Exploring the Role of Community in Online Learning

by

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Curriculum, Teaching and Learning
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Abstract

Distance education is growing rapidly at the post-secondary level in Canada. Despite the growing popularity of online learning in higher education, distance education often suffers from high dropout rates, which have been attributed to the physical separation of students. Such separation tends to give rise to feelings of isolation and disconnection. According to the literature, these feelings can be overcome by fostering a sense of community, that is a sense of belonging and interactivity among online learners. While a growing body of literature emphasizes the importance of fostering a community in online course communities, it is not clear how this is best accomplished. There is neither an accepted set of rules or strategies nor clearly defined steps in the development of a community in online course communities. In addition, the research on the effects of a community on learning is mixed. A few scholars criticize existing research for failing to demonstrate the role of community in learning through rigorous empirical studies. My research is concerned with this gap in the literature. So far, current research has made little progress in providing answers concerning the role of community.

Findings from this study revealed that strong community levels were associated with instructor-facilitated online course communities, whereas weak community levels were associated with peer-facilitated online course communities. Students in the online course
communities with stronger community levels, posted more notes, replied to more notes, and reread notes more often. They also spent more time revising the notes that they posted. Most interestingly, students in the online course communities with stronger community levels were more likely to link to and ‘Like’ their classmates’ notes. Furthermore, unlike their peers from online course communities with weaker community levels, students from online course communities with stronger community levels believed that they learned more because they had access to their professor and their peers’ ideas, and also expressed their enjoyment of the online course community discussions. It was also found that instructors from online course communities with stronger community levels were more hands-on than those from online course communities with weaker community levels. Considering these findings, I argue that fostering a sense of community in online course communities enhances social capital through the creation of relationships. This produces better student outcomes, deeper learning and more positive online learning experiences for students.
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Glossary of Terms

• **Community**: “a classroom community can be constitutively defined in terms of four dimensions: spirit, trust, interaction, and commonality of expectation and goals, in this case, learning [among students]” (Rovai, 2002a, p. 4).

• **Community building**: refers to creating a feeling of belonging, comfort, and stability as well developing connections with others ideas and values (Boyer, 1995).

• **Computer-Mediated Communication (CMC)**: “the communication that occurs between humans via some form of computer, such as a desktop, mobile phone or similar” (Hardaker, 2010, p. 215).

• **Community level**: refers to online courses that had high and low community scores from Rovai’s (2002c) Classroom Community Scale.

• **Course type**: refers to the facilitation method associated with online courses.

• **Cronbach’s alpha**: “a measure of the reliability of a scale” (Field, 2013, p. 873).

• **Analysis of Variance (ANOVA)**: “a statistical procedure that uses the F-ratio to test the overall fit of a linear model” (Field, 2013, p. 870).

• **Central tendency**: “a generic term describing the centre of a frequency distribution of observations as measured by the mean, mode and median” (Field, 2013, p. 871).

• **Distance education, distance learning, or online learning**: implies “that the learner is at a distance from the tutor or instructor, that the learner uses some form of technology (usually a computer) to access the learning materials, that the learner uses technology to interact with the tutor or instructor and other learners, and that some form of support is provided to learners” (Anderson, 2008, p. 3).
• **Deep learning:** “is a process that takes place when students translate new information into engraved concepts and relate it to their life experience” (Offir, Lev, & Bezalel, 2008, p.1175).

• **Editing:** this is the number of revisions made to notes by that note’s creator. Changes could be as simple as correcting the conjugation of a verb or could include substantive changes to the content or subject of the post.

• **Emotion:** emotion is defined as “the recognition, expression and sharing of emotions or moods between two or more individuals” (Derks, Fischer, & Bos, 2007, p.2).

• **Effect size:** “an objective and (usually) standardized measure of the magnitude of an observed effect” (Field, 2013, p. 874).

• **Instructor-facilitation:** involves the instructor “keeping the discussion on track, establishing ground rules and good discussant behaviour, helping students overcome technical problems, and asking questions to help participants understand a particular issue or topic, or drawing students’ attention to opposing perspectives” (Hew, 2015, p. 20).

• **Kruskal-Wallis test:** “non-parametric test of whether more than two independent groups differ. It is the non-parametric version of one-way independent ANOVA” (Field, 2013, p. 877).

• **Liking:** the number of likes that a note has received. Likes indicate an acknowledgement that is similar to the Like feature on Facebook.

• **Links created by note:** the number of links to other notes compared to the number of notes created. Linking within Pepper is similar to tagging in social media.
• **Mann-Whitney test:** “a non-parametric test that looks for differences between two independent samples. That is, it tests whether the populations from which two samples are drawn have the same location” (Field, 2013, p. 878).

• **Messages to instructors:** these are private Pepper messages that are similar to e-mail.

• **Normal distribution:** “a probability distribution of a random variable that is known to have certain properties” (Field, 2013, p. 880).

• **Notes:** this refers to a single post within the discussion forum.

• **Note re-reading:** the number of times a note is viewed following the reader’s first reading of that note.

• **Online discussion forum (also known as discussion group, discussion forum, message board, and online forum):** is a general term used for any “bulletin board,” within an online learning environment, which allows students to post, read and discuss messages by their peers.

• **Online Course Communities** refer to a group of students collaboratively engaging in purposeful dialogue and reflection to create meaning and a shared understanding about the course content. Participants in these communities are students who receive credit towards their degree. An example of this community is a distance education course offered by a post-secondary institution.

• **Partial eta squared:** “a version of eta squared that is the proportion of variance that a variable explains when excluding other variables in the analysis. Eta squared is the proportion of total variance explained by a variable, whereas as partial eta squared is the proportion of variance that a variable explains that is not explained by other variables” (Field, 2013, p. 881).
• **Peer-facilitation**: involves “the use of students as peer facilitators in an online discussion,” including students collaboratively controlling the discussions (Hew, 2015, p. 21).

• **Peer debriefing**: “involves locating a person (a peer debriefer) who reviews and asks questions about the qualitative [or quantitative] study so that the account will resonate with people other than the researcher. This strategy, involving an interpretation beyond the researcher and invested in another person adds validity to an account” (Creswell, 2014, p. 202).

• **External auditor**: involves reviewing the full research study. “As distinct from a peer debriefer, this auditor is not familiar with the researcher or the project and can provide an objective assessment of the project throughout the process of research or at the conclusion of the study. The role is similar to that of a fiscal auditor…The procedures of having an independent investigator look over many aspects of the project (e.g., accuracy of transcription, the relationship between the research questions and the data, the level of data analysis from the raw data through interpretation) enhances the overall validity of a qualitative [or quantitative] study” (Creswell, 2014, p. 203).

• **Presence**: “to project their personal characteristics into the community, thereby presenting themselves to other participants as ‘real people’” (Garrison, Anderson, & Archer, 2000, p. 89).

• **Private shared notes**: a post that is only shared with a specific peer or peers selected by the creator of the note. The peer or peers who receive the note also have the ability to edit the note.
• **Replies**: responses to other notes. In Pepper, replies are indented in a similar manner to those in a threaded discussion forum.

• **Social presence**: having the feeling that there are others involved in communicating (Whiteman, 2002), that is, having the feeling of being socially present (Leh, 2001), and “connected to another intellectual entity on CMC” (Tu, 2002, p.2).

• **Social capital**: refers to “the stock of active connections among people: the trust, mutual understanding, and shared values and behaviors that bind the members of human networks and communities and make cooperative action possible” (Cohen & Prusak, 2001, p.4).

• **Sentiment**: this is a measure of the amount of emotion that is present in the note. Sentiment values are calculated using natural language processing techniques (Fakhraie, 2011).

• **Term aggregate activity**: a process where information is gathered, summarized and presented for statistical purposes.
1 Chapter 1

1.1 Introduction

A report, sponsored by Pearson and the Sloan Consortium, revealed that online enrollment rose by 570,000 students in the past year to 6.7 million students in the U.S., and that 32 percent of all college and university students were enrolled in at least one online course (Allen & Seaman, 2013). Similarly, an Industry Canada report revealed that distance education is growing rapidly at the post-secondary level in Canada, with distance education course registrations increasing faster than on-campus course registrations (Hirshhorn, 2011). The growth rate for online learning is not expected to decrease in the future (Allen & Seaman, 2013).

1.1.1 Online Course Communities

The notion of community has been used in many different ways on the Internet. Participants usually join one or more communities for various reasons such as, to exchange ideas and information, to collaborate, to support each other, to share resources and much more. The following are six popular types of online communities participants engage in:

- Professional Learning Communities which refer to “a group of people sharing and critically interrogating their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, growth-promoting way (Stoll, Bolam, Mcmahon, Wallace & Thomas, 2006, p.223). An example of a professional learning community could be a grade-level teaching team coming together to share ideas, lesson plans, resources and student progress. These communities are more focused on ongoing job-embedded professional learning rather than short-term professional learning such as workshops.
• Gaming communities (Freeman, 2016) also referred to as Communities of Fantasy (Armstrong & Hagel, 2000) allow participants to create new identities, personalities, or stories. In these communities, participants can adopt either imaginative or factual personas and act out different roles. An example of this community is massively multiplayer online games.

• Communities of Interests bring together people who have similar topics of interest (Armstrong & Hagel, 2000; Henri & Pudelko, 2003). Members participate in these communities to share information, to obtain answers to questions and problems, to gain a better understanding of a topic and to discuss common interests (Henri & Pudelko, 2003). An example of this community includes: Twitter, Facebook groups and Pintrests.

• Communities of Transaction “facilitate the buying and selling of goods and services and provide information about these transactions” (Armstrong & Hagel, 2000, p.85). Participants in these communities are usually encouraged to make purchases. Examples of this community include: Amazon, Ebay and Angie’s List.

• Communities of Relationships focus on personal experiences and ensure anonymity for their members (Armstrong & Hagel, 2000). In these communities, participants discuss their pain related to these experiences, how to cope with personal issues, and information about medical treatments. Examples of this community are support groups for medically ill patients.

• Online Course Communities refer to a group of students collaboratively engaging in purposeful dialogue and reflection to create meaning and a shared understanding about the course content. Participants in these communities are students who receive credit
towards their degree. An example of this community is a distance education course offered by a post-secondary institution.

Interestingly, each online community has adopted the notion of community differently and for a different purpose. However, for this research study I will focus on online course communities to address my research questions.

1.2 Background and Motivation

Studies suggest that students are attracted to the convenience of online learning. Online course communities can be accessed at any time from any place, without the need for relocation, and allow learners to work at their own pace (Bolliger & Inan, 2012; Harasim, 1987, 1989; Kaye, 1989). In addition, because courses are accessible from anywhere, students have time to structure their courses around work and family responsibilities (Bolliger & Inan, 2012; Hara & Kling, 2001). Other advantages include discussion forums in online course communities, where learners can share resources and engage in discourse. Unlike face-to-face courses, there is no need for turn-taking. All learners can share and speak at once and participate simultaneously in many discussions (Hammond, 1999; Kaye, 1989), giving them greater access to others’ ideas (Hiltz, 1986). This also allows them to reflect on their ideas before sharing them publicly (Hewitt, 2005). These advantages have contributed to the explosive growth in distance education in recent years.

Unfortunately, as distance education becomes more popular, its problems have become increasingly more pressing. Most significantly, distance education tends to suffer from high dropout rates (Carr, 2000; Jun, 2005; Eastmond, 1995). Problems with attrition have been attributed to the physical separation of students (Rovai, 2002a) and the lack of interaction between them (Carr, 2000). As Rovai (2002b) observes, “such separation has a tendency to
reduce the sense of community, giving rise to feelings of disconnection, isolation, distraction, and lack of personal attention” (p. 2). As some researchers suggest, students’ feelings of isolation and disconnectedness are the main reasons they drop out of online course communities (Angelino, Williams, & Natvig, 2007; Kanuka & Jugdev, 2006). According to the literature, feelings of isolation and disconnection can be partially overcome by fostering a community, that is, a sense of belonging and interactivity among learners in an online course community (Liu et al., 2007; Ouzts, 2006; Rovai, 2002a; Thompson & MacDonald, 2005). A community allows students to build camaraderie and engage in social reinforcement (Conrad, 2005; Gallagher-Lepak, Reilly, & Killion, 2009). Many scholars suggest that interaction is critical in building a class-wide community online (Arend, 2009; Song & McNary, 2011; Stepich & Ertmer, 2003; Swan, 2009) because it is thought to lead to deeper thinking (Hulon 2013; Larson & Keiper, 2002) and better student outcomes (Drouin, 2008; Exter, Korkmaz, Harlin, & Bichelmeyer, 2009; Liu et al., 2007). Therefore, when a community is fostered students are likely to interact with each other more often, which helps to minimize any possible feelings of isolation and disconnection online learners may experience.

However, notions of “community” and “community building” are not well defined in the literature. While there is a body of literature arguing the need to foster communities in online courses, critics argue that there are no clear directions, an accepted set of rules or strategies, neither clearly defined steps based on empirically derived research that illustrates how to develop effective communities in online courses (Bonk, Wisher, Nigrelli, 2004; Lock, 2007). In addition, research exploring the effects of community on learning is mixed, thus prompting some scholars (Liu et al., 2007) to criticize existing research for failing to demonstrate the role of community in learning through further empirical studies.
My research is concerned with this gap in the literature. Some scholars (Luppicini, 2007) see community as a solution to many challenges in distance education and a valuable addition to online teaching. There are others who struggle with whether a community can or cannot be formed online (Shapiro & Hughes, 2002), and those who think creating community is too time consuming (Liu et al., 2007). The lack of direction and consensus concerning community in an online course community only motivates instructors to question the need and role of community.

1.3 Purpose of the Study

Distance learning began as a way to educate those who were denied access to education, such as women (Harting & Erthal, 2005). Today, however, it holds the potential to meet the needs of people who cannot attend courses on campus because of location issues or because of family and work obligations (Hirshhorn, 2011). Anna Eliot Ticknor believed that education should be available for all social classes rather than simply for the wealthy class (Harting & Erthal, 2005). She challenged the notion that education is only for the wealthy by creating a correspondence school to educate those who were being denied access to an education, mainly women kept at home due to societal beliefs in the 1800s. Currently, distance education is growing rapidly and is seen as an accessible way for individuals to update their skills and acquire the knowledge they need to achieve their goals (Hirshhorn, 2011). Furthermore, many distance educators are motivated by the idea that through this format they can provide “flexible, cost-effective learning opportunities” in education to those who were previously denied (Harting & Erthal, 2005, p. 38).

Interestingly, a recent Forbes Magazine report discussing the findings of a study by Gallup and the Lumina Foundation on the American public’s view on higher education emphasized that although there is a rising confidence in distance education, many Americans still believe the traditional classroom provides better quality instruction and material:
Online education still has a fair amount of ground to cover. Only 15 percent of Americans believe online is better at “providing high-quality instruction from well-qualified instructors” than traditional classroom-based learning and even less (5 percent) believe online courses provide “excellent” material. (Zimmer, 2014, para. 5)

Perhaps the view that distance education is for updating skills has caused some to believe that it is simply a delivery model, and thus cannot provide a good learning experience. With pressure increasing to provide good quality online learning experiences (Thompson & MacDonald, 2005), some online instructors are turning to community models. However, to foster a community in distance education, online instructors and students first need to understand the role of community. Then, they need to decide how community should be fostered, such as what strategies and interactions would help to achieve this goal, a process for which there is currently no consensus (Liu et al., 2007). For these reasons, my main research question asks: What is the role of community in online learning?

1.4 Research Questions

My overarching question is as follows:

*What is the role of community in online learning?*

This is a challenging question to answer. Accordingly, I plan to conduct a series of studies that explore the following sub-questions:

1. *What is the relationship between a sense of community, facilitation method (peer or instructional) and instructional strategies in online course communities?*

2. *How do students’ activities differ in strong and weak online course communities?*

3. *How do students and instructors perceive community in online course communities?*
Through the study of these research questions, I hope to uncover the role of community in online learning, as well as the specific strategies and interactions that help to foster community in online course communities.

1.5 Conceptual Framework

Over the years, there have been various theoretical frameworks proposed to describe how students absorb, process, construct, and retain knowledge while learning. These frameworks include: Behaviourism, Cognitivism, Humanism, and Constructivism. Behaviourism focuses on the idea that a learner’s response to environmental stimuli shapes their behaviours (Leahey & Harris, 1993; D. Schultz & S. Schultz, 1993). This framework views the study of mental processes to be meaningless because only behaviour can be observed (Leahey & Harris, 1993; D. Schultz & S. Schultz, 1993). As a result, learning is defined as a change in the learner’s behaviour, such as what the learner does and the response he or she gives (Jones & Mercer, 1993). Cognitivism rejects Behaviourism and believes that a learner’s response to stimuli depends on their cognitive state and on the mental process occurring (Leahey & Harris, 1993; D. Schultz & S. Schultz, 1993). This framework defines learning as the cognitive activity and mental processes that learners form. Humanism combines cognitive learning with affective learning, stressing the need for both domains for learning to occur. This theory proposes that effective learning occurs when students’ achievements, emotions, and feelings are valued and celebrated by the teacher (Lyon, 1971). Learning is, therefore, seen as a personal choice to fulfill one’s own unique potential. Lastly, Constructivism emphasizes that each learner constructs meaning and knowledge for themselves as they learn with others (Richardson, 2003). For this framework meaning is constructed as we learn with and from other individuals.
Throughout the years, the Learning Sciences have been and continue to be influenced by different, non-psychological theories, from which the conceptualization and interest in community emerged, compelling many researchers to argue that learning happens more effectively through participation than acquisition. This conceptual change in what constitutes learning stems from the emphasis of understanding and conceptualizing community. For instance, Sfaard (1998) declared that there has been a dramatic shift in the conception of learning. He states:

> Learning is now conceived of as a process of becoming a member of a certain community. This entails, above all, the ability to communicate in the language of this community and act according to its norms. The norms themselves are to be negotiated in the process of consolidating the community. While the learners are newcomers and potential reformers of practice, the teachers are the preservers of its continuity. From a lone entrepreneur, the learner turns into an integral member of a team. For obvious reasons, this new view of learning can be called the participation metaphor. (Shea et al., 2006, p. 3)

While this study is not intended to explore how learning occurs with regards to participation and acquisition metaphors, illustrating these distinctions puts into perspective the importance of community and why research about the role of community in education is currently being pursued. Furthermore, Sfaard’s (1998) participation metaphor in which the learner plays an active role in their learning by becoming an integral team member is similar to the Social Constructivist perspective on learning.

The proposed research will be approached from a Social Constructivist perspective because it follows the idea that deep learning takes places through social interaction and collaboration with others. According to Virginia Richardson (2003):

>The general sense of constructivism is that it is a theory of learning or meaning making, that individuals create their own new understandings on the basis of interaction between what they
already know and believe and ideas and knowledge with which they come into contact. (p. 1624)

In other words, it is through the interaction with other ideas and knowledge sets that meaningful learning and new understandings occur. This theory “emphasizes the interdependence of the learners and the communal nature of the process of knowledge as negotiated and constructed through dialogue, problem-solving and authentic experiences” (Comeaux, 2002, p. xxvii). From a Social Constructivist perspective, learning is a process in which learners are able to construct new meanings through interaction and active involvement (Vygotsky, 1980). From this perspective, the purpose of education is to enable learners to work together to construct knowledge (Shackelford & Maxwell, 2012). This relates to the claim that meaningful online interactions among students lead to more effective learning (Hiltz, 1998). An online course community offers students such opportunities because asynchronous interactions provide students with time to reflect (Hammond, 1999; Hewitt, 2005; Hulon, 2013; Larson & Keiper, 2002; Swan, 2005) and carefully compose a post before sharing it publicly with their peers (Hawkes & Romiszowski, 2001; Hewitt, 2001; Pisutova-Gerber & Malovicova, 2009). As a result, students may become more aware of what they write, who they are writing for, and how it relates to their own understanding (Clark & Brennan, 1991; Garrison, 2003; Hewitt, 2001; Poole, 2000). This process of negotiating and sharing ideas with peers in an online context creates a communal dialogue among students and provides opportunities for the construction of new knowledge (Comeaux, 2002), thus fostering effective learning (Hiltz, 1998). Such interactions between learners are critical, and they are more likely to take place if a teacher has fostered an atmosphere of mutual trust and community in the class. Interaction allows students to share ideas, experiences, and knowledge and is said to be a key factor in nurturing stronger
relationships (Anderson, 2004). Furthermore, interaction helps to strengthen an online course community, thus deepening shared meaning and understanding about the content. Social Constructivism is an appropriate conceptual framework because it prioritizes the value of social interaction as a means of supporting knowledge construction (Aragon, 2003; Smith & Ragan, 2005).

Additionally, this theory contends that “learning is not so much about discovering an objective ‘truth’ that lies somewhere ‘out there’ in the reality of the world, as it’s about a process of making sense of information that surrounds us” (Cross, 1998, p.18). Building a community in an online course community is essential for giving students a sense of safety and comfort to freely participate, challenge, negotiate, and share ideas without any fear of retaliation, and encourages students to value diverse knowledge pools. In order to foster community, however, instructors need to know the role of community and the specific strategies for building it in an online course community.

