasleen Kaur at 306-715-8010 or jk6478@mun.ca or her faculty supervisor, Dr. Chris Mattatall at 709-864-7617 or cmattatall@mun.ca. If you have any questions about your rights as a research participant, you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 709-864-2861.

Sincerely,

Parts Management Technician Program Head

Appendix B

Classroom Community Scale (CCS)

Implied Informed Consent

By completing and returning this questionnaire, you verify that:

* You have understood the purpose of this survey;

* You have voluntarily agreed to participate;

* You are at least eighteen (18) years of age.

If you have any questions about this survey and your rights, please contact Jasleen Kaur at (306) 715-8010.

Survey

What is your sex?
- Male
- Female
- Not willing to disclose

What is your age?
- 18-24
- 25-34
- 35-44
- 45 and older

What is the highest level of education you have completed?
- Some high school
- High school diploma
- Some college
- College graduate
- Trade/technical/vocational training

What is your family status?
- Single
- In a relationship

- Married without kids
- Married with kids

Mode/Medium of learning in the program:

- Face-to-face
- On-line
- Blended (a combination of face-to-face and on-line)

Directions: The 20 items below are statements that describe experiences in a course. Think about a specific course that you recently completed. Read each statement carefully and place an X to the right of the statement that comes closest to indicate how you feel about that particular course. You may use a pencil or pen. There are no correct or incorrect responses. If you neither agree nor disagree with a statement or are uncertain, place an X in the neutral (N) area. Do not spend too much time on any one statement, but give the response that seems to describe how you feel.

Please answer the following items. You can skip any questions that you do not wish to answer.

Key:	Strongly agree	(SA)
	Agree	(A)
	Neutral	(N)
	Disagree	(D)
	Strongly disagree	(SD)

1. I feel that students in this course care about each other.

(SA) (A) (N) (D) (SD)

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

(SA) (A) (N) (D) (SD)

3. I feel connected to others in this course.

(SA) (A) (N) (D) (SD)

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

(SA) (A) (N) (D) (SD)

5. I do not feel a spirit of community.

(SA) (A) (N) (D) (SD)

6. I feel that I receive timely feedback.

(SA) (A) (N) (D) (SD)

7. I feel that this course is like a family.
(SA) (A) (N) (D) (SD)

8. I feel uneasy exposing gaps in my understanding.
(SA) (A) (N) (D) (SD)

9. I feel isolated in this course.
(SA) (A) (N) (D) (SD)

10. I feel reluctant to speak openly.
(SA) (A) (N) (D) (SD)

11. I trust others in this course.
(SA) (A) (N) (D) (SD)

12. I feel that this course results in only modest learning.
(SA) (A) (N) (D) (SD)

13. I feel that I can rely on others in this course.
(SA) (A) (N) (D) (SD)

14. I feel that other students do not help me learn.
(SA) (A) (N) (D) (SD)

15. I feel that members of this course depend on me.
(SA) (A) (N) (D) (SD)

16. I feel that I am given ample opportunities to learn.
(SA) (A) (N) (D) (SD)

17. I feel uncertain about others in this course.
(SA) (A) (N) (D) (SD)

18. I feel that my educational needs are not being met.
(SA) (A) (N) (D) (SD)

19. I feel confident that others will support me.
(SA) (A) (N) (D) (SD)

20. I feel that this course does not promote a desire to learn.
(SA) (A) (N) (D) (SD)

Appendix C

Interview Questions for Classroom Community

- What kinds of opportunities were you given to interact with your classmates?
- How often did you interact with your classmates?
- What kinds of opportunities were you give to get to know your classmates?
- What was the nature of those interactions (how long, how meaningful, what medium)?
- Do you think if you had interacted more or less and if that had been helpful?
- Explain the collaborative learning opportunities you were given in this class. How did these opportunities impact your learning experience?
- What kinds of technologies (if any) did you user for interaction?
- How did interaction with your classmates impact your sense of classroom community? How did those interactions impact your overall learning experience?
- Describe your contribution to the classroom, to your classmates' learning experience.
- What kinds of opportunities were you given to participate in the classroom?
- How did the medium of learning contribute to or hinder your sense of connectedness in the classroom?
- What role did your instructor play in developing classroom community?
- What tools (if any) were used? How well did these tools function? Which tools worked better?
- What strategies or methods did s/he use? What strategies worked better than others?
- What kinds of opportunities were you given to provide feedback about the course?
- How did you feel about asking questions/speaking up in the class? How were you empowered to contribute?