1.6 Significance of the Study

As there are few empirical studies exploring the role of community in online learning using a mixed methods approach, this study may prove significant in contributing to the body of research related to a sense of community in online course communities and to the body of research on online course community design. The results from this study may, therefore, help online instructors design online course communities that further enhance student learning, success, and satisfaction. As distance education increases in popularity within higher education, instructors are being pressured to design and provide high-quality online course communities (Zimmer, 2014). This pressure seems to intensify because of the high attrition rates within distance education and the increasing demand for online course communities in which many
instructors resist being moved to because they are uncomfortable with online teaching and learning, thus tend to denigrate the medium. As a result, many researchers have turned to community models to provide a better learning experience, seeing it as a valuable additional element to online learning. Some researchers, however, argue that creating a community is too time consuming, while others question whether it is even possible to create a community online. These conflicting views surrounding community highlight a need for more research in the field. While many studies have focused on using community models in distance education, exploring the role of community in online learning has not received adequate attention. Research such as this is significant to all online learners and instructors because it attempts to provide an empirically sound rationale for fostering community in online course communities.
2 Chapter 2

2.1 LITERATURE REVIEW

In this section, I will explore what is already known about community building and online learning. Specifically, I will focus on the following: the definition of community, four well-known community models, the common elements of building a community, the importance of a community, and the challenges of building a community.

2.2 Defining Community

Some scholars (Barab & Duffy, 2000) argue that the word “community” is at risk of losing its meaning because there is little criteria to help distinguish between a community of learners and group of students learning collaboratively. In other words, the educational literature provides little guidance on what does or does not constitute a community. Given the prevalence of phrases such as community of practice, community of inquiry, knowledge-building community, and community of learners, just to name a few, it seems as though community has become a buzzword or slogan where it may not exist (Barab, Kling, & Gray, 2004). For Hewitt (2006) “[t]he word community is popularly (and sometimes erroneously) applied to a broad range of social organizations, from informal Internet chat rooms to carefully crafted models of classroom activity” (p. 210). According to Grossman, Wineburg, and Woolworth (2001), interestingly, the term community has become an add-on on every innovation and group in education. However, there is no consensus of what features define community. This lack of consensus has caused confusion especially in the virtual community, where an individual can simply pay a fee, have a password, or visit a website to be considered part of the community. Yet groups of people seem to become a community, by simply being labeled a community.
Although, it may seem that scholars have no consensus on what constitutes a community, many have attempted to clearly define this term.

In the field of distance education, community has been defined in many ways encompassing various elements. Charalambos, Michalinos, and Chamberlain. (2004) state that it is an environment in which participants feel safe to freely share their opinions and ask questions without the worry of being attacked by others. Palloff & Pratt (2007) emphasize that an online course community is more than a meeting space; rather, “the learning community in an online course allows for mutual explorations of ideas, a safe place to reflect on and develop those ideas, and a collaborative, supportive approach to academic work” (p. 6). For Ludwig-Hardman (2006), a community is a space in which people can engage with others to share beliefs and create knowledge. More specifically, it is a “group of people, connected via technology-mediated communication, who actively engage one another in collaborative, learner-centered activities to intentionally foster the creation of knowledge, while sharing a number of values and practices” (Ludwig-Hardman, 2003, p. iv). Others define community as a group of people brought together by similar interests and common goals (Westheimer & Kahne, 1993).

Although there have been many different definitions for community, there are commonalities between these definitions, including: a group of people with a common goal, who have a sense of belonging and feel safe to collaborate, explore ideas, and share personal experiences in hopes of creating a shared understanding. This study will adopt Rovai’s (2002a) community definition and use the scale he developed. For Rovai (2002a), a “classroom community can be constitutively defined in terms of four dimensions: spirit, trust, interaction, and commonality of expectation and goals, in this case, learning [among students]” (p. 4). To further understand the notion of community, for this chapter I will undertake a more in-depth
exploration of well-known community models.

2.3 Community Models

Over the years, community models have become popular within higher education and have now flowed into online learning. There are many community models being used to inform teaching and learning, including community of interests (Henri & Pudelko, 2003), knowledge community and inquiry (Peters & Slotta, 2010), professional learning community (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006), task-based communities (Riel & Polin, 2004), fostering communities of learners (Brown & Campione, 1994), double-layered community of practice (Lee & Brett, 2015), community of practice (Lave & Wenger, 1991), community of inquiry (Garrison & Anderson, 2003), and knowledge building communities (Scardamlia & Bereiter, 2006), just to name a few. According to Picciano (2002), “[i]n an online course, terms such as communities of inquiry, communities of learners, and knowledge-building communities have evolved” (p. 2). For this study, I will focus on the models currently being used for online learning, which include Community of Practice, Community of Inquiry, and Knowledge Building Community (Table 1). I will also explore the sense of community concept, which has attracted considerable attention in higher education.

2.3.1 Community of Practice

Communities of practice (CoP) are defined as “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger, 2008, p. 1). Furthermore, a CoP can exist anywhere and individuals usually participate in a number of them either intentionally or unintentionally (Lave & Wenger, 1991). According to Wenger, McDermott, & Snyder (2002), “people participate in communities for different
reasons—some because the community directly provides value, some for the personal connection, and others for the opportunity to improve skills” (p. 27). Additionally, a CoP has three characteristics: the domain, the community, and the practice (Wenger, 2008) (see Figure 1).

The domain is the group identity, defined as the members’ shared interests and common goals (Wenger, 2008; Eckert, 2006). Members must be committed to the domain’s maintenance and growth, and should also have a shared competence to help distinguish them from other groups. Although members may view the domain as important because they have a common goal and similar interests, for those outside the community, the group may not be valued for their expertise. For example, a youth gang may have developed various strategies to cope with their domain: surviving on the streets, protecting each other, and maintaining an identity with which they can live (Wenger, 2008). Although these youth value their collective competence and learn from each other, others outside their group may not recognize, understand, or value their expertise (Wenger, 2008). Therefore, the domain is more than a network of connections or a group of friends. The domain refers to a group of people who have the same interests and goals, and who possess competencies that are recognized and valued by only them.

The community refers to members engaging in joint activities, discussions, and information sharing while pursuing their interests. Through joint activities, members eventually build strong relationships with one another, which allows them to learn from each other (Wenger, 2008). It is also important to remember that although members may have similar goals, they are only considered members of a community if they interact with one another. These interactions do not need to happen on a regular basis but they need to happen in a manner in which members recognize the value of the interactions to their learning. For example, although graduate students usually do their work independently, study groups who meet in restaurants or online to discuss
their progress, share ideas and resources, and provide feedback on each other’s work can be considered a CoP because the members of the group recognize the value of their interactions. According to Riel and Polin (2004), although members may have differences in their expertise and experience, community is still viewed as shared activities and goals. In addition, the identity of members of a community practice are partially determined and influenced by their participation, thus members have a responsibility to learn from and for others in the community (Riel & Polin, 2004). Therefore, members must recognize that participating in a community of practice is not only important for achieving their own goals, but is also needed to support other members learning goals. Furthermore, such participation by members allows them to collect and share resources, experiences, and perspectives. This helps to maintain engagement and promotes interaction in the community so that it continues to grow and a shared practice can be developed. In other words, the focus of community is on the evolution, preservation, and reproduction of the shared understandings of the group.

Lastly, practice refers to members developing “a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems—in short a shared practice” to learn and develop knowledge (Wenger, 2008, p. 2). In this model, learning is not seen as the acquisition of knowledge, but rather is about the social engagements that allow learning to occur (Lave & Wenger, 1991). Participation “refers not just to local events of engagement in certain activities with certain people, but to a more encompassing process of being active participants in the practices of social communities and constructing identities in relation to these communities” (Wenger, 1998, p. 4). Lave and Wenger (1991) illustrate their learning theory by observing different apprenticeships, such as Yucatec midwives, Vai and Gola tailors, U.S. Navy quartermasters, meat-cutters, and non-drinking alcoholics in Alcoholics Anonymous. Initially,
when people join these communities they begin learning at the periphery and usually their activities are seen as low key (Lave & Wenger, 1991). These individuals tend to focus more on reified knowledge, which is found in policies, documents, talk, and even the tools themselves. This reified knowledge provides “a stable but brittle knowledge base,” for the community (Riel & Polin, 2004, p. 28). As they develop their skills and become more competent they move from legitimate peripheral participation to full participation (Lave & Wenger, 1991) (see Figure 2). During this stage, individuals are likely to focus more on participative knowledge, which refers to “wisdom that is actualized through people, their practices, and their stories. This is dynamic knowledge that develops and changes over time and across practitioners” (Riel & Polin, 200, p. 28). Both the peripheral and full participation stages have people that play important roles in helping to modify practice, locate knowledge, and develop a shared practice. Both stages allow members to produce knowledge that is critical to sustaining the community. According to Lave and Wenger (1991), all learners participate in communities of practitioners because mastering knowledge and skill involves newcomers moving to full participation through the practices of the community. Through legitimate peripheral participation members (i.e. newcomers and old-timers) are able to participate in activities together, explore identities, and share artefacts in hopes of contributing to the community’s knowledge and practice (Wenger, 1991). In communities of practitioners, members engage in collective learning through the process of becoming a full member (Wenger, 1991). Learning happens through the process of becoming a full participant. Learning is not seen as the acquisition of knowledge but rather as that which occurs during social participation. Therefore, the practice allows members to develop shared experiences over time, as well as an understanding of the common interests or endeavours in which they are engaged (Eckert, 2006). In other words, in a community of practice,
understandings are shared with members through mentoring and apprentice experiences. This allows each member to shape and contribute to the knowledge pool by adjusting his or her practice. The interaction between old-timers and newcomers allows the newcomers to develop both their knowledge and a professional identity. These three elements constitute a CoP, and work in tandem to create optimal conditions for knowledge dissemination (Wenger, McDermott, & Snyder, 2002).

Interestingly, the CoP model was first developed to examine the learning process in social environments, but, over the years, researchers have used the model to analyze other environments. For instance, Lave and Wenger’s (1991) publication focused on the interactions between newcomers and old-timers, and the process of newcomers being exposed to knowledge and creating a professional identity through a form of apprenticeship (i.e. peripheral vs. full participation), as discussed above. Wenger, McDermott, and Snyder’s (2002) publication documents a shift towards a CoP model being used as a managerial tool in organizations. In previous publications it was suggested that CoPs developed naturally and spontaneously, however Wenger et al. (2002) suggests CoPs can be cultivated and engineered in organizations. Furthermore, some scholars (Brown, Ellery, & Campione, 1998; Kapucu, 2012) have attempted to apply the model outside the business world, asserting that schools can be considered CoPs in which the practice is collaborative learning. However, other scholars (Riel and Polin, 2004) argue that creating a CoP in a classroom setting will be difficult because “the temporary time period and the students’ lack of choice to participate make it difficult to characterize them as members of a community of practice” (p. 36). Barab and Duffy (2000) build on this argument through their discussion of practice fields within classrooms. According to Barab and Duffy (2000) teachers design practice fields within their classrooms that are “separate from the real
field,” but still “contexts in which learners, as opposed to legitimate participants, can practice the kinds of activities they will encounter outside of schools” (p. 30) that are consistent with the methods of real practitioners. Practice fields were developed to address the issue that by only teaching students about the practices of communities to which they have limited access, schools prevent students from having full learning experiences. The idea of practicing similar activities and tasks in the classroom as are found in real fields sounds promising because students would be more prepared to enter specific fields. However, Barab and Duffy (2000) assert that although this model received much attention and numerous design strategies there are differences between in-school and out-of-school learning that must be considered, such as: although the practices students engage in are removed and adapted from the community they are still shaped by school tasks and activities, which impacts the meaning and practices being learned by the student (Barab and Duffy, 2000). The problem is with the practices, in which schools emphasize the importance of learning and grades rather than emphasizing participation and use of these practices (Barab and Duffy, 2000). In addition, the identity reinforced and developed in schools is that of the student, rather than the identity of a contributing member of society harnessing and applying the content being taught in schools (Barab and Duffy, 2000). Therefore, the problem with practice fields is that they are concerned with practices that largely have value only within the school rather than within the community. Practice fields separate learning from the social world, which means students do not get to experience the practices and interactions that help to produce identities within real fields. As a result, schools fail to connect students to a larger identity, such as being a member of a community beyond the school’s community.

Over the years, CoPs have been the subject of different interpretations and applications (Cox, 2005; Li, Grimshaw, Nielsen, Judd, Coyote, & Graham, 2009; Saint-Onge & Wallace,
A CoP was not originally intended to describe online course communities but over the years it has been adopted as such. For instance, some researchers are exploring virtual communities of practices (VCoP) (Dubé, Bourhis, & Jacob, 2006; Sorensen & Murchú, 2004) and mobile communities of practices (MCoP) (Kietzmann, Plangger, Eaton, Heilgenberg, Pitt, & Berthon, 2013) to support workplace learning and organizational structure. According to Riel and Polin (2004), “[e]fforts to use technology tools to develop and facilitate online communities of practice continue to grow” (p. 31). Is it possible for a CoP to exist online? Will it still be a CoP according to Lave and Wenger’s work? According to Li et al. (2009), the various interpretations of CoP prevent people from being able to properly create this group and fully understand the benefits it offers. Furthermore, it is also challenging to recognize and evaluate how effective this group is when there is no agreement of what constitutes a true CoP. Although CoPs are considered a type of learning community (Wenger et al., 2002; Wenger, 1998), it is also a model that is now being used to support online learning. However, the adoption of CoPs as an online course community model (i.e. VCoPs) supports critics’ views that some researchers adopt community models without any directions, guidelines, or strategies (Liu et al., 2007). What is the purpose of using such a model online if there are no guidelines?
Figure 1. Community of Practice (CoP) Model. Community of Practice (CoP) Model. This illustration is based on Wenger’s (2008) description that, “Communities of practice are groups of people who share a concern or a passion (Domain) for something they do and learn how to do it better (practice) as they interact regularly (community)” (p. 1).
2.3.2 Community of Inquiry

The Community of Inquiry (CoI) model has been described as “a process model that provides a comprehensive theoretical model that can inform both research on online learning and the practice of online instruction” (Swan, Shea, Richardson, Ice, Garrison, Cleveland-Innes, & Arbaugh, 2008, p. 1). This model in particular was developed to analyze collaborative constructivist interactions in online, blended, and face-to-face courses. Over the years, the CoI model has become popular in informing online learning, and is sometimes referred to as a virtual community of inquiry (Pellas & Kazanidis, 2014; Pellas, Peroutseas, & Kazanidis, 2013; Zydney, deNoyelles, & Seo, 2012).

The community of inquiry model (CoI) outlines three elements necessary for creating and fostering a community of learners: cognitive presence, social presence, and teacher presence (Danaher, Hickery, Brown, Alice, & Conway, 2007). In this model, the students, the course content, and the instructor play a central role in creating a community and are interdependent (Morgan, 2011). Each presence reflects an accepted form of interaction in distance education: student and content (cognitive), student and student (social), and student and instructor (teaching), which if harnessed successfully will achieve pedagogical effectiveness and strengthen the community (Danaher et al., 2007). The idea is that each interaction makes an important contribution in creating a community online (Anderson, 2004).

Cognitive presence refers to “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse” (Garrison & Arbaugh, 2007, p.
According to Anderson (2004), cognitive presence works with the content to ensure the development and growth of students’ critical thinking skills and allows serious learning to take place in the environment. Furthermore, Moore (1989) states that interaction with content refers to the learners’ interactions with the knowledge, skills, and attitudes that are being studied. To ensure that students reflect on discourse the instructor must “include activities or questions that require critical thinking, provide independent learning opportunities, and offer a forum where students can demonstrate or exhibit applications of their new knowledge” (Lambert & Fisher, 2013, p. 4) (selecting content). Yet, instructors must also provide scaffolds to ensure they achieve higher levels of cognition when completing these activities (supporting discourse).

Throughout the literature, social presence has been described and interpreted in many ways. For instance, for Anderson (2004) social presence “relates to the establishment of a supportive environment such that students feel the necessary degree of comfort and safety to express their ideas in a collaborative context” (p. 274). Others have described social presence as the feeling that there are others involved in communicating (Whiteman, 2002), feeling “socially present” (Leh, 2001), having “person-to-person awareness” (Tu, 2002), or being able “to project one’s self and establish personal and purposeful relationships” (Garrison, 2007, p. 3). It is the idea that learners need to feel connected, that is, their identity needs to be accepted and valued (Rovai, 2002b), and they need to be able to socially and emotionally express themselves online to be perceived as real people (Garrison & Arbaugh, 2007; Gunawardena & Zittle, 1997). Some research suggests that social presence is strongly linked to successful learning outcomes, learner satisfaction, and increased interaction (setting the climate). However, other research suggests that while social presence alone cannot ensure deep and meaningful discourse, it is highly unlikely such discourse can develop without social presence. Therefore, many researchers view social
presence as the most important variable. Social presence supports cognitive presence by indirectly facilitating the thinking produced by the community (supporting discourse).

Teaching presence refers to three roles a teacher adopts and performs to create an effective community and teaching presence. First, the design and establishment of the learning experience before and during the course; second, teaching, which involves the implementation of activities to encourage interaction between students, groups, the content, and the teacher; and third, moving beyond the moderator role and providing subject matter expertise through direct instruction (Anderson, Rourke, Garrison, & Archer, 2001). Therefore, the instructor’s role refers to the ways students are taught, provided guidance, corrected, and supported in their learning (Moore, 1989). Course design, leadership, assignments, and feedback influence learners’ engagement with course content (selecting content). Furthermore, dialogue and activities can happen with minimal or direct involvement from the instructor, and helps students become aware of their shifts in thinking while they complete assignments and participate in discussions. Either way, an active instructor will only help strengthen a sense of community and improve the online learning experience (setting the climate).

Many scholars believe that establishing each presence will help to nurture a community online and conceptualize the online learning process (Arnold & Ducate, 2006; Shea, 2007; Stodel, Thompson, & MacDonald, 2006). In this model, community is partially developed through various interactions. These interactions include those between faculty and students (teaching presence), student interactions (social presence), and collaboration in learning, which develops from these interactions (cognitive presence). When these interactions exist, a community develops that is based on shared intellectual pursuits, and not simply strong bonds or strong relationships. Social presence provides the foundation for the development of higher level
discourse, whereas the course design, organization, and leadership associated with teaching presence creates the environment for cognitive presence to develop and flourish. However, some researchers have criticized the CoI model for “the lack of common measures in studies investigating the individual presences, which makes generalizations across studies difficult…[and because]…few studies explore all three presences and, more importantly, interactions among them” (Swan et al., 2008, p. 1). Other scholars have stated that the CoI model “does not adequately inform the development of online education theory and practice” (Annand, 2011, p. 40).

2.3.2.1 Social Presence as an Element within Community

While Rourke, Anderson, Garrison and Archer (2007) recognized the interdependence of each component within the CoI framework, they encouraged research on each of these individual components. As a result, many scholars began to explore the effects of each component, such as the effects of social presence on student learning and performance in an online course community. Interestingly, the concept of social presence has been used interchangeably with the sense of community concept. For instance, according to Picciano (2002) the terms community and social presence are related, as each “refers to a group of individuals who belong to a social unit such as students in a class” (p. 22). Although, Picciano (2002) viewed the terms to be similar, other scholars have attempted to make the distinction between the two concepts by emphasizing that social presence is an element within community that needs to be created by students and modeled by instructors who setup the conditions for social presence. As pointed out by Kear, Chetwynd, and Jefferis (2014) “participants in an online community can act to create or build social presence, for themselves and others (p.3).” Similarly, Preece, Maloney- Krichmar, and Abras (2003) believed that creating social presence should be a major task and objective
when designing an online course community. Others emphasize that social presence is “an important principle for online community design” because it is what shapes users’ behaviours and attitudes (Venkatesh & Johnson, 2002) and allows for information sharing (Miranda & Saunders, 2003). Ryman, Burrell, Hardham, Richardson, & Ross (2009) emphasized that social presence “is a crucial factor for creating online communities as it is the basis for meaningful interpersonal communication and relationships, which enables learners to share knowledge during the learning process” (p. 35). For the purpose of this research study the perspective that social presence is a vital element of community will be adopted. In addition, as previously discussed social presence has been defined in many ways but for this study it will be defined as having the feeling that there are others involved in communicating (Whiteman, 2002), that is, having the feeling of being socially present (Leh, 2001) and connected “to another intellectual entity in the CMC environment” (Tu & McIsaac, 2002, p.146). As emphasized by Picciano (2002), “[social] presence in an online course is fundamentally a social phenomenon and manifests itself through interactions among students and instructors” (p. 24). In other words, although social presence is a vital element of community that is interwoven with other community elements, the term is not synonymous with community. The difference between the two terms is also suggested by and illustrated in the CoI model (see Figure 3).
2.3.3 Knowledge Building Communities

A knowledge building community (KBC) is “any environment (virtual or otherwise) that enhances collaborative efforts to create and continually improve ideas” (Scardamalia, 2003, p.2). An optimal KBC aims to explore ideas to the full possible potential by giving others beyond the creator access “so that collective achievements exceed individual contributions” (Scardamalia, 2003, p. 270). In a KBC, members are continuously adapting their knowledge to new conditions in the environment to better understand the phenomenon, concept, or issue. In other words, “students work cooperatively and collaboratively to develop a ‘knowledge base’ of resources that
are accessed, negotiated, revised and applied during the course of the inquiry-oriented curriculum” (Slotta, 2014, p. 1). An example of a KBC “is a set of researchers who work toward understanding a phenomenon, concept, or relationships, for example, earthquakes, black holes, or the effect of divorce on children,” in order to make knowledge available to others (Riel & Polin, 2004, p. 33). According to Scardamalia and Bereiter (2003), in order for schools to become KBCs they must become second-order environments. Currently, schools are first-order environments because while adapting to the environment requires learning, learning is a stable set of routines that does not change the environment. In second-order environments learning varies because when a member adapts to an environment he or she also changes the environment. As a result, other members must now readapt to the environment because of these new changes (Scardamalia, 2003). For example, the accomplishments of participants in competitive sports help to set a new standard, in which other teams strive to achieve by adapting to the changes in their environment. Another example is the learned disciplines, in which participants must make contributions to collective knowledge through research and teaching. This requires continued adaptation to the environment because participants must contribute new knowledge in hopes of going beyond what is known in the field. A KBC conceives of knowledge as an object that can be revisited and rewritten to compliment new notions from ongoing activities (Scardamalia, 2003). Typically, a KBC has an online platform component, which is used to support different forms of student inquiry, provide a place for students to represent and mediate their artifacts from these inquiries, and externalize their understandings. For instance, the online learning environment Knowledge Forum was developed to support students as they add new ideas, revise notes, and reshape and inform their own views and arguments within a KBC (Riel & Polin, 2004; Scardamalia & Bereiter, 2006). It is important that within a KBC tools evolve to make it
possible for students to store and reuse knowledge (Riel & Polin, 2004). Knowledge Forum allows students to link notes, however “students do not simply link notes; they write justifications for links they create” (Scardamalia & Bereiter, 1996, p. 262), thus encouraging students to build on their peers’ ideas and synthesize arguments. According to Scardamalia and Bereiter (2003), there are four elements that should inform how KBCs are designed: technological support, the opportunity to play with ideas, collective knowledge advancement, and idea improvement.

**Technological support.** Using technology to support a KBC usually means harnessing the database in an online course community in which students produce public material, not simply for grading, that invites and engages others. Those within or outside the school walls could explore existing notes, comment on others’ notes, and reorganize notes into better informational groupings. The database in an online course community serves as an objectification of the community’s growing knowledge set. More specifically, the “[c]entralized storage and retrieval of documents in a computer network” (Scardamalia & Bereiter, 1994, p. 280) increases students’ access and allows them to exchange diversified ideas.

**Play with ideas.** According to Scardamalia and Bereiter (2003), “[t]he knowledge building trajectory starts with the early, natural ability to play with ideas and extends to the not-so-natural and relatively rare intentional processes that serve to continually improve ideas” (p.271). At first, students are encouraged to play with ideas because doing so will build intentionality; that is it will help them develop the ability and option to know their learning needs and identify the next steps. This is necessary because students “need to understand in order to make conceptual advances, with others [they must first be] engaged in helpful support activity (offering references, suggesting alternatives, and so forth)” (Scardamalia & Bereiter, 2009, p.
Collective knowledge advancement. The voices of classmates can influence what we think, write, and say. There needs to be decentralized, open knowledge building, with a focus on collective knowledge. There needs to be an elimination of the pattern in which the teacher initiates dialogue, the students respond, and the teacher evaluates. KBCs should adopt a distributed model in which information is shared and passed along freely without going through a central authority. This will encourage more productive and informative exchanges between students. Increasing students’ access to diverse contributions will not only reshape their own understandings, but also allow for collective knowledge advancement.

Idea improvement. In a KBC, ideas are cultural artifacts and are enhanced through specific community discourse. Although arguments and negotiations may sometimes occur, ideas improve when students identify a weakness in a construct, suggest new solutions, and engage others in a dialogue and critical review. For Scardamalia and Bereiter (2003) “Improving ideas, not winning arguments, is the essence of knowledge building” (p.272).

These four elements are necessary to successfully foster a KBC, however some scholars (Slotta, 2014) have pointed out that although Knowledge Forum provides various features to scaffold student learning (i.e. linking, build-on notes, rise-above notes, etc.), the platform “provides minimal imposed structure or guidance, as it aims to support a wide array of student-defined inquiry questions and methods…Other knowledge community approaches emphasize more structured interactions, including carefully designed sequences of collaborative, cooperative and collective inquiry activities.” (Slotta, 2014, p. 1)
### Summary of Community Models

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<th>Definition</th>
<th>CoP</th>
<th>CoI</th>
<th>KBC</th>
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<tr>
<td><strong>Definition</strong></td>
<td>“Communities of Practice (CoP) are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger, 2011, p. 1).</td>
<td>“The [community of inquiry] CoI framework is a process model that provides a comprehensive theoretical model that can inform both research on online learning and the practice of online instruction” (Swan et al., 2008, p. 1).</td>
<td>A knowledge building community (KBC) is an educational community model which aims to advance and nurture collective knowledge in a subject or field in a way that supports the growth of each members’ knowledge in the community.</td>
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<td><strong>Elements</strong></td>
<td>- Community</td>
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<td><strong>Goals for Learning</strong></td>
<td>Learning is not seen as the acquisition of knowledge, but happens during social participation (Wenger, 1998). The interaction between old-timers and newcomers allows the newcomers to develop their knowledge by practicing with the older-timers. This helps them develop their professional identity.</td>
<td>Learning is seen as a collaborative process that should be supported by meaningful inquiry and deep engagement with ideas.</td>
<td>“Students work cooperatively and collaboratively to develop a ‘knowledge base’ of resources that are accessed, negotiated, revised and applied during the course of the inquiry-oriented curriculum” (Slotta, 2014, p. 1).</td>
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2.3.4 The Sense of Community Concept

The sense of community concept has grown in popularity over the years, especially within distance education. The concept emerged from community psychology, which emerged from social events occurring at the time. According to Sarason (1974), some of these events included: the Supreme Court’s decision to end the racial segregation of schools in 1954, the success of the Russian Sputnik in 1957, President Kennedy’s message to Congress in 1963 which officially recognized the importance of community mental health, and President Johnson’s War On Poverty program in 1964. These events emphasized a need for the healing of society. It was within this social context that post-secondary institutions became interested in researching their communities’ problems, and the field of community psychology emerged. Nevertheless, community psychology developed as “a reaction to what was happening in the larger society” (Sarason, 1974, p. 38). Furthermore, community psychology arose because so many social scientists recognized that communities in society were dealing with so much conflict and had lost that psychological sense of community. As a result, community psychologists tasked themselves with bringing people together, helping people achieve agreement, and, more importantly, helping members of communities attain a psychological sense of community. For Sarason (1974), this concept was developed to reinforce the importance of community life and bonding with community members. For instance, Sarason (1974) states: at some point everyone will feel and experience the presence or absence of a psychological sense of community. Despite the size and energy of the group, the characteristics are not difficult to identify, this includes: commonality with other students, embracing interdependence with other students as well as having a willingness to nurture this interdependence by supporting fellow students in achieving their learning goals, and having a feeling of belonging to the group in which one’s contributions are
valued. Simply put, you know the feeling of community, you know when you are experiencing it and when you are not. For Sarson and others, a psychological sense of community is needed to help people embrace togetherness (i.e. celebrations such as a political victory party) and counter external conflict (i.e. war or a catastrophe like an earthquake). For Sarason (1974), a psychological sense of community is a major factor for self-definition and judging external events. Over the years, scholars have embraced and adopted the sense of community concept into their work, emphasizing the need and importance of community. The concept has been adopted and reshaped by McMillan and Chavis (1986) and Rovai (2002a), who have also helped popularize the concept.

2.3.4.1 McMillan and Chavis’ psychological sense of community (PSoC).

PSoC, as the name implies, is based on an internal sense of community rather than any external characteristics of the group. This definition can be applied to both place-based and non-based place communities. For McMillan and Chavis (1986), community can be developed and maintained with four attributes: membership, influence, integration and fulfillment of needs, and shared emotional connection.

Membership is defined as the feeling of belonging and being able to relate to others on a personal level. Having boundaries to know who is and is not in the community is important in allowing members to determine how to spend resources, share insights, and with whom to feel comfortable. Establishing such boundaries allows members to feel emotionally safe in the community, provides structure and security, and protects group intimacy. When members feel emotionally connected to other group members, they feel a sense of acceptance and belonging. When members experience a sense of belonging and feel safe within a community, they are more willing to make sacrifices for that community.
Influence refers to members’ feeling they have the potential to influence the group, as well as the group’s ability to influence its members, which is needed to maintain cohesiveness. This influence is independent of positions of authority, and instead focuses on members having the feeling of mattering. This feeling of mattering includes members feeling like they make a difference to the group and the ways in which the group matters to its members. When members feel like they matter, through influence, then they are able to validate the group’s views and shared goals.

The integration and fulfillment of needs is the feeling that the resources received from the group will meet members’ needs. Members must feel as though their association with the group will be rewarding and give them access to resources that will benefit them. However, when successes and accomplishments happen because of group activities, members feel a closer sense of attachment to one another and the community becomes stronger. In addition, when group members have shared values, needs, and priorities, the group is better able to focus on the resources and issues that speak to those values and priorities. This leads to the belief that they can meet their needs by coming together.

Lastly, shared emotional connection, which is partially based on a shared history, is the final attribute for developing a sense of community. Not all members need to have participated in the shared history in order to feel the connection, but they do need to identify with it. In addition, McMillan and Chavis (1986) emphasize that for members to develop stronger bonds they need to interact with each other. Only then will members be committed to sharing experiences and being together.

When members develop this emotional connection McMillan and Chavis (1986) believe only then are they willing to take emotional risks with and for other members and focus on the
welfare of all group members. Simply put, for McMillan and Chavis (1986), a community refers to “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together” (p. 9). Although, McMillian and Chavis’ (1986) PSoc concept has been used and investigated extensively in the field of community psychology (Peterson, Speer, & McMillan, 2008) it has been underused in the field of education. Some researchers believe that more studies are needed to “help determine if the model is able to offer insight into real-world applications of course design and structures that may, in turn, affect attrition rates and student satisfaction” (Dueber & Misanchuk, 2001, p. 18). In contrast, Rovai’s sense of community (SoC) concept, which builds on McMillan and Chavis’ PSoc concept, has frequently been used in many empirical studies within the field of education, because of its popularity. As a result, Rovai’s SoC concept was able to provide the insight into course design, which the PSoc struggled to do (Drouin, 2008). It will be considered next.

2.3.4.2 Rovai’s sense of community (SoC).

Rovai (2002a) argues that members of a community possess four characteristics: “spirit, trust, interactivity, and common expectations and goals” (p. 4). According to Rovai (2002a), in an online course community learners have common expectations and goals. They have a sense of connectedness and feel like they are a part of the group (spirit), rely on other members (trust), and interact with other members (interactivity). Other researchers, such as Chapman, Radmondt, and Smiley (2005), suggest that community includes elements such as familiarity, honesty, openness, dialogue, empathy, trust, diverse opinions, and disclosure. Vesely, Bloom, and Sherklock (2007) outline common elements of communities as a shared purpose, boundaries that
clarify membership, rules for community behaviour, interaction between members, and the development of relationships based on trust, respect, and support.

According to Rovai (2002b), a classroom community, whether physical or virtual, is fostered through four dimensions: spirit, trust, interaction, and shared goals and expectations, such as learning. The first dimension, spirit, refers to learners recognizing each other and feeling connected through friendships and other bonds as they work together (Ouzts, 2006; Rovai, 2002b).

The second dimension, trust, refers to members’ ability to trust each other. It has two components: credibility and benevolence. The first component, credibility, refers to members being able to rely on other members’ words. The second component, benevolence, refers to members being genuinely interested in the welfare of other members and being willing to help others in their learning (Rovai, 2002b).

The third dimension, interaction, is seen as an important element for creating a SoC (O’Hara, 2008; Stepich & Ertmer, 2003). There are two types of interaction according to Rovai (2002b): task-driven interaction and socio-emotional interaction. The first interaction, task-driven, is controlled by the instructor and often takes the form of students responding to the instructor’s generated discussions or assigned tasks. However, this type of interaction is seen as having a negative impact on the SoC by reducing feelings of safety and trust among learners. This is because they might be hesitant to criticize others because they fear retaliation (Rovai, 2002b). The second interaction, socio-emotional, is generated by students and instructors which includes exchanging empathic messages and self-disclosure (Richardson & Swan, 2003; Rovai, 2002b). This type of interaction encourages learners to share more personal information, which may allow them to learn more about each other and build trust, support, and safety (Rovai,
The last dimension, shared goals and expectations, emphasizes that interaction among students is essential for the learning process because it promotes a shared connection (Ouzts, 2006). In sharing educational goals and unifying practices, students’ develop new attitudes for learning (Lave & Wenger, 1991; Rovai, 2002b). This level of participation deepens students’ understanding of the content (Rovai, 2002b). In summary, for Rovai (2002b) a SoC is an essential component for all community models, and all four dimensions need to be present to create a SoC.

2.4 Common Elements for Building a Community

Although each model offers different ways for building a community in an online course community, they do share five common SoC elements: valuing identities, promoting interaction, developing shared interests, sharing personal experiences, and supporting group members’ learning processes.

The first element, valuing identities, refers to the idea that for students to feel as though they are truly part of a community, they need to feel as though their identity is welcomed and accepted (Garrison & Arbaugh, 2007; Rovai, 2002b). It is where all students fit into the group identity, allowing them to be a part of the groups’ common endeavours and shared interests (Wenger, 2008; Eckert, 2006). This acceptance means students are able to recognize and share their learning needs without being embarrassed because they expect to receive support from their peers (Brown & Campione, 1994; Scardamalia, 2003). When a student’s identity fits with the groups’ goals and beliefs, this is referred to as identity congruence (Hughes, 2007). Identity incongruence occurs when a student’s identity does not fit with the group (Hughes, 2007). When there is identity congruence, individuals are more likely to participate than when there is
incongruence (Hughes, 2007). In an online course community, “members share perspectives and also challenge and refine these perspectives” (Thurston, 2005, p. 356) to create shared meanings and understandings with their classmates (Ehrhardt, 2013). These interactions are likely to produce identity congruence because students are provided with opportunities to explore diverse viewpoints and learn about each other’s identities. Therefore, to overcome the feelings of isolation and disconnection that can occur among online learners, students need to respect each other’s identities. This can be achieved through collaboration and interaction, which invites students to thoughtfully and respectfully engage with each other without the fear of being marginalized due to cultural or ethnic differences (Cameron, Morgan, & Williams, 2009; Young & Bruce, 2011).

The second element, interaction, is strongly emphasized in all three models, and is seen as an essential component for fostering a community in an online course community (Swan, 2001; Yoon, 2003). This element includes a range of interactions, such as joint activities (Wenger, 2008), task-driven and socio-emotional interactions (Rovai, 2002b), exploring a variety of contributions to encourage the development of collective knowledge (Scardamalia, 2003), and deliberately distributing student expertise to encourage collaboration and knowledge sharing among students (Brown & Campione, 1994). Researchers (Garrison & Arbaugh, 2007; Moore, 1989) concerned with online learning have identified three types of interactivity that support learning in online course communities: learner-to-content interaction, refers to learners having the opportunity to access content, manipulate information, and combine new ideas with their preexisting knowledge; learner-to-learner interaction, refers to learners having the ability to communicate with one another about content in order to develop new understandings and create an active learning community; and learner-to-instructor interaction, refers to learners
communicating with their instructors to receive feedback. However, with the advancement of technology Hillman, Wills, and Gunawardena (1994) believed that Moore’s (1986) needed another type of interaction, therefore, they expanded it to include an additional type of interaction: learner-interface interaction, which refers to the interaction between the learner and the technological platform allows the student to interact with the content, instructor, and other learners.

In a study conducted by Swan (2001; 2002), she pointed out that online course communities with a clear structure and an easy to use interface (interaction with content), that offer increased access to the instructor (interaction with instructor), and more equitable and democratic discussions (interaction with classmates) are more successful. In her study, Swan (2001) investigated these interactions further and discovered the following: 1) students who experienced higher levels of activity in online course communities were more satisfied and felt that they had learned more; 2) students had higher perceived levels of interaction with the instructor were also more satisfied and felt that they had learned more than students who reported fewer interactions with the instructor; and, lastly, 3) students who reported more frequent interactions with their classmates also felt more satisfied with the online course community and believed that they had learned more from it. More specifically interactions with the interface, the instructor, and their classmates are necessary for students to have positive and meaningful online learning experiences. In practice, none of the three kinds of interactivity function independently, as they are all closely connected. For example, “[i]nteraction among students, for example, is supported by instructor facilitation and support, which, in turn, centers on content” (Swan, 2002, p. 24).

It is believed that “[w]hen instructors design courses that encourage student interaction,
the strength of the community that emerges often depends on how the students engage with each other and with the course” (West, 2010, p. 2). For instance, when students interact through collaborative learning activities, it is said that participation and connectedness among online learners increases because students receive helpful peer feedback, share personal experiences, and develop critical thinking skills (Boerma, Stanley, & Westhorp, 2007; Holley & Dobson, 2008). Furthermore, such collaborative interactions can deepen students’ understanding of the content, increase their higher order thinking, and give them personal satisfaction and comfort online (Engstrom, Santo, & Yost, 2008; Snyder, 2009). Therefore, if implemented properly collaboration in an academic course may further support learning, however it is also important to recognize that collaboration may not be necessary for all learners since some might prefer to learn alone. According to Kreijns, Kirschner, and Jochems (2003), interaction is a prerequisite for collaboration and, therefore, for the development and maintenance of an online course community. Simply put, interaction within a community helps learners develop a deeper understanding of the content. Interaction within a community helps learners develop meaningful relationships so that they recognize “that they are mutually dependent on each other to achieve community goals” (Ryman et al., 2009, p.33).

The third element, shared interests, refers to members having common interests (Wenger, 2008) and educational goals and practices (Rovai, 2002b) that allow them to construct a shared meaning and understanding of the content through joint reflection (Garrison & Arbaugh, 2007; Scardamalia & Bereiter, 1994) and a sense of accountability (Brown & Campione, 1994). Research suggests that having shared interests motivates students to examine and reconsider their own ideas from new perspectives (Salmon, 2000). Whiteman (2002) argues that “[p]eople feel more comfortable around us when they believe we share a kinship and common values” (p. 8).
When students within an academic course lack these shared interests and common goals, participants may see it as impersonal and the information they share with one another will decrease due to this discomfort and lack of kinship (Leh, 2001).

The fourth element, sharing personal information, includes students being able to share personal experiences (Wenger 2008; Brown, 2001), exchange emphatic messages and self-disclosure (Rovai, 2002b), express their emotions, ideas, and views (Garrison, Anderson, & Archer, 2000; Garrison & Arbaugh, 2007; Lipman, 2003; Vaughan, 2004). This helps students to further develop their ideas, expand their knowledge base (Scardamalia & Bereiter, 1994), and develop expertise (Brown & Campione, 1994). Research suggests that when students are able to express emotions by sharing personal information it helps online learners to build trust, safety, and comfort within the group, which strengthens the community (Garrison & Arbaugh, 2007; Richardson & Swan, 2003; Rovai, 2002b).

The fifth element, supporting and helping group members learn, refers to sharing information and building strong relationships that foster learning among students (Brown, 2001; Wenger, 2008); having a genuine interest in the welfare of other members and an investment in their learning (Brown & Campione, 1994; Rovai, 2002b); providing helpful support by offering references, making suggestions, and so forth to peers (Scardamalia & Bereiter, 2006); and establishing a teaching role that motivates, guides, and supports all learners’ needs through various online course community formats (Duphorne & Gunawardena, 2005; Garrison & Arbaugh, 2007; Moore & Marra, 2005; Oriogun, Ravenscroft, & Cook, 2005; Schrire, 2004). Rovai (2002b) suggests that when students support each other’s learning, they become more open about gaps in their knowledge.

In summary, the CoP, CoI, and KBC models share elements with the SoC concept for
developing a community in an online course community. Each model emphasizes that fostering community is important because it encourages students to value one another’s identities; provides opportunities for interaction and collaboration; helps students develop shared interests, educational goals, and practices; and, lastly, encourages students to support and help other members reach their learning goals. However, each of the model’s definition of a community is different and each struggles to clearly state the role community plays in online learning. As well, each model provides different elements for developing a community. More importantly, none of the models provide guidance on how community can be measured in an online course community, a critique echoed by Swan et al. (2008) when discussing the CoI model. How does one know to what degree community exists online? As a result, many researchers have developed and investigated various community scales in an attempt to help measure the degree of community in online course communities.

2.5 Existing Community Scales

Currently, “there is much debate about how best to measure sense of community and what factors it comprises” (Randolph & Crawford, 2013, p. 54). Although the most frequently used scale for measuring a sense of community (SoC) is Rovai’s (2002b) Classroom Community Scale (CCS), other researchers, including Tu (2002), Lin (2004), Young and Bruce (2011), and Bolliger and Inan (2012), have created online course community scales (or similar constructs) to help educators better measure a SoC and the factors that indicate it.

2.5.1 Classroom community scale.

Rovai’s (2002a) classroom community scale (CCS) is probably the most frequently used scale for measuring a sense of community (SoC) in online course communities. The purpose of the
scale was to assist educators in measuring a SoC in university-level online course communities. The scale items were based on a review of the literature, which revealed that feelings of connectedness, cohesion, spirit, trust, and interdependence among members were found to be the main characteristics of a SoC, regardless of the setting (physical or virtual). Therefore, Rovai developed a 20-item scale to measure the characteristics of a SoC on a five-point Likert-type scale with the following potential responses: strongly agree, agree, neutral, disagree, and strongly disagree. The scale was given to 375 students enrolled in 28 different graduate-level online course communities. A panel of experts consisting of three university professors rated the relevance of each classroom community scale item. The 20-item scale was then organized into two categories, connectedness and learning, with “10 items related to feelings of connectedness and 10 items related to feelings regarding the use of interaction within the community to construct understanding and the extent to which learning goals are being satisfied within the classroom setting” (Rovai, 2002a, p. 202). Higher scores on this scale indicate a stronger sense of community, whereas lower scores indicate a weaker sense of community. Therefore, understanding the level of community in a course requires measuring two factors: connectedness and learning.

The first factor, connectedness, refers to “the feelings of the community of students regarding their connectedness, cohesion, spirit, trust, and interdependence” (Rovai, 2002b, p. 325). Connectedness refers to a student’s sense of belonging and feeling like they are active and accepted members of the community. Once members feel connected, they start to build trust amongst themselves and are more willing to be open, share personal experiences, and react honestly. Students must have a sense of belonging because this will allow them to feel as though their participation will satisfy their own learning needs as well as those of their classmates’.
The second factor, learning, refers to the “feelings of community members regarding interaction with each other as they pursue the construction of understanding and the degree to which members share values and beliefs concerning the extent to which their educational goals and expectations are being satisfied” (Rovai, 2002b, p. 206-207). In a community, the learning process requires students to recognize that they have duties and obligations not only to their own learning needs, but also to those of their peers. Students must trust that their educational goals will be met through the shared learning process.

Despite its popularity, Barnard-Brak and Shiu (2010) questioned the validity of Rovai’s CCS. After using the scale in their study, Barnard-Brak and Shiu (2010) concluded that: the construct validity of the scale can be refuted because the scale failed to reveal the factor structure that is claims to have. Furthermore, while Rovai (2002b) highlights the reliability and validity of the scale Barnard-Brak and Shiu (2010) emphasize that their study only found evidence to support the reliability of the scale but the validity. As a result, Barnard-Brak and Shiu (2010) recommend that researchers use this scale with caution when studying blended and online learners. Although this scale has been used successfully in other blended research studies (Rovai and Jordan, 2004), Barnard-Brak and Shiu (2010) do not recommend further use in blended studies because their study found evidence to support the reliability of the scale but not the validity of it. Nevertheless, it is important to mention that this scale has predominately been used in studies examining classroom communities. For example, the CCS has been used to measure the level of community development within groups of adult learners (Graff, 2006; Rovai, 2002b; Shea, Li, & Pickett, 2006), teacher education students (Dawson, 2006; Overbaugh & Lin, 2006), and many others. Furthermore, there are more recent studies that still opt to use this scale. Taking this into consideration, Rovai’s (2002a) CCS still has more empirical support than any
other scale. Additionally, because the literature on community has been called into question for lacking empirical support, the attraction to the CCS is understandable.

2.5.2 Social presence and privacy questionnaire.

Tu (2002) developed the social presence questionnaire of online collaborative learning because they found that previous measurements were “too general to measure the CMC user’s perception of social presence” (p. 38). The questionnaire was developed from two existing instruments, the (computer-mediated communication) CMC attitude instrument (Steinfield, 1986) and the perceived privacy instrument (Witmer, 1997), and was given to 310 in-service and pre-service teachers. For Tu (2002) there are four factors, which are needed to help foster social presence: social context, online communication, interactivity, and online privacy. Tu’s (2002) questionnaire measures social presence in e-mails, on bulletin boards, and in real-time discussions. The questionnaire contained 17 social presence items, 13 privacy items on a five point Likert scale, and 12 demographic items. The first factor, social context, refers to the opportunity to informally and casually communicate with others, and feeling comfortable talking with familiar people. Interestingly, respondents emphasized that, because bulletin boards are public and thus more impersonal, personal communication on the bulletin boards is seen as inappropriate. Tu and McIsaac (2002) suggest that if personal communication appears on the bulletin board, it is likely to decrease social presence.

The second factor, online communication, refers to the degree to which the environment encourages students to convey their feelings and emotions, as well as the degree to which the language used to communicate is stimulating, meaningful, expressive, and easily understood. For respondents e-mails and real-time discussions were seen as more private than bulletin boards, which meant communicating could be more personal and users felt more comfortable using
socio-emotional language to express their ideas and intentions when communicating over e-mail or in real-time discussions. Conversely, bulletin board discussions were seen as less stimulating, emotional, and warm than e-mail communications or real-time discussions.

The third factor, interactivity, refers to respondents having immediate and pleasant interactions with others, and feeling comfortable when exploring new ideas. Respondents emphasized that they preferred real-time discussions and e-mails because their peers were more responsive and they were more comfortable exploring topics because these forums were perceived to be more private and have more personal than one-on-one communication.

The fourth factor, privacy, revealed that respondents felt the bulletin board was less private and confidential than e-mails, which were seen as being more secure. However, respondents did emphasize that although online privacy is important to them, they felt computer-mediated communication (CMC) environments were a safe medium to share personal and sensitive topics. A controversial finding indeed, yet it shows that respondents are willing to take risks.

For Tu (2002), “[t]he level of social presence is not only determined by the attributes of media (online communication) and users’ perceptions (social context), but also activities in which the users are engaged (interactivity)” (p. 43). Although online privacy is strongly correlated to social presence, Tu (2002) found that this correlation was weak and could change depending on the respondents, media, and context. As a result, Tu (2002) struggled with whether or not to include online privacy as a necessary element for measuring social presence. However, Tu (2002) also stressed that “this instrument provides only a first step in understanding and measuring the level of social presence in the CMC learning environment” (p. 44). In the process of developing the tool, Tu (2002) discarded some of the factors and emphasized that the
instrument needs more testing and will become more useful when there is a better understanding of how the discarded and remaining factors relate to online interaction. Furthermore, Lin (2004) highlighted that Tu’s (2002) questionnaire focused on participants’ attitudes towards CMC, which made it “unclear whether the reported relationship between attitude toward CMC and the experience of social presence would hold when confronted with specific tasks or opportunities in specific social groupings” (p. 588).

2.5.3 Social presence questionnaire of online collaborative learning.

To better understand how social presence is constructed and maintained Lin (2004) developed a social presence instrument that examined social presence in online course communities. The instrument contained 10 social presence items developed from surveying the social presence literature and 10 items which focused on social navigation and awareness others which were developed from surveying the computer support for cooperative systems (CSCW) literature. The items were placed on a 7-point continuum with endpoints of strongly agree (1) and strongly disagree (7). The survey was given to 15 graduate students in an online course community. Based on this study, Lin (2004) suggests that there are three factors that need to be measured in order to determine the social presence level in an online course community. These factors included: perception of the assistance of group activity to learning, social comfort when expressing and sensing affect, and social navigation.

The first factor, perception of the assistance of group activity to learning, refers to students having a sense of belonging, feeling comfortable participating online, having the opportunity to bond with other students, and learning more in group activities than on their own. The second factor, social comfort, refers to feeling comfortable expressing emotions to other classmates, appreciating the emotions of other classmates, and being able to form distinct
impressions of other individuals. The third factor, social navigation, refers to students being aware of one another’s work which encourages them to improve the quality of their work. According to Lin (2004), the scale is reliable and meets acceptable standards; however, the sample size was considered inappropriate and future studies will be planned with larger sample sizes.

2.5.4 Online community and engagement scale.

Young and Bruce (2011) developed the online community and engagement scale, which consists of 23 items on a Likert scale and 6 demographic items in 47 different online course communities across various disciplines. The goal was to gain a better understanding of the relationship between community and engagement and to determine there were any differences between the two across disciplines. The scale was developed from scales “used to assess community and engagement in traditional face-to-face classrooms as well as the literature on community and engagement in online classrooms” (Young & Bruce, 2011, p. 221). According to Young and Bruce (2011), there are three factors to consider when measuring community. These factors include: community building with the instructor, community building with classmates, and engagement with learning.

The first factor, community building with the instructor, refers to “how the students viewed the community that was built by connections with instructors” (Young & Bruce, 2011, p. 4). Contact with the instructor, timely responsiveness from the instructor, and trusting that the instructor will handle inappropriate online behaviour were important to students when building community with the instructor.

The second factor, community building with classmates, refers to “the community that was built by connections with classmates” (Young & Bruce, 2011, p. 222). Feeling committed to
working with classmates, interacting with classmates, supporting classmates, and personally connecting with classmates were important to students when building community with classmates.

The third factor, engagement with learning, refers to “student engagement with their own learning” (Young & Bruce, 2011, p. 222). Students emphasized that being well-organized in their own learning was important in order to have a strong sense of engagement with the content and other students. Young and Bruce (2011) discovered a moderate but positive correlation indicating that students who are motivated to work with each other become more engaged in their own work. It was also discovered that when students felt connected to their peers and engaged in online course community activities they had more confidence in their academic achievements and expected to receive higher grades. This specific scale surveyed 1,410 undergraduate and graduate students across five faculties (Agriculture, Arts and Sciences, Business, Education, and Health Sciences). Having a large sample population across different disciplines makes this particular scale generalizable to other online course communities.

2.5.5 Online student connectedness survey.

Bolliger and Inan (2012) developed the online student connectedness survey to measure students’ perceptions of an online course community. A review of the literature suggested four factors associated with student connectedness: comfort, community and social presence, facilitation of learning, and collaboration and interaction. The instrument consisted of 25 items on a Likert scale and was given to 146 students enrolled in three online programs (education, business, and nursing).

The first factor, comfort, refers to feeling secure learning in the online course community and comfortable navigating the environment. This factor also refers to learners feeling
comfortable participating without feeling fearful that they will face persecution or retaliation from peers. When learners do not feel safe, they are more likely to limit their interactions with instructors and classmates, which can cause them to miss some learning opportunities. They will also be less likely to ask for support. Therefore, it is important for instructors to create safe online course communities. The second factor, community and social presence, emphasizes that learners who do not feel like they are a part of the community are likely to be defensive and unwilling to take risks in their learning. Online learners can also feel disconnected and lonely if they experience a lack of social support or rejection from others. To combat these negative feelings, researchers suggest integrating communities into online courses. In particular, Bolliger and Inan (2012) strongly encourage instructors to create social presence, which is an element from the community of inquiry model, so learners could feel at ease in an online course community. However, Bolliger and Inan (2012) warn that creating a community is not the answer for all challenges, as some students may not need, expect, or value a sense of community. This is because, for each individual, loneliness may occur for different reasons. These reasons may include, not receiving the support they need or feeling like others do not meet their expectations.

The third factor, facilitation of learning, refers to instructors ensuring that students have the opportunity to communicate, interact, and collaborate with their classmates. Doing so may minimize feelings of isolation among online learners. When learners are encouraged to create meaning through interaction and collaboration, as well as through individual activities, they become motivated “to read, speak, listen, think deeply, and to write” (Berge, 2002, p. 184). This fosters a friendly and open style of communication, which helps students feel closer to each other because the psychological distance is reduced (Tu & McIsaac, 2002). Therefore, good online
teaching happens when instructors facilitate courses effectively.

The fourth factor, collaboration and interaction, emphasizes that activities that require students to collaborate can reduce feelings of isolation. More importantly, by interacting with others, ideas are manipulated, enhanced, and redefined to create new knowledge. Interacting with the content, their peers, and the instructor allow students to effectively process information and generate new understandings and knowledge for their own personal growth. For Bolliger and Inan (2012), these are the four factors that need to be measured to determine the level of community in an online course community.

For this study, Rovai’s (2002a) community scale will be used to measure community simply because it has more empirical support than other scales. This review of the instruments currently being used to measure community (or social presence) in online course communities suggests there is still a lack of agreement about how to conceptualize and measure community. Part of the difficulty of measuring community in online course communities results from the new characteristics of instructors having to navigate the platform itself, such as the reduction in social cues. However, it is vital to remember that community may hold different meanings for different learners. Nevertheless, there is a growing appreciation for these scales’ potential to explain participation and learning outcomes in distance education. It is also important to acknowledge and understand the importance of community for student learning.

2.6 The Relationship Between Community and Learning

A review of the literature related to community and student learning suggests that there is a predominately positive relationship between the two, which has been documented by a number of authors. For example, Vesely et al. (2007) surveyed students about their views on the role of community in an online course community in relation to their academic performance. The
research findings revealed that 85% of students believed that being a part of an online course community was helpful to their learning. Similarly, Liu et al. (2007) conducted research, which also focused on students’ views about their online learning experiences. The results of the study indicated that there was a positive correlation between students’ sense of community (SoC), their level of engagement, their satisfaction with the online course community, and their perception of their learning. In other words, when there was a strong SoC, students participated more frequently and felt that they were learning more.

Other scholars assert that a community can help reduce feelings of isolation and disconnection in online learners. Rovai (2002b) conducted a study with 314 students in 26 online graduate education and leadership courses. The aim of the study was to determine if there was a relationship between a SoC and cognitive learning. The results revealed that there was a positive correlation between community and learning. That is, when students had a stronger SoC and thought they were learning more, they were less likely to feel isolated and more likely to be more satisfied with their academic progress. As a result, students who felt this connectedness and closeness rather than isolation became more active participants in their online learning. For instance, Young and Bruce (2011) conducted a study examining the relationship between classroom community and student engagement. The study included 1,410 students across five faculties in both undergraduate and graduate online course communities. At the time of the study, the university’s student population consisted of 56% females and 44% male. However, Young and Bruce (2011) does mention that the study sample did not reflect the university’s population because it included more students from the nursing and education fields, which are highly favoured by females. Students were asked to complete an online survey, which focused on classroom community, engagement, and learning. Findings revealed a positive correlation
between community and engagement, indicating that students who were motivated to helping each other were more engaged in their own learning. Engagement was also positively correlated to students’ grades, suggesting that those students who felt connected to their peers were also engaged in course activities and were more likely to achieve higher grades. Interestingly, Young and Bruce (2011) also found that students in the College of Education and Health Sciences reported higher levels of engagement than students taking Arts and Science courses and also believed they learned more than their peers in other courses due to the collaborative and interactive nature of their course activities which originated from having a community. Perhaps, the collaborative nature of the online course communities offered by the College of Education and Health Sciences was enjoyed more because these faculties had more female students, as previously mentioned, who typically express more need for community than their male peers. Nevertheless, the findings from Young and Bruce’s (2011) study, further emphasizes the relationship between community and learning.

The literature suggests that when students interact more with each other by sharing their personal experiences, views, and resources, a number of important developments occur: students deepen their understanding and thinking (Hulon, 2013; Larson & Keiper, 2002); they further develop their knowledge (Song & McNary, 2011; Swan, 2009); they increase their high order thinking (Engstrom, et al., 2008; Snyder, 2009); and they engage in more reflective discourse that allows them to examine their own ideas from new perspectives (Salmon, 2000). This occurs when students become more aware of what they are writing (in their online notes), for whom they are writing, and the ways in which their writing connects to their peers’ notes and to the content (Clark & Brennan, 1991; Garrison, 2003; Hewitt, 2001; Poole, 2000), all of which is made possible by the existence of a community of learners (Garrison & Anderson, 2003;
Hawkes, 2006). Ascough (2007) and Liu et al. (2007) suggest that knowledge acquisition and meaningful learning experiences in an online course community can be achieved if there is a welcoming teaching and learning community. However, some researchers have pointed out that an online course community may not be equally effective for all learners.

For instance, the role of gender in online learning has been explored extensively, revealing evidence that men and women not only communicate differently online but they also have a different SoC and perceived learning. Rovai and Baker’s (2001) research findings suggest that in online course communities the majority of men adopted an independent voice, which tends to be more assertive, impersonal, and authoritative; whereas the majority of women adopted a connected voice, which tends to be more supportive and helpful. This research is consistent with that reported by Hall (1996) and Herring (2000) which suggests that online course communities with predominately more females or a course in which the instructor ensures communication stays civil are likely to develop a polite, supportive, and civil online discussion which follows the female style of communication. Similarly, after examining students in the State University of New York (SUNY) Learning Network, Shea et al. (2001), found that female students adopted more learner-instructor and learner-learner interactions than their male peers, thus reinforcing the idea that women preferred a more connected approach rather than a separate approach to learning.

Although gender differences relating to online communication patterns have been consistent in the research, studies have been inconsistent with regards to student achievement and satisfaction. Rovai and Baker (2005) found that “men and women communicate at different levels, perceived community differently, and have differing views of perceived learning in an online education environment” (p. 42). More specifically, females had higher scores with regards
to a SoC in the online course community and perceived learning, posted more often, and participated in the course at higher rates than their male peers. Rovai and Baker (2005) emphasized that females seemed to thrive more in online course communities than their male counterparts. Similarly, Shea et al. (2006) discovered that women in the SUNY Learning Network expressed more satisfaction with online learning than men. In contrast, Lim (2001) considered the influence of gender along with other factors regarding student satisfaction online, and found that computer self-efficacy was the main influencer. Nevertheless, gender differences in online learning exist, which highlights that a community online may not be equally effective for all learners. As Rovai and Baker (2005) suggest: it is important to remember that some online learners might not enjoy or be interested in developing a sense of community. These learners might view the development of community to be unsupportive and harmful to their own learning, thus not worth putting forth the time or effort engaging with others (Rovai and Baker, 2005). To add, it is possible that men in online learning might prefer to avoid collaborative and relational opportunities due to lack of interest, and are more likely to claim lower levels of learning when a sense of community is emphasized (Rovai and Baker, 2005). These gender-based studies illustrate a tension between community and its effect on the learning experiences of some online learners. More importantly, although many research studies highlight the benefits of fostering a community, others have expressed the challenges in doing so.

2.7 The Challenges of Building a Community

In this section, I report on four elements identified in the research as challenges for building a community: resistance, time-consuming, lack of strategies and rules, and limitations of the online course community.
2.7.1 Resistance

Some online instructors “did not think that a sense of community is a relevant concept for online learning because they believed that the advantages of online learning are flexibility and self-paced learning” (Liu et al., 2007, p. 17). Similarly, when investigating the process of how community-building occurs in an online course community, Brown (2001) found that some students were resistant to being part of a community and intentionally avoided community activities. These students provided explanations for their resistance:

1. Students did not think about community before enrolling in the class or during the class. They were only interested in the class for the knowledge and class credit.

2. Some students did not want to participate in community activities, such as giving supportive messages, especially because they knew this interaction would not be considered when their grade was determined. These students did the required work and nothing more.

3. Some students were out of sync with the course due to family and work responsibilities, health problems, or technology trouble, which prevented them from fully participating in the course.

4. Some students’ definition of community clashed with the idea that community could be found online because they felt community could only happen in face-to-face interactions. However, Brown (2001) quickly points out that it was students’ voluntarily associations with each other (such as in the cafeteria, by e-mail, or over the phone) that went beyond class requirements and created community for many students.
Lastly, some students did not believe the class required additional time or devotion. These individuals found one classmate online to regularly respond to, but did not develop other relationships beyond that one peer. These students talked about community happening in the course, perhaps wanting to be part of it, but could not find the time to participate or would not devote the necessary time.

These explanations highlight how not knowing the role of community in online learning can prevent students from fully understanding how community may support and reshape one’s online learning experience. Both online instructors and students need to understand and recognize the importance of communities. According to West (2010), “[s]tudents usually have plenty of experience with online social technologies, but they lack understanding about how to use these tools and methods for course learning” (p. 69). Therefore, West (2010) created a guide based on current research and practice to better inform students about communities, the benefits they offer, and how students can help in building successful communities. He developed this guide because many students seem to resist participating in a community due to not knowing the role of community in online learning. For some scholars (Liu et al., 2007), building a community may be a challenge since there is no clear explanation of the role of community in online learning. For that reason, to motivate instructors and learners to invest their time and efforts in fostering a community, it is necessary that both teachers and students clearly understand the role a community plays in the online learning process.

2.7.2 Time-consuming.

Some online instructors and students emphasized that it was too time-consuming to establish, maintain, and participate in a community online (Liu et al., 2007). According to West
(2010), the successful establishment of a community in an online course community depends on the effort put into it by its members. As Palloff and Pratt (2003) explain, online learners need to acknowledge and accept that the role of the instructor will be different in an online course community than a face-to-face course. Having that understanding, and taking on the responsibility for helping to create an effective community is needed to ensure that meaningful learning happens (Palloff & Pratt, 2003). Therefore, because a community does not develop quickly or easily, online instructors must thoughtfully integrate strategies for community building into their online course communities (Song, Singleton, Hill, & Koh, 2004; Vonderwell, 2003). A study conducted by Young and Bruce (2011) indicated that students in the College of Education and Health Sciences had a stronger sense of engagement in learning and believed they learned more than students from the Arts of Sciences. Young and Bruce (2011) believed that the differences in instructional practices employed across the disciplines (for example, while traditional teaching methods in the hard and applied sciences focus on facts, show students how to practically apply facts by means of problem-solving, and include lectures that are given by the instructor, in the soft sciences, lectures include dialogue between the instructor and students, discussion groups and debates are included, and work is assessed by student and instructor reflections) are very likely to produce different levels of students engagement and sense of community (SoC). Yet, Young and Bruce (2011) emphasize that there needs to be more time and funding focusing on improving students’ online learning experiences and increasing their engagement and SoC, which can only be achieved through adequate professional development for all faculty who teach online. This includes specific design strategies and knowledge of best practices to help build a community, which will provide ample opportunities and support for student interaction, participation, and feedback between students and the instructor. However,
there are no commonly accepted community-building strategies, and those that exist are
debatable (Lock, 2007).

2.7.3 Lack of strategies and rules

Some scholars (Lock, 2007) have criticized the idea of community by citing the lack of clear directions, rules, steps, and strategies offered in the literature to develop online course communities. Despite this, various scholars have attempted to outline purposeful designs for community building (for example, Conrad, 2002; Kanuka, 2002; Song et al., 2004), but doing so is still a challenge (Kanuka & Anderson, 1998; Thompson, 2003; Song et al., 2004). Research suggests that if there are no clear directions, rules, steps, and strategies, instructors and students are likely to lose the motivation to put in the time and effort to create a community online (West, 2010). This lack of guidance makes it difficult for a community to be established in an online course community.

The CoI model and other online-learning community models have come under intense scrutiny for not considering the implications of, and offering strategies to support, multicultural demands, such as valuing identities, that may arise when building a community online (Hodgson & Reynolds, 2005; Morgan, 2011). For example, Hodgson and Reynolds (2005) discuss the idea that although communities are often deemed to be inclusive they can also be exclusive. As Yates (1997) states, there is a belief that a lack of face-to-face interactions in an online course community makes discrimination and exclusion less likely, however, this is not always the case. A member of a community must abide by its core values and norms of behaviours, and to deviate, challenge, or resist these may increase the chances of becoming marginalized by others who want to preserve the community (Hodgson & Reynolds, 2005). Therefore, online instructors need to know and understand specific strategies to value students’ identities so that they feel
accepted and comfortable participating, as not doing so could weaken the community experience for some learners (McInnerney & Roberts, 2004). The lack of consensus on how to build a community can also lead to continuous debate and struggle between scholars and practitioners over what is needed and what works, thus making community building a challenge (Liu et al., 2007; Song et al., 2004; Thompson, 2003;).

2.7.4 Limitations of an online course community

There is a concern that text-based forms of online course communities have some fundamental limitations in fostering and maintaining a community. Two serious limitations are restrictions on fully expressing emotional responses or reactions when giving peer feedback (Lim, Park, & Hong, 2012), and the lack of convergence among students’ online ideas (Hewitt, 2001).

2.7.4.1 Expressing emotion online

Online course communities provide students with an opportunity to communicate and interact with their peers in various ways, such as sharing experiences, information, and opinions, and negotiating ideas to further develop their knowledge and understanding (Song & McNary, 2011; Swan, 2009). However, there is a concern that text-based forms of online course communities have some limitations in allowing students to fully express emotional responses or reactions while giving and receiving peer feedback (Lim et al., 2012). This is due to “the reduced variety of social cues, overemphasis of textual cues, visual anonymity, and resulting deindividuation, [which] can stimulate less self-reflective communication and more stereotypically biased interpretations of other [computer-mediated communication] CMC participants” (Sherblom, 2010, p. 501). This is worrisome because emotion has been identified
as an important factor in the development of a community online (Derks et al., 2008; Edwards, 2005; Perry & Marchand & Gutierrez, 2011). Specifically, expressing emotions helps online learners build trust, safety, and comfort among one another, which strengthens community (Garrison & Arbaugh, 2007; Richardson & Swan, 2003; Rovai, 2002a). As a result of these limited social cues, students often need to become strategic in their communication and interaction. For instance, to optimize self-presentations, develop desirable relationships and perceptions of others, students can strategically manipulate the remaining cues (Duthler, 2006). Therefore, it is important to understand how students express emotions and their reasons for these emotional expressions because it can help educators to better understand “how emotions shape student engagement and learning” (Linnenbrink-Garcia & Perkun, 2011, p. 1).

2.7.4.2 Traditional view of emotion

Emotion is a complex phenomenon. Because there is a lack of consensus on the definition and role of emotion, it has been slow to capture the interest of many scholars. In previous years emotion was considered to be disruptive to learning and teaching, and was thought to negatively impact to cognitive objectives. It was devalued, seen as having no place in learning, and considered to be the polar opposite of cognition. Over the years, scholars have disagreed about the role of emotion. For instance, Plato argued that emotions were “irrational urges” that needed to be controlled (O’Regan, 2003, p.78). Similarly, Emmanuel Kant argued that emotion was an “illness of the mind” (O’Regan, 2003, p.78). As a result of these views, the idea that emotion was erratic and untrustworthy was entrenched, as was the idea that emotion would only have negative consequences on the learning process. These views influenced learning and teaching, resulting in the devaluing of emotion and its role within the realm of education. Moreover, these views positioned emotion and cognition as separate, as having no relationship to one another,
thus playing different roles in education (O’Regan, 2003). Currently, emotion and cognition are seen as important and interconnected elements of learning (O’Regan, 2003). Emotion is no longer seen as being separate or disconnected from cognition; in fact it is now recognized as being a functioning and integral part of cognition. Not surprisingly, the role of emotion in online learning is minimally considered when developing distance education, but that is slowly changing.

2.7.4.3 Online learning and emotion

Often referred to as boring with cold and impersonal communication (Walther, Anderson, & Park, 1994), online learning is seen as being less emotional than face-to-face courses. Research, however, suggests that emotion is very much present in distance education. Zembylas (2008) shows that both positive emotions (which include joy, enthusiasm, excitement, pride, contentment, and surprise) and negative emotions (which include fear, anxiety, alienation, stress, and guilt) play critical roles in online learning. According to Zembylas (2008), students experienced positive emotions towards the flexibility of distance learning, which included the opportunities the online course community provided in relation to being able to work from home. These positive emotions increased as students interacted with their peers and instructor more often and when students realized that their questions could be answered quickly and efficiently which made them feel secure. Students also experienced positive emotions when they developed good organizational skills to successfully fulfill course requirements, which had initially been worrisome for students since navigating the online course community was a new experience. Many students also expressed having positive emotions when they discovered that online learning could have emotional climates. This discovery impacted students’ confidence and work in a positive way by helping them to feel more comfortable interacting with their peers.
On the other hand, negative emotions increased when students were unfamiliar with online learning, did not know or understand the features of an online course community, were unable to cope with and balance multiple roles and responsibilities, and when they felt alienated and isolated from their peers. The negative emotions of alienation and isolation were intensely experienced by students because they could not find satisfying ways to communicate with other students (Zembylas, 2008). Additionally, previous research suggests that the negative emotion of alienation weakens a sense of community (SoC) because it weakens students’ sense of belonging, emotional connection, interactivity, and safety. All of these feelings are understood to be contributing factors in the high attrition rates in distance education (Rovai & Wighting, 2005). The literature strongly suggests that alienation hampers students’ online learning experience, weakens their SoC, and emotionally disconnects them from their peers; this pushes them to eventually leave the course altogether. Rovai and Wighting (2005) discovered that alienation is inversely related to a SoC and happens for two reasons. First, if students do not feel they are valued, they belong, or they have a connection with their online peers, the SoC will be weakened and students will feel alienated. Students need to feel connected to each other on an emotional level, which will strengthen the SoC in an online course community. Secondly, when learners’ personal and cultural beliefs clash with societal beliefs they were also likely to experience a weaker SoC because they did not feel normal. This caused students to assume that others’ would reject and devalue their beliefs because they were not the same as society’s beliefs, causing them to feel alienated and isolated. For these two reasons students are less likely to share with their peers in an online course community.

Both studies emphasize that students experience the negative emotion of alienation when they felt disconnected from their peers on an emotional level, which resulted in a weaker SoC.
However, the studies differ in the reasons they provide for why this disconnection happens. Rovai and Wighting (2005) suggest alienation happens when students’ personal beliefs clash with societal beliefs and with those of others students who have similar views to society. Conversely, Zembylas (2008) found that alienation, isolation, and the need for connectedness were more closely related to students’ struggle to find ways to emotionally communicate with their peers due to the lack of social cues in an online course community. When students feel they cannot properly and appropriately communicate with their classmates online, whether it is because of a lack of cues or because they believe their beliefs would be devalued, they are more likely to develop a weak SoC and pull away. More importantly, having limited social cues within an online course community makes it even more difficult for students to bond and emotionally communicate.

2.7.4.4. Limited cues, limited emotions?

In fact, it is suggested that a lack of social cues within online course community may prevent students from fully communicating and conveying their emotional responses while giving and receiving peer feedback. Derks et al. (2008) explore the different ways emotion is expressed in computer-mediated communication (CMC) and face-to-face courses. They argue that emotional experiences online have the same impact as those that occur face-to-face. Expressing emotions online, however, is less intense because CMC offers a time-lag. This gives people time to think and reflect and leads to more controlled emotional reactions. This greater control of emotional reactions is also due to the lack of social cues in CMC environments, which reduces spontaneity. Similarly, Sherblom (2010) emphasizes that due to the lack of cues in online course communities online learners express emotions differently. In an essay, Sherblom (2010) identified four variables: the medium, social presence, student and instructor interaction,
and the student’s identity, which were found to influence the instructional experience of the CMC. Focusing on social presence, which is the degree to which the online course community facilitates and supports social-emotional communication that allows one to experience and understand the other person, Sherbolm (2010) suggests that a CMC environment “reduces, modifies, and eliminates” physical cues, which restricts social information about an individual (p. 500). This leaves others with an unclear impression of that person, allows for biased interpretations of them, and leads to less self-reflective communication. This surely reduces social presence, but more importantly this loss in social presence also reduces learning. This is worrisome since emotional communication is considered to be integral to the development and maintenance of an online course community (Derks et al., 2008). Sherblom (2010), however, highlights that human communicators are social information processors who will communicate no matter the medium. Communicators are able to adapt their strategies and manipulate available cues to gather information about others’ emotions and attitudes. For Sherblom (2010), limited cues do not necessarily mean limited emotions. People are seen to be natural communicators and will find new ways to gather information about others’ feelings. Finding information just requires more time and effort on the part of students and instructors, especially since there is a lack of information outlining which specific cues students are using to emotionally communicate.

2.7.4.5 The importance of recognizing cues

Traditional classroom learning is guided by face-to-face interaction. Student successes rely on the instructor’s ability to notice and interpret nonverbal cues, modify instruction where necessary, and provide timely feedback to students (Berenson, Boyles, & Weaver, 2008). This approach, however, becomes tricky in an online course community simply because there is
limited information provided on the cues students use to express emotion. Until instructors know the specific cues students use and understand how they use them to express themselves online it will be difficult to modify instruction and provide quick feedback to students. Instructors need to be able to notice and interpret specific activities and strategies, such as cues, that promote comfort and strong emotional communication because student successes rely on this awareness (Rovai and Wighting, 2005). MacFadden, Maiter, and Dumbrill (2002), analyzed a six-week course on cultural competency with 19 learners to determine how learners and instructors experience a new online course community. The study emphasized that the lack of cues interfered with feedback students provided to their peers. For instance, emotional reactions of anxiety and confusion experienced by students were attributed to having limited social cues in an online course community. More importantly, instructors had a difficult time deciphering what the level of emotional engagement was for an online course community. As a result, online instructors opted to end the online discussion to avoid alienating students, but emphasized that if it was a face-to-face course they would have pushed the discussion further because they can see and interpret cues in a face-to-face course. Until instructors know the cues students use to express themselves online they are likely to struggle to modify instruction to support students. Furthermore, instructors may assume the feedback they provide to students is interrupted by the lack of social cues in an online course community, they could simply lack an awareness and the ability to interpret which specific cues students are using to express themselves. As Palloff and Pratt (2007) suggest, “[p]rofessors, just like their students, need the ability to deal with a virtual world in which, for the most part, they cannot see, hear, or touch the people with whom they are communicating” (p. 7). Therefore, it is important to understand how students express emotion in an online course community using these limited social cues and their reasons for doing so
because it can help educators to better understand “how emotions shape student engagement and learning” (Linnenbrink-Garcia & Perkun, 2011, p. 1). It is important to recognize the role cues have in helping students express themselves online because if they are not acknowledged then the full potential of online course communities will not be realized.

**2.7.4.2 Limits of Interface Features**

With regards to the second limitation, online course communities such as Moodle and Blackboard use “threading” to impose structure on electronic discourse. A thread is defined as “a hierarchically organized collection of notes in which all notes but one (the note that started the thread) are written as ‘replies’ to earlier notes” (Hewitt, 2005, p. 568). Although threaded discourse is generally viewed as a valuable tool for distance learners, researchers have identified a number of problems with the medium. Perhaps the most serious of these is the phenomenon of “divergence.”

Online discussions tend to branch out over time and become more fragmented, making it difficult for a community to consolidate its ideas (Dringus & Ellis, 2005; Hewitt, 2001; Scardamalia & Bereiter, 2006; Thomas, 2002). Many researchers have attributed this problem to the fact that students post their ideas without reviewing or responding to others (Hara, Bonk & Angeli, 2000; Larson & Keiper, 2002; Suthers, Vatrapu, Medina, Joseph, & Dwyer, 2008). In addition, some researchers noticed that there was a lack of convergence because students focused more on targeting a particular note (i.e. a single note focus) rather than summarizing and synthesizing (i.e. a multiple note focus) (Hewitt, 2001), and the preference for focusing on notes that had not yet been read and were recently posted over revisiting older notes (Hewitt, 2001). This focus prevents students from having more meaningful and extended discussions, which would include negotiating ideas, sharing information, and synthesizing knowledge. Although,
extended educational online discussions would be ideal, researchers have emphasized the
difficulty in sustaining these types of discussions (Gao, Zhang, & Franklin, 2013; Hewitt, 2005).

Keeping this divergence problem in mind, many researchers argue that threaded
discussions may not be the best format to foster interactive and collaborative learning (Thomas,
2002), which is essential for building an online course community. If online learners cannot
consolidate ideas, then a community cannot be strengthened. Furthermore, the divergence of
ideas will make it more difficult for students to have a meaningful understanding and discussion
about their ideas and the content.

To foster convergence, rather than divergence, online course communities interfaces must
be designed to support multiple links to earlier work so that students can engage with ideas and
build a community using interface elements within a threaded forum or separate from a threaded
forum. As a possible solution to this phenomenon of divergence, some researchers have used
graphical representations, also referred to as visualized discussion environments, to capture the
different viewpoints and the relationships between them by using shapes, links, maps, and tables
(Ertl, Kopp, & Mandl, 2008; Suthers et al., 2008). In doing so, learners can easily follow the
progress of a discussion and view more than one note at a time. This format provides more
context to online discussions by helping learners see information that may be hidden in a textual
representation. Researchers, however, also expressed concern that when discussions are longer
and more complicated these environments may be unable to clearly capture the discussion due to
limited visual features. Other researchers suggested using anchored discussion environments to
support sustained on-topic discussions (Gao et al., 2013). In this environment, learners can add
annotations to portions of text as they read a document online (Gao et al., 2013). The annotation
is shown at the side of the document with a visual indication of the text with which it is
associated. In addition, other learners can read and respond to these annotations, thus discussions are anchored to specific text. Furthermore, some anchored discussion environments also included a threaded discussion component, which gave students the opportunity to choose the environment in which they want to study (Gao et al., 2013). For instance, students could use the anchored environments to share and comment on annotations or use the threaded discussion forum to have more in-depth conversations. Although anchored discussion environments have made it easy to have in-depth and focused discussions on specific sections of a document, it is difficult to connect ideas and discussions across readings in this environment because of its focus on a specific part of the text (Gao et al., 2013). Researchers have been dabbling with various online course community designs to find a potential solution to the divergence problem, but they have only had mixed success. To make progress with this problem, researchers make the suggestion to “enhance the design of threaded forums or to design new discussion environments that encourage particular learning processes” because limited progress has been made on designing alternative online course communities (Gao et al., 2013).

The online course community interface is important in helping both online instructors and students to establish a community. The literature emphasizes that students need to invest time in understanding the online platform (Conrad, 2005; West, 2010) and in knowing and mastering which features they can use to participate in the community and support their learning (Dirkx & Smith, 2004). Not doing so could exclude members from the community-gathering place, which could hinder the development of the community (Liu et al, 2007). An understanding of which interface features can create a rich and interconnected community is limited in the literature and needs further research.

Taken together, these challenges pose another critical question: How are online
instructors supposed to foster community in an online course community when there are no clear guidelines to indicate which types of interactions, interface features, and pedagogical frameworks can help to do so? Some scholars (Luppicini, 2007) see communities as a solution to many challenges in distance education and a valuable add-on to online teaching. Others question whether or not a community can be formed online (Shapiro & Hughes, 2002), and then there are those who think creating a community online is too time consuming (Liu et al., 2007). Not having a strong community within an online course community, however, can produce negative consequences. Research suggests that a “lack of community, in the online course community, can result in student isolation, frustration, boredom, overload, and low course completion rates” (Young & Bruce, 2011, p. 220). Therefore, through my research I hope to address these challenges by presenting a possible role for community in online learning as well as presenting possible strategies and interactions that could foster a community online.
3 Chapter 3

3.1 Methodology and Procedure

This section describes the data collection and analysis procedures that were used for the two phases of this research study. Specifically, it will focus on a detailed description of the procedures including: a general research approach, participant selection, and data analysis and data collection techniques for the quantitative and qualitative phases.

3.2 Research Design

Some scholars (Gunawardena, Lowe, & Anderson, 1997; Hiltz & Arbaugh, 2003) have argued for the importance of using mixed research methods when studying online learning. One of the reasons why mixed methods research has gained traction and become more popular in recent years is that the quantitative data provides a general picture of the research problem, while the qualitative data helps to explain those statistical results by exploring participants’ in-depth and personal insights (Creswell & Clark, 2011). A mixed methods approach focuses on collecting, analyzing, and combining both quantitative and qualitative data in a study. As highlighted in my literature review, there is no consensus on the definition of community, on how to measure it, or, most importantly, its role in online learning. A mixed methods approach, and its two-phase structure, will allow me to analyze certain larger-scale trends related to online course communities (Creswell & Clark, 2011). It is important to remember that the fundamental principle behind mixed methods research is that we can learn more about research questions by combining the benefits of quantitative and qualitative approaches while also compensating for the weaknesses in each (Punch, 2009). Together, the quantitative and qualitative data sets allow the researcher to have a better understanding of the topic on a macro and micro level.
I adopted a mixed methods explanatory sequential design for this research (Figure 4). This design allowed me to conduct a comparative analysis, a popular technique of comparing and contrasting two or more ideas, of weak and strong online course communities and the facilitation method associated with them. A mixed method approach is popular because it allows the researcher to utilize the strengths of quantitative and qualitative research (Creswell, 2014). In the explanatory sequential design, quantitative data is collected and analyzed in the first phase and qualitative data is collected and analyzed in the second phase (Creswell & Clark, 2011). The quantitative and qualitative results inform each other, producing a richer understanding of the phenomenon (Creswell & Clark, 2011). Community is a complex phenomenon, but an explanatory sequential design offers the opportunity to develop a statistical and conceptual understanding of community and its role in online learning. The two sets of data in an explanatory sequential design allows the researcher to enrich their research.

Figure 4. Explanatory Sequential Design collection and analysis process
3.2.1 Selection of Tools.

For this study, data was collected from instructors and graduate students in the field of education who have taken online course communities through the online platform, Pepper. It was within the Pepper platform that I gathered my data and recruited my participants. Pepper is a web-based collaborative workspace used by approximately 2,000 graduate education students every academic year. Unlike Moodle and Blackboard, Pepper offers a variety of specialized knowledge building features and social networking tools. These tools aim to support learners in sharing information to further develop ideas, which is why I chose Pepper for my research.

According to Kelley, Clark, Brown, and Sitzia (2003),

A research tool should be tested on a pilot sample of members of the target population. This process will allow the researcher to identify whether respondents understand the questions and instructions, and whether the meaning of questions is the same for all respondents (p. 263).

Taking this into consideration, I piloted Rovai’s (2002c) community scale in another study with an online graduate course. Doing so allowed me to assess if the scale measured what it claimed to (i.e. construct validity) and if students understood the questions, which was explored in interviews for this other study. Piloting the survey was very helpful because it allowed me to measure which questions were most pertinent to my current research study, as including them only made the survey longer for respondents. As a result, only the original scale items from Rovai (2002c) were used. It is also important to emphasize that this particular instrument was chosen because of its consistent use within the literature. Although, some scholars (Barnard-Brak and Shiu, 2010) criticized Rovai’s (2002c) instrument for shortcomings, many other scholars vouched for its validity, which is referred to as content validity.
3.2.2 Participant selection.

A mixed methods explanatory sequential design emphasizes that the researcher should consider specific data collection options, such as what sample sizes to use for each phase, what data to collect in each phase, and from whom the data should be collected (Creswell & Clark, 2011). The quantitative phase includes a community scale which is distributed to all students in participating online course communities and the observation of participant activities. This observation is achieved through the automated collection of logs that detail participants’ activities within Pepper. The logs store time-stamped records of online events such as when a note was created, when the ‘Like’ button was pressed, and when somebody replied to a message. During the quantitative phase, statistics were extracted from the Pepper logs which documented students’ online behaviours and activity patterns. The qualitative phase included semi-structured interviews with students and instructors from the participating online course communities. It is also important to highlight that all 6 online course communities had different instructors. Data in the qualitative phase focused on instructors’ and students’ perspectives in order to deepen my understanding of such behaviours and other online experiences.

3.3 Phase I: Quantitative Data

3.3.1 Data collection

For phase one of this study, quantitative data was collected from Rovai’s (2002c) Classroom Community Scale (CCS) and the Pepper logs of each class. First, I distributed the CCS, through email using Survey Wizard, to students in 8 online course communities. As a result of stratification, 2 online course communities were cut for not meeting the criteria, leaving the study with 5 winter session online course communities and 1 summer session online course community. Stratification ensured that similar style courses were compared. This included
choosing online course communities conformed to the following criteria: each course had a
different instructor, was at the graduate level, and used a seminar style format. To add, these
online course communities each had less than 25 students with instructors of different experience
levels teaching online (Table 2). This allowed the data for the CCS and Pepper logs to be
collected from 6 instructors and 104 students, making a total of 110 participants.

The CCS aimed to measure a sense of community (SoC) in an online graduate course.
The scale explores two factors, connectedness and learning, and it is based on a five-point Likert
scale with the following potential responses: strongly agree, agree, neutral, disagree, and strongly
disagree. Participants check the place on the scale that best reflects their feelings about the items.
There are 20 items in total. Ten items are related to feelings of connectedness and the other 10
items are related to feelings regarding the use of interaction within the community to construct
understanding and whether learning goals are being met in the online course community. This
instrument generates an overall classroom community score as well as two subscale scores:
connectedness and learning. The connectedness subscale represents the feelings of the
community of students regarding their cohesion, spirit, trust, and interdependence as a group.
The learning subscale represents the feelings of community members regarding their interactions
with one another as they attempt to understand the material and the degree to which members
share an understanding of the extent to which their educational goals and expectations are being satisfied.

To calculate the connectedness subscale score, all uneven scale items were added
together. To calculate the learning subscale score, all even scale items were added together. Both
the connectedness and learning scale scores range from a minimum of 0 to a maximum of 40. To
determine the overall SoC score both subscale scores were added. The scale score for overall
SoC ranged from a minimum of 0 to a maximum of 80, which helped to identify the strongest (i.e. the highest score) and weakest (i.e. lowest score) online course communities.

Once the courses were categorized as either strong or weak online course communities, quantitative data was obtained from the Pepper logs from each class to compare students’ activity patterns in these two types of courses. Descriptive statistics were calculated and statistical models were built using data from the Pepper logs. These statistics allowed me to describe and understand students’ online activity. In addition to tracking how long each student stayed online, some of the logged activities included: writing notes, revising notes, replying to notes, messaging the instructor, and rereading notes. Inferential statistics were used to determine if there were any differences in Pepper usage between communities. This analysis allowed me to see if students were more engaged, with higher activity patterns, in an online course community with a strong community, or if they were less engaged, with lower activity patterns, in an online course community with a weak community.

Table 2

Course Details

<table>
<thead>
<tr>
<th>Courses</th>
<th>Enrollment</th>
<th>Instructors’ Experience Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>16</td>
<td>Experienced</td>
</tr>
<tr>
<td>B</td>
<td>20</td>
<td>Highly experienced</td>
</tr>
<tr>
<td>C</td>
<td>19</td>
<td>Experienced</td>
</tr>
<tr>
<td>D</td>
<td>17</td>
<td>Experienced</td>
</tr>
<tr>
<td>E</td>
<td>23</td>
<td>Experienced</td>
</tr>
<tr>
<td>F</td>
<td>17</td>
<td>Highly experienced</td>
</tr>
</tbody>
</table>
### 3.3.1.1 Screening and data cleaning

The quality of data affects its usability as well as the credibility of the analysis of the data. To ensure that the quantitative data for this research study was usable and credible, data cleaning was performed throughout the collection stage. This process was also necessary to ensure that IBM’s program, Statistical Package for the Social Sciences (SPSS) version 23, operated on clean and correct data. For instance, student responses from the community scale were checked to ensure there were no duplicate responses from the same student. In this case, only the first responses were kept and the second responses excluded. The decision to keep students’ first responses was made without consulting their scale scores. It was assumed that students were submitting second responses to increase their chances of winning a gift card from the draw associated with the survey. To further clarify, this draw was used to express my appreciation for students’ participation in the survey and would provide students a chance to win one out of three gift cards from Tim Hortons or Chapters. Furthermore, categorical variables associated with the scale were checked for any errors. To help identify these errors, a frequency analysis was conducted on the scale data (Landau & Everitt, 2004). This particular test allowed us to see if the minimum and maximum values made sense and if they were in the range (0-80) recommended by Rovai. The cases (i.e. student responses) were checked to ensure all were valid and that none were missing. Interestingly, at this point my peer de-briefer and I noticed that some data were missing. This was a result of the original Survey Wizard data extraction. A quick recheck allowed us to find and enter the missing data.

Furthermore, student responses were not automatically used. The scale responses for each class were exported from Survey Wizard into Excel and scored according to Rovai’s (2002c) instrument guidelines for measuring a classroom community. After coding was complete, the
survey information for each course was combined into one excel document and to differentiate the courses they were each labeled with letters of the alphabet (i.e., A, B, C, D, E, and F). Combining the scored scale responses for each online course community provided enough data to run statistical tests, while the uncombined data would have only allowed for calculating scores. I used IBM SPSS Statistics program to perform all inferential statistics tests.

With regards to the data from the Pepper logs, student enrollment was checked to ensure that data was not being collected on students who dropped the course. This task required comparing the summary information from each course’s Pepper site to the log data pulled from the extraction tool. Conducting this check on student enrollment was helpful because there was a mismatch between the number of students in the course and those found within the log data. This task was important as it allowed me to sort out the actual number of students who fully participated in each course and also provided an accurate response rate for the scale. Lastly, certain measures (i.e., percentages and different ratios) were normalized in the Pepper log data. To clarify, normalization refers to reducing measures to the same scale, such as a neutral or standard scale, to make variables comparable to each other. Normalization was only performed when data was used for statistical modeling purposes. It was not necessary for performing inferential statistics because these analyses compared data from the same measure, which ensures that they had a similar scale.

3.3.2 Data analysis

3.3.2.1 Rovai’s classroom community scale

Even though Rovai’s (2002c) Community Scale has been widely used in various research studies, it was still important to test the reliability of the scale. This was done by assessing internal consistency, which, according to Pallant (2005), “is the degree to which the items that
make up the scale are all measuring the same underlying attribute (i.e. the extent to which the items ‘hang together’)” (p. 6). Cronbach’s coefficient alpha was used since it is most commonly used throughout the literature and is expected when reporting scale data. This test provides an average correlation among all of the scale items. As a result, its values range from 0 to 1 with higher values indicating greater reliability (Pallant, 2005). Although different levels of reliability might be required depending on the scale and its purpose, a minimum level of .70 is generally recommended (Pallant, 2005; Spector, 1992). Doing this test allowed the researcher(s) to determine if there was internal consistency between student responses, which was necessary for determining whether the respondents were honest in their responses rather than randomly answering the questions.

The Pearson's r correlation for CCS, learning, and connectedness was calculated to help determine the relationship between the scale and its subscales. The results range from -1 to 1. The closer the value r is to 0, the weaker the correlation between the two items being measured. Negative numbers represent a negative relationship, meaning that as one item increases, the other decreases. Positive numbers represent a positive relationship where both items increase in value together. Conducting this analysis allowed me to confirm the relationship between the scale and its subscales based on our population. For instance, the results were expected to show a strong correlation between the scale and each of its subscales; ideally the subscales would be strongly positively correlated as well but it would be possible for them to be negatively correlated.

Other statistical tests were conducted on the scale data to highlight general characteristics about the courses, to better understand the relationships between CCS, learning, and connectedness, and to confirm community level. For example, descriptive statistics illustrated the central tendency (e.g. mean or median) and variation (e.g. standard deviation or range), among
many other general characteristics, for each course based on community level and course type. Many statistical tests rely on the data being normally distributed. Normal or Gaussian distributions are reflected with a bell shaped curve in which the majority of the responses lie around the centre of the distribution. Tests of normality were conducted to determine which courses produced data that were not normally distributed and to determine whether student responses were normally distributed so that the appropriate statistical tests could be selected. To better understand which courses are different from each other and in what areas (i.e. CCS, learning and connectedness), comparative or inferential statistical tests were conducted on the scale data. For instance, to identify high and low levels of communities in courses with normally distributed scales, a one-way ANOVA with Tukey HSD was used to compare pairs of courses. The Kruskal-Wallis test was used for non-normally distributed data because it is the equivalent test for data that does not fit the bell curve. Likewise, comparisons between pairs of courses with non-normally distributed scale data were performed using Mann-Whitney test because it is similar to a t-test but does not require that the data be normally distributed. The above tests determined which courses had high and low senses of community and the individual comparison of those communities that were not normally distributed revealed which communities differed from one another.

Interviews with students and instructors revealed the type of facilitation method used in each online course community. More specifically, students and instructors descriptions of the facilitation method adopted in their online course communities was then used to label courses as either instructor or peer facilitated based on Hew’s (2015) definitions. To analyze the impact of facilitation method, additional statistical tests were conducted with community level (i.e. high and low communities) and course type (i.e. facilitation method). First, descriptive statistics were
calculated for the scales by community level and type with tests of normality to illustrate general characteristics of the scale findings by community level and type. Second, conducting Spearman correlations for the scales and community levels helped to describe the relationship between them. Lastly, comparative tests were conducted to show the differences between learning, connectedness, and CCS by course type and community level. These measures and tests allowed me to examine the relationships between learning, connectedness, and CCS based on community level (i.e. high and low community score) and course type (i.e. facilitation method). Because these tests revealed a relationship between course type and community level, further tests were conducted focusing on facilitation method. More specifically, comparative tests were conducted based on the normality tests for the scales when they were factored by facilitation method. These comparative tests included independent t-tests for normally distributed scales and Mann-Whitney tests for the scales that were not normally distributed. Overall, these tests allowed further examination of the relationships between instructor-facilitated and peer-facilitated course communities and learning, connectedness, and CCS.

3.3.2.2 Pepper logs

Analyzing the Pepper logs scale data provided insights into which courses had high and low community scores, how students perceived learning and connectedness within these communities, and the relationship between high and low levels of community with specific facilitation methods. To better understand students’ online behaviour within courses with high and low levels of community, analyses were also performed on the log data that was collected through the Pepper platform. This involved gathering information on students’ usage levels in courses with high and low levels of community, including the number of sessions for which each student logged in, the amount of time each student spent online, and each student’s activity
patterns. Data collected on these activities included: notes written, revisions made, words per note, words used from the academic word list, ‘Likes’ received, ‘Likes’ given, informal words used in a note, reading ease, grade level, the sentiments expressed within notes, links created, other notes linked to, how often teacher notes were reread, how often student notes were reread, whether notes were written publically or privately, the use of private shared notes, private notes that were not shared, messages created, messages created to students, messages created to instructors, replies, replies to instructors, replies to students, replies received, and notes read. Descriptive statistics and tests of normality were conducted on the usage and term aggregate activity for each course to identify general characteristics. Student activity levels were then compared to see if there were any differences in community level and course type for each course. I only report on the system activities where differences were observed. These activities are defined below:

- **Editing**: this is the number of revisions made to notes by that note’s creator. Changes could be as simple as correcting the conjugation of a verb or could include substantive changes to the content or subject of the post.
- **Liking**: the number of likes that a note has received. Likes indicate an acknowledgement that is similar to the Like feature on Facebook.
- **Links created by note**: the number of links to other notes compared to the number of notes created. Linking within Pepper is similar to tagging in social media.
- **Messages to instructors**: these are private Pepper messages that are similar to e-mail.
- **Notes**: this refers to a single post within the discussion forum.
- **Note rereading**: the number of times a note is viewed following the reader’s first reading of that note.
• **Private shared notes**: a post that is only shared with a specific peer or peers selected by the creator of the note. The peer or peers who receive the note also have the ability to edit the note.

• **Replies**: responses to other notes. In Pepper, replies are indented in a similar manner to those in a threaded discussion forum.

• **Sentiment**: this is a measure of the amount of emotion that is present in the note.

Since student activities were not normally distributed, the non-parametric version of a t-test, the Mann-Whitney test, was used. This comparison was needed to highlight any differences in student activity based on the type of community they were in, as well as the relationship between facilitation method and community.

To further understand students’ online behaviours and identify usage patterns a statistical modelling technique called clustering was applied to the weekly Pepper activities of students and instructors from each course. All activities were aggregated by the week in the term in which the activity was logged (i.e. W1, W2, …, W13). Exam period activities (E) were aggregated as were any activities that took place after the exam period had ended (A). Similarly, activities that took place in the week immediately prior to when the term started (P1) were aggregated and any activities leading up to that week (P+) were aggregated as one unit of analysis or feature. The K-means clustering algorithm was then used to group people into similar clusters based on the event counts for each of these time periods. According to Thomas (2013), the process of clustering involves organizing a collection of unlabeled data into groups such that objects in one group will be similar to one another and dissimilar to objects in other groups. There are numerous ways for researchers to sort data into groups and the choice of a method is usually determined by the data’s size and structure. I used the Rapid Miner program because it offers
various procedures for clustering data, such as hierarchical cluster analysis, k-means clustering, and two-step clustering. For this study, k-means clustering was used mainly because it was the best fit for my data size. Hierarchical clustering was not appropriate for my data size per class. Additionally, k-means is commonly used in the learning analytics literature (Romero & Ventura, 2007). It is flexible and allows the researcher to use theoretical considerations when selecting the number of clusters. Interestingly, because the amount of data I had was relatively small it was easier to rerun the analysis for different cluster numbers, which is one of the advantages of k-means when doing exploratory work. The Davies-Bouldin Index (DBI) was calculated and the elbow method was used to determine the optimal and appropriate number of clusters. To clarify, DBI is a measure used to identify the similarity of clusters so that the data can be compared and divided appropriately. In other words, DBI helps to evaluate cluster algorithms (Davies & Bouldin, 1979). According to Thomas (2013), “[t]he Davies-Bouldin index is based on the approximate estimation of the distances between clusters and their dispersions to obtain a final value that represents the quality of the partition” (p. 1). In other words, DBI shows the cohesiveness (tightness) of clusters and the distance between them (see Figures 5, 6, & 7).
Figure 5. An example of clustering illustrating the tightness of clusters and distance between them. Reprinted from Cluster Analysis: see it 1st, by A. Pandre, 2011, Retrieved from https://apandre.wordpress.com/visible-data/cluster-analysis/

Figure 6. An example of k-means clustering showing obvious clusters. Reprinted from Chapter 7: Structure Discovery, Video 1: Clustering, by R. Baker, 2013, Retrieved from http://www.columbia.edu/~rsb2162/bigdataeducation.html
Figure 7. An example of k-means clustering showing weak clusters. Reprinted from Chapter 7: Structure Discovery, Video 1: Clustering, by R. Baker, 2013, Retrieved from http://www.columbia.edu/~rsb2162/bigdataeducation.html

The elbow method helps to determine the true number of clusters. According to Kodinariya and Makwana (2013),

The oldest method for determining the true number of clusters in a data set is inelegantly called the elbow method [2]. It is a visual method. The idea is that Start with K=2, and keep increasing it in each step by 1, calculating your clusters... At some value for K...[it] drops dramatically, and after that it reaches a plateau when you increase it further. This is the K value you want. (p. 92)

The rationale is that the number of elbows on the graph indicates the number of data clusters, hence the use of this method to accurately choose a specific number of clusters. The elbow method was applied to the DBI for each value of K. The number of items, in this case students and instructors, within the clusters were also considered when choosing the final value for K (the number of clusters). For instance, a K value that had multiple clusters with two students was less
likely to be chosen than one that resulted in larger clusters unless the existence of those smaller clusters was explained by theory or by the qualitative data that was obtained through the interviews. Overall, the elbow method, DBI, and checking the number of items within a cluster provided the information necessary to choose an optimal number of clusters without over-fitting the model. Over-fitting is when the model becomes so specific to the data that was used to create it that the model can no longer be generalized and applied to new data. Lastly, the cluster findings were examined through an analysis of inferential statistics, which was conducted by community and then by facilitation method. Doing so helped explain the results of the clustering in more detail.

The variables or student activities for which we identified patterns using clustering were chosen based on the results of the previously conducted inferential statistics, which had used the term aggregate data from the Pepper logs for each online course community (i.e. student activity by course). More specifically, the nonparametric Spearman Correlation Coefficient ($r_s$) was used to measure the strength of the correlation between two variables and to reduce the number of student activities that were modelled by choosing one item when two items were highly correlated. For example, if the aggregate data showed that the data from one type of activity performed by different types of users, such as rereads by teachers, rereads by students, and overall rereads, all of which refer to the number of times that a user has reread a note, was highly correlated, then only one of these measures was chosen. Doing so made data representation less complicated by reducing its dimensionality. In addition, if there was not enough data for a specific variable it was excluded for failing to meet the minimum threshold for data when performing clustering procedures. For example, linking, which refers to linking to other users’ notes within the platform, did not produce enough data in any of the online course communities,
so it was excluded from our analyses. Variables were selected if there were statistically significant differences in the variable between courses or if their inclusion had previous scholarly support. Such correlations reduced the number of variables that were analyzed, which allowed me to accurately represent which online activities were impactful in weak and strong online course communities.

3.4 Phase II: Qualitative Data

3.4.1 Data collection

According to Creswell (2014), “the key idea is that the qualitative data collection builds directly on the quantitative results” in the second phase (p. 224). Therefore, qualitative data was collected from 12 semi-structured interviews with 6 instructors and 6 graduate students from the six courses that were quantitatively analyzed in the first phase. It is important to point out that I purposefully chose individuals from the quantitative sample to participate in the qualitative sample. Doing so allowed me to gain more insight into the results from the quantitative data. Creswell (2014) highlights that choosing the sample in phase two can be a challenging task. He states,

Another challenge is whether the qualitative sample should be individuals that are in the initial quantitative sample. The answer to this question should be that they are the same individuals, because the intent of the design is to follow up the quantitative results and explore the results in more depth. The idea of explaining the mechanism—how the variables interact—in more depth through the qualitative follow-up is a key strength of this design. (Creswell, 2014, p. 224)

Therefore, following up with the same sample in the qualitative phase allowed me to further explore and gain a deeper understanding of these findings.
More specifically, interviews with instructors provided an opportunity to understand where they were coming from, as well as their opinions of what worked and did not work with regards to instructional design. Exploring the instructor’s point of view was important in understanding the relationship between instructors and building a community. For instance, Baker (2004) found that instructor immediacy (also referred to as teaching presence) was a more influential factor for affective and cognitive learning than whether students felt close to one another. Therefore, the instructor’s role is important in building community online and it is important to know what is or is not working for instructors when creating an online course community. Furthermore, when discussing teaching presence within the CoI framework, Garrison (2007) emphasize the importance of the instructor, they state:

Participants need to be aware of the academic objectives, the phases of inquiry, and the level of discourse. These educational challenges raise the importance and role of teaching presence. The distinction between facilitation and direction must also be clear from a design perspective. Teaching presence must consider the dual role of both moderating and shaping the direction of the discourse. Both are essential for a successful community of inquiry. (p. 69)

Obtaining the instructors’ perspectives for building a community is essential because it will provide a deeper understanding of how they facilitate, design, and direct within an online course community. In addition, interviews with students provided a deeper understanding of students’ online behaviour, possible explanations for their adoption of specific tactics and interactions with their peers. Interviews with students also provided information about which instructional strategies they preferred and made them feel comfortable enough to engage with the course content and develop camaraderie with their peers. According to Trentin (2000) it is critical to understand students’ online interactions because interactions impact, shape, and influence the
quality of learning. Including students’ perspectives was important for my research because it revealed how students and instructors viewed each other’s online interactions. Furthermore, understanding students’ online behaviour and interactions also provided a deeper understanding of the unique characteristics of the interactions in each community, which can be helpful in facilitating students’ online interaction for effective learning (Song & McNary, 2011).

### 3.4.2 Data Analysis

Semi-structured interviews were transcribed (see, Appendix C) and then thematic analysis was used to analyze each of the interviews. Thematic analysis involves searching the data for patterns and themes to generate research insights about the phenomena (Glesne, 2011). In order to generate these themes and patterns, data must be coded. To do this, I followed Charmaz’s (2014) coding method. According to Charmaz (2014), “[c]oding is the pivotal link between collecting data and developing an emergent theory to explain this data. Through coding, you define what is happening in the data and begin to grapple with what it means” (p. 46). Charmaz (2014) believes there are two phases of coding. In the first phase, “initial coding,” we skim, review, and highlight words, phrases, and lines in hopes of discovering some sort of pattern (Charmaz, 2014, p. 42). The second phase, referred to as “focused coding,” involves selecting the codes that have extensive data support (Charmaz, 2014, p. 43). In the focused coding phrase, data is compared to other data, and then data is compared to codes to ensure the correct code and theme is chosen (Charmaz, 2014). This method was followed when analyzing each interview. The qualitative data is meant to inform the quantitative data. Using the students’ and instructors’ experiences will provide a better understanding of and answer to my overarching research question: What is the role of community in online learning? Both quantitative and qualitative datasets (Figure 4) will allow me to statistically and conceptually understand the role
of community in the online learning process, as well as identify specific strategies and interactions that help build a community of learners in an online course community.

### 3.4.3 Data Validation

To ensure that the quantitative research data is correctly collected, analyzed, and presented, Creswell’s (2014) peer debriefing validation strategy was adopted. This strategy involves working with a peer who can keep the researcher honest, have an external outlook on the research process, and ask difficult questions about the interpretations and meanings. For this study, a peer who is a recent graduate from the doctoral program in the Faculty of Computer Science at the University of Toronto so kindly took on the role as a peer debriefer. This strategy further validated the quantitative research process and ensured its accuracy and appropriateness.

To ensure interviews were conducted in the same manner for each participant, interview protocols (see Appendix A & B) were followed. This protocol ensured participants were made aware of their rights, promised confidentiality, and lastly understood the research focus, questions, and length of the interview. Furthermore, my role in the interviews was researcher as learner. According to Glesne (2011),

> The learner’s perspective will lead you to reflect on all aspects of research procedures and findings. It also will set you up for particular kinds of interactions. As a researcher, you are a curious student who comes to learn from and with research participants. You do not come as an expert or authority. If you are so perceived, then your respondents will not feel encouraged to be as forthcoming as they can be. As a learner, you are expected to listen; as an expert or authority, you are expected to talk. (p. 60)

As the researcher, understanding the role of community in online learning meant listening and learning from participants’ experiences in weak and strong online course communities. Such an
approach gave students and instructors the impression that I valued their views and experiences, which seemed to motivate participants to share more. When participants were more forthcoming it gave me more meaningful insights into their experiences which helped me address my research questions.

To confirm that participants’ views were accurately interpreted in the interviews, they were given a brief summary after each question. Doing so, allowed them to confirm my interpretation or clarify any misinterpretations. This specific strategy was adopted because it gives participants an opportunity to further share, expand, or clarify their views throughout the interview. Lastly, Creswell’s (2014) external auditor validation strategy was used to review the entire dissertation. Unlike the peer debriefer, the auditor is not familiar with the thesis topic and can provide an objective assessment. For Creswell (2014), having an “independent investigator” enhances the overall validity of a study. Therefore, a doctoral candidate from the Language and Literacies Education Program at the Ontario Institute for Studies in Education, University of Toronto was my external auditor who assessed my dissertation at the conclusion of my study.
4 Chapter 4

4.1 Results

Portions of this chapter have been published in the Online Learning Journal (Special Issue on Learning Analytics):

The results of the quantitative and qualitative analyses will be presented here, using the research questions to guide the presentation of the results. The chapter will then conclude with a summary of the results from both datasets. As previously mentioned, the scale was distributed to 8 graduate online course communities, but 2 of these courses were cut due to stratification. Analyses in the quantitative phase consisted of 47 students and 3 instructors in the instructor-facilitated online course communities, which had high community levels (A, B, E), and 57 students and 3 instructors in the peer-facilitated online course communities, which had low community levels (C, D, F), making a total of 110 participants. For this study, the quantitative findings highlight different student behaviours in each course type and community level. In addition, analyses from the qualitative phase consisted of 12 semi-structured interviews consisting of 6 instructors and 6 graduate students. Furthermore, although the majority of the results focus on student activities, teacher activities are also included in the modelling of system activity patterns, which I discuss below. The results of the analyses from my interviews with students and instructors, for whom I used pseudonyms, helped to further explain the quantitative findings using insights from students and instructors.
4.2 Research Question 1: Classroom Community Scale and Facilitation Methods

4.2.1 Quantitative results.

To answer the question “what is the relationship between a sense of community, facilitation methods (peer or instructional), and instructional strategies in an online course community?” I used the classroom community scale (CCS) data, participants’ identification of the facilitation method used in their online course community, and participants’ interviews.

The CCS data was coded following the scale guidelines, and Cronbach’s alpha was calculated to determine the reliability of the scale and its subscales. This statistic revealed highly reliable alpha scores of 0.886 for connectedness, 0.813 for learning, and 0.906 for the CCS as a whole. The average response rate ($M = 53.30\%, SD = 15.60$) was also calculated. Interestingly, the research community has yet to agree upon an adequate response rate. After examining eight studies, Nulty (2008) realized that online surveys received much lower response rates (on average, 33\%) than paper-based surveys (on average, 56\%), revealing a 23\% gap. Similarly, Fowler (2009) found that it is also common to see response rates below 20\% for online surveys. These statistics show that online surveys struggle to achieve response rates close to paper-based surveys. Nulty (2008), however, presents various approaches from other studies that researchers could adopt to help boost response rates for online surveys. To ensure a high response rate for my survey, I adopted some of the approaches Nulty (2008) suggested, including: making it easy for students to access the survey, providing frequent reminders, involving academics such as my supervisor, convincing respondents that their data will be used, providing rewards such as gift cards, assuring anonymity of responses, and extending the duration of the survey’s availability.

These statistics, in addition to the fact that non-response error does not have a strong relationship with survey error (Fowler, 2009), show that the response rate for the CCS was
appropriate. Intriguingly, Table 3 shows the differences in students’ sense of community (SoC) based on the type of facilitation that was used within their online course community. Findings indicate that students felt that they were more connected ($t(53) = 2.92, p < 0.01$), learned more ($U = 146.00, p < 0.001$), and had a better SoC ($t(53) = 3.84, p < 0.01$) in instructor-facilitated online course communities. Table 4 shows the classroom community scores (CCS) for all online course communities. It also shows the course type (instructor- and peer-facilitation methods) and the relationship between course type and the community level (high or low) for each course.

Table 4 shows that students’ SoC is higher ($F_{5,49} = 3.44, p = 0.010$) in instructor-facilitated online course communities ($M = 55.75, SD = 10.60$) than in peer-facilitated online course communities ($M = 45.67, SD = 9.07$). Because grouping the courses based on their CCS scores and the primary facilitation method that students identified being used in their course led to similar results, I performed subsequent analyses based on the course’s facilitation method. This small change in focus allowed me to retain course C data for further analyses using the Pepper logs.

Table 3

*Scale and subscale scores by course type*

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<thead>
<tr>
<th>Facilitator</th>
<th>Connectedness</th>
<th>Learning</th>
<th>CCS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
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<td>28</td>
<td>23.18</td>
<td>6.06</td>
</tr>
<tr>
<td>Peer</td>
<td>29</td>
<td>18.37</td>
<td>6.18</td>
</tr>
</tbody>
</table>
Table 4

*CCS Scores by community level and course type*

<table>
<thead>
<tr>
<th>Course</th>
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<th>CCS</th>
<th>Course Type</th>
<th>Community Level</th>
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</thead>
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<tr>
<td>A</td>
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</tr>
<tr>
<td>B</td>
<td>8</td>
<td>57.38</td>
<td>Instructor</td>
<td>High</td>
</tr>
<tr>
<td>C</td>
<td>7</td>
<td>47.43</td>
<td>Peer</td>
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</tr>
<tr>
<td>D</td>
<td>14</td>
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<td>Low</td>
</tr>
<tr>
<td>E</td>
<td>8</td>
<td>55.63</td>
<td>Instructor</td>
<td>High</td>
</tr>
<tr>
<td>F</td>
<td>6</td>
<td>39.67</td>
<td>Peer</td>
<td>Low</td>
</tr>
</tbody>
</table>

1The CCS score for course C did not differ significantly from any of the other courses.

### 4.2.2 Qualitative results.

The qualitative results revealed that instructional strategies differed according to community level and course type. In the course of the interviews participants discussed the instructor’s role in fostering a SoC in an online course community. More specifically, students reflected on their experiences with their instructors as well as the course format they implemented. Instructors, on the other hand, discussed the facilitation method they adopted and the way they designed their courses. Considering the reflections of the participants, a theme emerged that will be referred to as instructional strategies. This theme is comprised of four specific sub-themes that were found across all interviews. These sub-themes include: (a) online discussions, (b) role of the instructor, (c) private and public feedback, and lastly (d) discussion format.

**Online discussions.**

For this theme, student reflections will be accompanied by a visualization showing the overall connections between peers (blue nodes) and between students and the instructor (red
node), using replies, links, and likes, for a particular online course discussion. More specifically, a line represents two individuals. Tighter connections, usually shaped in a circle with thick lines, most likely indicate stronger discussions, while looser connections, usually arranged in no particular shape with thin lines, most likely indicate weaker discussions. It is important to mention that these visualizations are a rough visual of interactions within each online course community and are included to further contextualize students’ online discussion experiences.

**Student interviews.**

All students in this study acknowledged the importance of online discussions in exposing them to diverse ideas and going beyond the text. This sub-theme explores students’ experiences in online discussions and how it impacted them as learners. For students (Mira, Andy, Allie) in instructor-facilitated online course communities (A, B, E), online discussions were enjoyable because they exposed them to diverse views and gave everyone an opportunity to add their opinion to the discussions. More importantly, for these students the discussion forums allowed them to learn from their peers’ experiences especially when they were going through something similar. For instance, Mira (course A) enjoyed exploring other perspectives and was pleased with the way her instructor encouraged the class to participate, which made everyone willing to share and connect with others. This is also illustrated in Figure 8 with connections being displayed in a tight circular shape. Mira stated,

> I liked the online discussions because of the way they were worded and promoted by the professor. So, I think there was a lot of connecting back to the text but there was a lot of what do you have to say about this, would you look at this for me, so basically everyone was approachable and everyone could make a contribution, could start a conversation and had a chance to answer and reply to get their views in… I found myself learning and being aware of different perspectives on the content that I would not
have seen before and how other people were learning and what they wanted to share.

Figure 8. A visualization displaying students’ connections in Mira’s course (course A).

For Andy (course B), encountering students with different views allowed him to address his own biases and interacting with those with similar views gave him access to solutions he could use to address current issues he faced. In addition, Andy emphasized that he formed a bond with some of his peers and that he looked forward to what they had to say as well as the experiences and resources they shared during those conversations. This bond is also illustrated in Figure 9, which displays tight connections among students. Consider Andy’s comment,

Some of my peers were also language teachers in that sense we had the same issues of teaching a language so we were able to share really good material, we were able to share experiences, so sometimes when we had a certain topic I expected or I had high expectations for those language teachers to see what they would
write about it… the background and the interest of people allows you to learn more from them even if you aren’t familiar with the actual topic, you’ll learn from them because they force you to face your own biases and preferences and who you are.

Figure 9. A visualization displaying students’ connections in Andy’s course (course B).

Allie (course E) described similar benefits from the discussions as those highlighted by Mira and Andy. For her, the online discussions provided an avenue to interact and dabble with other perspectives and situations. She truly appreciated this because it allowed her to reshape her own understandings. For her the online discussions were memorable simply because people shared experiences which others could relate to or support. These memorable discussions are displayed in Figure 10. This figure displays dots arranged in a tight circle with thick lines showing the strong connections between Allie and her peers. She stated,
I think it just opens your mind to other people’s situations and as teachers we tend to get focused on our own s**t and what we’re doing, or what we want to express, or get from the course that we forget ‘wow other people have more challenging situations than I do,’ like a crazy classroom environment or other people are going through the exact same thing in another province, so it’s great to have that community and connect with other people, and learning from them, and borrow strategies.

Figure 10. A visualization displaying students’ connections in Allie’s course (course E).

Overall, students from instructor-facilitated online course communities truly appreciated the online discussions citing that having access to different perspectives reshaped their own views and understanding. Furthermore, these perspectives allowed students to discover similar problems others endured and to use their solutions and seek their support.

Although students (Maggie, Jayla, Vera) in peer-facilitated online course communities (C, D, F) acknowledged the value of online discussions because they kept them focused on the topics, many expressed that they were motivated by meeting the course requirements which
frustrated them at times. Maggie (course C) recognized the value in her peers’ views, but
admitted to participating in discussions simply to meet the requirements due to time constraints
but also because of her discomfort communicating as an ESL student. For Maggie, there was no
need to read everything when the requirements could be met without doing so, a view that Figure
11 shows other students also held. This visualization is loose and does not have any specific
shape, which shows the weak connections among students in this course. Maggie stated,

I just read and responded to meet the requirements. I didn’t need to
read everything, why should I? Why waste that time plus I didn’t
have the time? I’m sure if I had the time why not, just to see who
said what because I’m sure somebody said something interesting
but I didn’t have time so I didn’t bother. So, what I’m trying to say
is that sure I probably missed something in the discussions
especially since I just read and replied to meet the requirements but
I didn’t need to go deeper to get my grade….It’s not pleasant for
me because I’m an ESL student.

Figure 11. A visualization displaying students’ connections in Maggie’s course (course C).

Although the online discussions helped with Jayla’s (course D) understanding, meeting the
requirements motivated her participation. She found this frustrating at times due to some of her peers lackadaisical posting habits. Figure 12 shows a tight circle which is a bit deceiving because as Jayla shared in her comment below it was mandatory to reply to each other. Therefore these are not natural connections. Jayla stated,

I feel that the diversity in the course helped me understand the material but I hate to always come back to marks but that again motivates you to participate… I’ll give you an example, for my course it was mandatory to respond to everyone who replied to your post and then you get someone in the last week of class responding to your post from assignment one and it's like now I have to respond to you, you didn't respond to anyone when that was due but now I've got to go back through my notes and respond, so it's like what are you doing and it becomes frustrating. It's interesting you can tell who participates regularly in the community because people will respond to the regulars but the ones who are playing catch-up or do it out of habit nobody in the community will respond because it becomes frustrating, and it's a little bit disrespectful to everyone.

![Figure 12. A visualization displaying students’ connections in Jayla’s course (course D).](image)

Interestingly, Vera (course F) emphasized that she enjoyed participating in the discussions but
only because her instructor divided students into smaller subgroups, which made it less overwhelming to participate. Furthermore, similarly to Maggie and Jayla, Vera expressed a bit of annoyance towards her peers. Perhaps being in smaller groups created close-knit relationships among students in that group, but weaker connections in the larger class. This is reflected in Figure 13, which shows loose connections with no identifiable shape, highlighting the weak bonds between students in the class. Vera stated,

Being in smaller groups helped. Like I said that made it much easier to add my posts because those take time, right. She had guidelines, like a rubric to follow and I mean to be honest, I don’t want it to be about marks but I wanted full marks [laughs]. But also for me I tried to share my culture of being Aboriginal because I wanted my peers to learn from it and to be aware of that type of perspective because they weren’t… I just tried to tie that in and make other students think along those lines because a lot of the time they did not, or they didn't know, or they wouldn't think in that way because they just didn’t want to, or didn't have any Aboriginal background or anything so that's what I tried to do.

Figure 13. A visualization displaying students’ connections in Vera’s course (course F).

Students from peer-facilitated online course communities found online discussions to be helpful,
but admitted to getting frustrated with their peers’ posting habits as well as feeling somewhat overwhelmed with meeting the note requirements set by their instructors. Students from instructor-facilitated online course communities, however, found online discussions to be enjoyable and necessary to deepen and reshape their understanding. These feelings are clearly reflected in the visualizations for each online course community in which students from instructor-facilitated online course communities interacted more with their peers compared to students from peer-facilitated online course communities, as illustrated in Figure 14. To gain a better understanding of why there was such a large disparity between students’ discussion experiences I explored the reflections from instructors.

**Instructor-Facilitated Online Course Communities**

![Visualizations for Instructor-Facilitated Online Course Communities](image)

**Peer-Facilitated Online Course Communities**

![Visualizations for Peer-Facilitated Online Course Communities](image)

*Figure 14. Visualizations for all six online course communities.*

*Instructor interviews.*

For instructors (Professors Thomas, Olivia, Mellie) in instructor-facilitated online course communities (A, B, E) no specific participation requirements were given to students. Instructors
from these courses wanted students to feel comfortable in the online discussion and focused on
cultivating that feeling among students. For Professor Thomas (course A), for example,
embracing raw online notes from students is important to show students that their ideas and
thoughts are valued. This professor provides weekly orienting questions and encourages students
to share their personal experiences in their responses, but refrains from giving other
requirements. He stated,

You want them to connect to the content with personal experiences and with each other too because then they'll be motivated in that way about the content and with their peers, you know. And so forcing a community that may or may not work, you need to give them options, you need to let it happen naturally with the opportunities you put. Everything they do here [in the discussion forum] relates to the orienting questions. I pick one or two, then they compose the answers … They browse through and they pick and choose and respond and so that’s how it goes and it’s raw. And some students just keep going with their comments and it’s fine because there is no length requirement for a post and you can see they do so because they’re grappling and are really going at a concept or something and that shows me that they’re trying., it’s for them.

Professor Olivia (course B) emphasizes that she wants students be comfortable when
participating in the online discussions. Therefore, she does not give students a required length or
amount of notes they need to complete each week because she wants these discussions to be
about them and their learning needs. She stated,

Okay, so being comfortable for me seems to have two components: one, or several maybe, there's the technical piece you know people come in with different levels of prior experience so there's that I sometimes end up addressing, and there's the let's make a safe place for our discussion piece … I try to talk to them about what my expectations are about the course and how I understand individual differences and how the progress in the course is really about them so where they start and where they end rather than having a single end point where everybody has to reach. I also don’t put requirements, I don’t have that you have to respond to X
number of notes at a particular time and they have to be at this length. I’m really trying to stop worrying about what I want and start looking at what it is they want to get out of the course.

Similar to Professors Thomas and Olivia, Professor Mellie (course E) has no specific requirements for students about the number or length of notes in the course discussions. She does, however, expect students to participate thoughtfully in the discussions because it makes up a large portion of their grade. Furthermore, Professor Mellie stresses the importance of welcoming all opinions and enjoys when students take charge of the discussion because she wants them to be comfortable. She stated,

Students know 40% of their grade is devoted to their online participation so they know I am watching and listening. I love the online forum because everybody gets a chance to speak and because they have a chance to challenge and to agree with some perspectives that I don’t think are ever allowed to be voiced in the classroom. So, it gives everybody a voice and as a prof I encourage that dialogue because I’m not going to say you need to have this perspective, so it’s more student-centric in that way. I want these discussions to focus on them and their ideas and their concerns… Another thing I love is when I have some strong students in literacy that they're almost like co-teachers I love what they bring to the class so it's like they're mentoring their peers.

In summary, instructors in instructor-facilitated online course communities had minimal note guidelines because they wanted the focus to be on what students wanted out of the course and for students to feel comfortable participating.

However, instructors (Professors Luke, Jacob, Irene) in peer-facilitated online course communities (C, D, F) included requirements for students’ online contributions in hopes of motivating students to go deeper with the content. For example, Professor Luke (course C) revealed that he implemented requirements for online note contributions mainly because he
wanted to keep students on track. He stated, “I make sure they literally contribute X number of words [laughs] because I don’t want them going crazy and I don’t want them goofing off, so I decided to define that.” Likewise, Professor Jacob (course D) understands that a larger class size means more postings but insists that students should read all notes and respond to those who comment on their notes because that is how they will learn and be exposed to different ideas. He stated,

With 15 or 17 students the number of posting they have to read would be less than having 25 or 30 students. It [the number of postings] goes up a lot. I require and tell students they have to read every posting and they must respond to everyone who comments on their posts, of course not all students do [laughs]. I say it a number of times they have to. For me, I think the most important thing is that they learn something and so learning is not always a joyful thing, sometimes it can be painful and so for me the most important thing is that they learn.

Similarly to Professors Luke and Jacob, Professor Irene (course F) included requirements for students to consider and meet when developing their online notes, which is outlined in a rubric. She stated,

The number of posts and frequency isn’t important. I always tell them it’s not about quantity, it’s about quality. I’m actually very explicit about that in a rubric and even sometimes I specify how many words just to avoid the 2000 low quality posts every day. I mean I do give them guidelines in my syllabus showing what participation looks like in this context. It’s not just about saying ‘hello’ and having lots of emoticons because it’s a learning environment. So, they for sure need to be building and they just can’t be saying ‘yay, great job’ or ‘thanks’ or ‘good work’ with an exclamation mark.

While instructors from instructor-facilitated online course communities opted not to have online note requirements because they wanted students to feel comfortable sharing their personal
experiences and to focus on what students wanted out of the course, those from peer-facilitated online course communities seem to favour the idea of having requirements in hopes of keeping students on track and developing more meaningful discussions. Perhaps these mandatory requirements overwhelmed students from peer-facilitated online course communities, causing them to get annoyed and frustrated with their peers.

**Role of the Instructor.**

Student interviews.

Interestingly, participants from both types of courses expressed a preference for instructor facilitation, but for different reasons. Students (Mira, Andy, Allie) in instructor-facilitated online course communities (A, B, E) felt that instructors are needed to keep the discussions on track by providing feedback. Mira (course A) stated,

> I really like what the professor did he was there all the time, he was constantly showing his presence online so I knew that he was there and he would reply to us...He seemed like he was one of us but he chimed in to make some relevant points, and he’s clarifying, and he’s not letting us go on and build on misunderstandings because there are errors, and he didn’t want us to develop a fake understanding of something or a wrong one or any equities to be promoted or others things.

Similarly, Andy (course B) asserted that the “hands-off” professor was not a good approach. He gushed about his professor’s method being the most appropriate because she knew when to get involved and when to step aside. For Andy this method helped to keep discussions focused and meaningful. He stated,

> Definitely, the hands-off professor is not a good one because it strips the human aspect of learning. You expect involvement; you expect him or her to connect with you. Perhaps, not at a personal level but at a deeper academic level by either providing feedback
or commenting … I remember my professor she would comment on every one of us because it was needed but then I remember some of the weeks my classmates they led the discussion to a point to which she was just ‘liking.’

Echoing Mira and Andy’s preference, Allie (course E) shared how much she enjoyed her professor being involved in the online discussions and disliked the hands-off professor. Reflecting on another facilitation method she experienced in a different online course community, Allie stated,

I like the hands-on, the facilitator. I just don’t want the hands-off prof again. I would consider my professor hands-on, like I said she was engaged, she gave really good feedback, she scheduled phone calls with us, which was really nice to give us feedback and talk to us about our final project, so that was nice…so, a prof who uses their experiences to be hands-on and stepping in when they need to guide, share or clarify, so yea being a facilitator when it comes to the discussion.

While students in instructor-facilitated online course communities enjoyed their instructors’ presence and emphasized that there was a need for them to help keep discussions on track by providing feedback, those in peer-facilitated online course communities wanted a stronger presence from their instructors.

Students (Maggie, Jayla, Vera) in peer-facilitated online course communities (C, D, F) admitted that they wanted their instructors to be more involved to validate their ideas. For instance, Maggie (course C) emphasized that when an instructor is more involved, it reinforces the notion that they are interested in students’ ideas and are willing to invest their time to help students develop those ideas. When discussing her instructor Maggie stated,

So, I think my professor was hands-off for the discussions because he believes in student control and learning. He’s there for support but he gives a lot of possibilities to students. It would’ve been nice
for him to chime in sometimes just to hear his thoughts and you know to see if we were right in our thinking. I think what's tough for the online courses is having to write and having everybody else read it.

For Jayla (course D) not having an instructor involved in the online discussions gives the impression that they do not care because they are not contributing. She stated,

So the online courses that I’ve enjoyed are when the instructors will post a summary of the week, an introduction to think about some things, here’s my voice adding to the conversation. In this class, it was interesting because there was a part of me that went back to my first year of undergrad and I thought ‘why aren’t you sharing your knowledge with me’ and it’s like transfer it [laughs]. So, having a completely hands-off instructor it’s like well I could have done this myself. I can do this, I can go online and find a platform that’s free and create this environment and facilitate it in the exact same way so it’s like what are you bringing to the conversation, if you don’t need to be here then why are you here.

Vera (course F) also wanted the instructor to be more involved in the online course community. She said,

I prefer hands-on. I think that allows the instructor to be with me in my learning journey. Also, when they’re hands-on it seems like they’re interested in what the class as a whole is learning and is studying, and I think that also develops the sense of community and deepens it because they are just more interested in what we’re learning.

In summary, all students wanted the instructor to be involved in the online discussions. For students from instructor-facilitated online course communities, instructor involvement kept the discussions focused and students felt that they received enough guidance. More importantly, instructor participation allowed students to feel as though the instructor valued their views and ideas. Students in peer-facilitated online course communities, on the other hand, revealed that their instructors were hands-off but would have preferred a more involved instructor to validate their ideas and thinking. To understand the purpose of these facilitation methods instructors’
views were explored.

*Instructor interviews.*

For instructors (Professors Thomas, Olivia, Mellie) in instructor-facilitated online course communities (A, B, E) it was important to monitor students’ online discussions to keep them on track by providing feedback and support when needed. Not doing so could derail discussions through misunderstandings of a concept or a particular reading. Professor Thomas (course A) revealed that he monitored and got involved in discussions to clarify students’ posts, keep discussions on track, and help students connect ideas. He stated,

> Coaching in the sense that when they [the students] communicate with each other I would summarize some points for them across students, I would ask questions, I would clarify by disagreeing or agreeing but sometimes I wouldn’t tell them why I disagreed or agreed [laughs] because I want others to build on it and so that’s what you call coaching. Also, at the end of the week I do tell them how I feel in a summary. I tell them what I think about the discussion. I try to incorporate their points and expand on it and tell them what it should be. And you know my summary may not be nice [laughs] but they’re learning and they need to have that guidance.

Professor Olivia (course B) believed that being a part of the discussion is necessary because doing so provided students with extra support and guidance when needed. She stated,

> I think facilitating is a reasonable description of what it is that I’m doing online but I also do go in and clearly say, especially if something happens or if a question is asked and I go in and I become an authoritative source or I guide people to other resources for them to get a deeper understanding of something but I will go in and give a definition of something or a history about a concept or what have you. Also there’s videos that I do particularly for the learning course …I wait in the wings and go back in and try to keep the big picture of what’s going on in the course so I’m like the referee in a sense [laughs] if that’s a pedagogical approach but you know in that way. So, I try to keep out of the course but I still watch to see if there are individual kinds of issues that arise or you know little things and then solving problems, if they come up.
Similarly to Professors Thomas and Claudia, Professor Mellie (course E) found it necessary to step in and described herself as a “conveyor of information.” She stated,

I am a conveyor of information. I’ve met some of the people who are writing the articles or I know something else about them, so then I am a conveyor who just steps in and presents the information. I usually give prompts that aren’t questions, they’re giving a lot of background so that’s important to provide the context and the ground work and I think maybe it’s more important in an online course than it is in a face-to-face course because you have to try and anticipate all of the things that your students might need. I’m also responding and providing feedback and that’s the important one.

Although instructors in instructor-facilitated online course communities labeled their roles differently (facilitator, conveyor, and coach) they all emphasized the importance of monitoring, intervening, and contributing to online discussions in hopes of providing better support and guidance to students. Instructors in peer-facilitated online course communities, on the other hand, were minimally involved in students’ online discussions.

Instructors (Professors Luke, Jacob, Irene) from peer-facilitated online course communities (C, D, F) opted to limit their involvement in online discussions because they wanted students to develop their own arguments, claims, and ideas. Professor Luke (course C) revealed that his teaching philosophy influenced his role online. This philosophy involved having some teacher-directed activities (i.e., lecturing by posting summaries of the readings) but then stepping aside for students to take control. He stated,

So, I prepare extensive summaries of the literature so there is a distinct thing on capitalism, or there is a distinct thing on how the nature of science is taught in or could be taught in schools, so I develop summaries… There is a bit of a problem that continuously crops up, the students will often in their writing they will quote me, my lecture notes, not so much the reference or peer-reviewed work which I'm referring to. I don't push to the point to say there's a
marking scheme or having all those components…so I do things that are sort of teacher-directed and closed-ended in the way I lecture but then the interactions I ask of the students err on the side of more student-directed.

Similarly, Professor Jacob (course D) provides questions beforehand, which are optional for students to answer, but decided to stay out of the discussion in hopes that students would develop their own ideas without his influence. He stated,

I don’t want to always dictate the issues that they talk about but I ask them questions about the assignment beforehand and they can respond but they don’t have to. I found out a long ago if I insert myself into a discussion the discussion comes to an end. Students don’t want to challenge or build on the idea. When the instructor gets involved and particularly if there is an opinion students generally don’t want to respond and the discussion falls flat. So, I try as much as possible to stay out of the way. I think the discussion flows more smoothly when I’m not involved in it. It’s more organic.

Lastly, for Professor Irene (course F), some monitoring of the discussions was done to ensure that students stayed constructive and to reinforce her presence. Similarly to Professors Luke and Jacob, however, Professor Irene opted to limit her participation because she wanted students to learn from each other’s views and ideas and did not want to dominate the discussions. She stated,

So, it’s about monitoring the online behaviour a bit just so it stays constructive, social but also on point for learning… And I don’t want to occupy too much space or be dominant but it’s the same thing in person, I don’t want to be overly dominant in the classroom so I pull back because they can do a lot with each other, but if I’m too aloof, I think my presence just needs to be felt. I can’t just kind of sit back and be a structural provider; I do have to step-in sometimes just to make sure.

Overall, instructors in peer-facilitated online course communities revealed that they intervened only minimally in online discussions because they wanted the discussions to be organic and student-centered so that students could explore, digest, and develop ideas together. This
approach, however, frustrated students from these courses because their ideas were not being validated by their instructors and it gave them the impression that their instructors were not interested in their work. This is why students from peer-facilitated course communities plead for instructors to be more involved. Instructors from instructor-facilitated online course communities, on the other hand, monitored students’ online discussions closely, providing constant support and feedback. Students from these courses recognized their instructors’ involvement and praised them for it because it kept conversations on track and constructive.

Private and public feedback.

Student interviews.

Students from both types of courses revealed that their instructors were always willing to provide feedback but did so in different ways. Students (Mira, Andy, Allie) in instructor-facilitated online course communities (A, B, E) felt that their instructors offered feedback in both online discussions and through private communications, such as Pepper’s private reply and chat features as well as e-mail. Mira (course A) stated,

I really like what my professor did, he was always there all the time, he was constantly showing his presence online so I knew that he was there and he would reply to us… So, in the discussions he seemed like he was one of us but chimed in to make some relevant points, and he’s clarifying, and he’s not letting us go on and build on misunderstandings because there were errors so he didn’t want us to develop a fake understanding of something. So, he was always giving feedback in the discussions but he would also give feedback privately that just focused on our individual progress and we could always e-mail him to get feedback, it showed that he was interested, he valued our stuff.

Andy (course B) enjoyed receiving consistent and frequent feedback from his professor. He stated,
I really liked when the instructor answers your notes. Even to say ‘Like,’ you know using the ‘Like’ button or just to chime in and say ‘good job’ because you know that she cares about you, that she’s reading what you’re doing. And online my professor would share links with us; she would clarify things because she cared for us. Also, she was great when you e-mailed her, she would respond quickly but also when she e-mailed you to give individual feedback on assignments it was detailed and it was focused on you and that was nice to get because it helped you understand things better.

Allie (course E) gushed about her professor’s approach to providing feedback, which happened consistently in both the online discussions and through private communication. This approach seemed to empower Allie as a learner because she was willing to take risks knowing somebody was there to support and provide clarification. She stated,

Immediate feedback when I e-mailed my professor was incredible like 24 hours turnaround. I don’t even know how she did it, so getting real, genuine, authentic feedback personalized to you as a student. And online she wasn’t very long, she didn’t write lengthy posts, but she was really on it. And I loved it; it was very short and to the point… she would wait and kind of sit back and then step in when she needed to and you would be kind of anxious and think when is Professor Mellie going to post something and then she would post and when she did you valued it. So, feedback from her was amazing and it made me more comfortable to write different things knowing she was there, knowing she would step-in, or knowing I could e-mail her and would get helpful and supportive feedback.

Overall, students in instructor-facilitated online course communities appreciated the public and private feedback their instructors provided because it made them feel more comfortable and valued. Students in peer-facilitated online course communities, however, revealed that their instructors seemed to avoid giving too much feedback publicly in online discussions.

According to students (Maggie, Jayla, Vera) in peer-facilitated online course communities (C, D, F) more personalized feedback was provided through private
communications with minimal feedback in online discussions. Maggie (course C) revealed that her professor believed in student-centered learning but was there to provide support when needed. She stated,

I think my professor tries to accommodate everybody and he’s not so strict when it comes to accommodating people and he’s so understanding from that perspective. For example, if you had questions he said you could post it on Pepper which he preferred because others could see it too but he also said you can e-mail him because some people might be too embarrassed to post or ask their questions publicly. So, he’ll then write, ‘I’ve been asked blah blah blah’ and this will be posted in Pepper without saying who asked the question, so he posts the answer for everybody to see. Also, he was very accessible, gave timely feedback, and his feedback was always given privately.

According to Jayla (course D) her instructor did not provide any feedback in the online discussion forum but was extremely accessible through private communications. She stated,

My professor was super accessible. He never really commented in the online discussions but he did give us starter questions to talk about but also said if you have something else you want to talk about or that you reflected on then go ahead with that. But he always responded really quickly when I e-mailed him.

Vera’s (course F) professor tried to give feedback when needed in the online discussions but gave more detailed feedback through private communication such as e-mails and phone calls. She stated,

I mean she tried, she did comment on our posts and said things like ‘great thoughts, did you think about this?’ So, I saw her comments throughout the threads a few times. We also had phone calls, they weren’t mandatory but you could log on if you had any questions, it was like a virtual office hour [laughs] and she always responded quickly to e-mails. I found the feedback I got in phone calls and e-mails were always really detailed and helpful.

Unlike students in instructor-facilitated online course communities who received balanced and
ongoing private and public feedback from their instructors, which they enjoyed, those in peer-
facilitated online course communities received private feedback when needed, which they
appreciated since it was personalized, timely, and detailed.

*Instructor interviews.*

For instructors (Professors Thomas, Olivia, Mellie) from instructor-facilitated online
course communities (A, B, E) providing ongoing feedback, privately and publicly, was necessary
to make themselves more accessible to students and to give them extra support. For Professor
Thomas (course A), using both public and private means of communication helped him give
students extra support when needed, keep students on track, and be more accessible to them. He
stated,

So if there is a good and strong community going I step back
further and further. I mean I'll step in when I need to but I'll back
off and I'll just let them just go, again as long as they're on task and
on topic. Also, I sometimes use private messaging and I ask them
for feedback and I respond to their e-mails, and then also private
messaging is sometimes good because when I notice students have
not been contributing so I would remind them I would send a
private message saying ‘hey, I haven't heard from you in a while
how are things,’ so those are the situations to remind them to
participate, and respond to questions, and then I get feedback from
them individually.

Professor Olivia (course B) also prefers to give private and public feedback to students because it
comforts them and, more importantly, the private feedback gives extra support to specific
students who need it without others knowing. She stated,

So, I usually wait and step into the online discussions when I need
to but I also like to go in and give advice to people in the first week
that nobody else can see. So, I can be really frank with them about
something they’re doing and saying or the way they’re
approaching something. I can be really direct, I can be really
supportive and I can make sure that something negative doesn’t
occur… I feel that builds in a kind of a little escape hatch for fear and anxiety and so for those students who are less experienced with the online environment or just feeling shaky… this is a way of me giving support and encouragement that is entirely invisible to the rest of the class, so it’s a face saving thing no one has to look like they don’t know about whatever it may be and so I think that builds up comfort and people’s confidence overtime.

According to Professor Mellie (course E), feedback is critical, and should be an ongoing process to provide extra support. This helps students produce better work. She stated,

Feedback is critical and students seem to like it. Nobody has told me that I’m too bossy or that I stick my nose in where I shouldn’t [laughs]. I think they appreciate that I’m online a lot because this gives them that extra support. So, again they know that I’m there, that I’m watching and I’ll add my comments to the discussion because I’m trying to build community through the discussions but I also message them to give feedback on their assignments. I also call them, so I set up individual phone meetings so I talk to everybody using the good old-fashion telephone… So, it’s an ongoing process till the end and I just find that lots of it enhances students’ learning and their products are just much better.

In instructor-facilitated online course communities feedback is ongoing, both publicly within the online discussions and privately using e-mail or private messaging. For instructors in these courses, consistent feedback gives students extra support, which enhances what they produce. Instructors in peer-facilitated online course communities, on the other hand, provided minimal feedback in online discussions, encouraging more peer feedback in that space, while opting to use private communication to provide more detailed and personalized feedback to students.

Instructors (Professors Luke, Jacob, Irene) from peer-facilitated online course communities (C, D, F) provided less feedback in online discussions because they did not want to disrupt or sway students’ conversations. Feedback, however, was provided privately to give extra support to students or to update students on their progress. Professor Luke (course C) avoided intervening in the online discussions, created a separate conference space on Pepper for students
to ask questions, and allowed students to ask questions privately. His aim was to not interrupt the flow of student discussions. He stated,

One thing I do not do which is my choice I never ever comment on anyone's entries. So, what I do each week I give each person feedback on their entries, it's all private… in the online discussions it’s more peer-feedback that I request but I also give and get private messages, which I respond and so I create. There is a relationship going on between myself and the student and so there is a wee bit of community going on there. I also create an opportunity for them to question me. I purposefully provide a space so that everyone can see my responses and so I don’t disrupt their conversations.

Similarly, Professor Jacob (course D) believed that being minimally involved in the conversation was better because he wanted the conversations to thrive and because he felt as though getting involved would manipulate the conversations. He stated,

Less is better. I think that, as I’ve said, in the past when I tended to get involved in conversations they fell flat and I think students are not always, not always comfortable saying certain things after the instructor has made his or her views known. So, I think less is better, I think it’s important to set things up beforehand to let the community thrive rather than being involved and trying to manipulate things as they go. Also, students do e-mail me not always but they do and that’s fine because some need that extra support and guidance, other times I e-mail them with their grade, so yea.

Like Professors Luke and Jacob, Professor Irene (course F) provided more feedback privately than publicly. She encouraged more peer feedback in the online discussions because she did not want students to think that she was favouring certain notes, throwing off the discussion with her comments, or intervening too much. She stated,

So, the idea is that they would get feedback from at least one or two of their peers in their group and they bounce off ideas from one another… Then I’ll usually try to use the private function on Pepper to that one person or the other option I give them is to
submit assignments to me by e-mail and so I’ll give detailed feedback by e-mail. I actually try not do that in the group environment because I don’t want to dominate too much but also because people could say ‘oh well she seems to be giving more feedback to that one person’ and the thing is some students need more feedback than others so I try to have a separate space, using the private function or e-mail.

Unlike the instructors from instructor-facilitated online course communities who opted for ongoing public and private feedback, those from peer-facilitated online course communities preferred to limit their public feedback and focus on providing private feedback when needed. For these instructors, providing constant feedback in online discussions meant swaying and disrupting students’ discussions. As a result they intentionally stayed out of the discussions and only intervened when needed. Instructors also thought it was more appropriate to create separate spaces in a conference, communicate over e-mail, or use Pepper’s private messaging functions to provide detailed personalized feedback to students.

**Discussion Format.**

**Student interviews.**

Interestingly, some students reflected on the discussion format implemented by their instructors revealing that it had an impact on the way they interacted with their peers. It was found that despite course type and community level students seemed to prefer being divided into smaller groups. Students (Mira, Andy, Allie) from instructor-facilitated online course communities (A, B, E) stressed their preference for smaller group formats. For instance, Mira and Andy experienced the rotating discussion format (see Figure 15), which they both enjoyed. Mira (course A) stated,

> At first, he placed us all in one conference and he gave us questions and we had the assignments and so on, so everybody was
just posting their work and replying to other people, and that was ok. But then he made two groups, group A and group B. He said it would be better and once you started participating it was like ‘wow, this is really working.’

\[\text{Figure 15. Rotating Discussion Format}\]

For Andy (course B) being in rotating discussion groups allowed him to dedicate more time to his posts and conversations with peers. He stated “being in two groups and switching every week was nice. I was able to really reflect, go deeper, and work with my peers. Like, I would look for specific peers’ notes because I wanted to see what they wrote because they had really interesting ideas.” Although, Allie’s (course E) instructor adopted a whole group discussion format (see Figure 16) which was enjoyable, she preferred a smaller group discussion format, which she had experienced in another online course. She stated,

In another class we did do group work, we would have weekly discussions in smaller groups, and I like that we also had collaborative assignments and I really liked that because it went above and beyond with further fostering that sense of community. So, although I felt connected with the students in Professor Mellie’s class, I felt more connected to my peers in the class where we did smaller group work and collaborative group assignments because I had more time to really work together with my peers.

Interestingly, students (Maggie, Jayla, Vera) from peer-facilitated online course communities (C, D, F) also preferred smaller group discussion formats. For instance, although
the discussions helped Maggie (course C) she revealed that contributing to a whole group discussion format (see Figure 16) was overwhelming and being in smaller groups might have helped her more. She stated,

I think the weekly discussions, writing every week, although it's time consuming for me because I'm an English Language Learner and I'm slow in writing, but it helped. I think maybe the whole class was sometimes overwhelming too, I think I would have worked better in group.

Jayla (course D) revealed that sometimes she preferred to eavesdrop on her peers’ conversations because there was a lot to learn by simply reading others’ discussions. Eavesdropping, however, became a strategy Jayla used to limit her participation in a whole group discussion format (see Figure 16). She stated,

They just had an amazing conversation and you learnt a lot from that, and I don’t necessarily have anything to add, so I’d just 'like' it… also because it’s time, right. These conversations are time-consuming sometimes it takes time to create a note, to reply, and it was mandatory for us to reply to all comments connected to our own notes, and with the whole group it was a lot. So, I would just ‘like’ notes because it just helped doing that, I mean the whole group was fine but I felt it would’ve been nice to not have to reply to everybody, to be honest smaller groups would have been nice.

Lastly, for Vera (course F) being divided into smaller groups (see Figure 17) improved the quality of her posts and allowed her to develop stronger relationships with her peers. She stated,
What I liked about my professor’s class is that she put us into groups of 5 so you would get marks on just posting within your group, you could go into the other groups and read their posts if you’d like but you were only required to post within your group of 5, so that meant less reading but writing good posts. Also, you kind of got to know the other 4 participants as well. So, just among the 5 of us we would have a conversation about the readings and about each other’s work and how the readings sort of tied into our work, so that’s nice because you didn’t have to read through so many posts.

![Figure 17. Small Group Discussion Format](image)

Despite course type and community level students clearly expressed a preference for smaller group formats because they gave students more time to reflect on ideas and conversations. For instance, Mira and Andy enjoyed participating in a discussion format that involved dividing students into two groups which rotated every week (see Figure 15). Vera, on the other hand, participated in a discussion format that involved dividing students into smaller groups (See Figure 17). She found that this format was manageable and made it easier to bond with peers. Lastly, Allie, Maggie, and Jayla participated in a traditional discussion format involving engaging with the whole class (see Figure 16) but expressed their preference of having smaller group discussion formats. To understand the reasons such diverse discussion formats were used instructors’ reflections were examined.

**Instructor interviews.**

In general, instructors had strong preferences for the specific discussion formats they adopted in their online course community. For instance, instructors (Professors Thomas, Olivia,
Mellie) from instructor-facilitated online course communities (A, B, E) adopted different discussion formats in their online courses in hopes of better meeting students’ learning needs. Professor Thomas (course A) adopted the rotation model for his discussion format because he thought smaller groups were more productive but emphasized that students have a role in making those small groups work. He stated, “yes, obviously smaller is always better [laughs] but having said that the smaller the better but it depends on the kind of students too, right…Small doesn't imply better but smaller with students who have the motivation to learn.” Professor Olivia (course B) also opted to use the rotation model for her online discussions since students expressed their preference for it. She stated,

Students tell me they like the small group discussions. So when I divide the class up and in my classes I shift the names around each week, so I alter the composition of the subgroups just so by the end of the class everybody's been talking to everybody but they don't have to have such a big group discussion. And people tell me that makes them feel more comfortable and they feel like they get to know people better. So, there's lots of different ways of doing that but I do it because students prefer it, they like it more.

Professor Mellie (course E), on the other hand, disliked the small group format and preferred the traditional whole group format for discussions in her instructor-facilitated online course community. She stated,

People would just converse with each other within small groups. I found that you cannot anticipate who’s going to be a whole-hearted participant and who’s going to be a sit back and just rest on your heels participant and so the group invariably was made of some people who didn't do anything at all or very little and some who did contribute a lot and they always felt like they were alone they always wanted to go jump into other communities... So, I do not do small groups, I will not ever again it was a terrible experience for everybody. And it was also extra work for me because then I was repeating myself.
Instructors (Professors Luke, Jacob, Irene) from peer-facilitated online course communities (C, D, F) also adopted different discussion formats but did so in hopes of stimulating stronger discussions and connectivity among their students. For instance, Professor Luke (course C) opted for a whole group discussion format because he did not want to limit his students’ creativity and also thought it was the best way to foster community. He stated,

> Also, I keep them in as a whole class because you know you don't want to limit creativity and originality but nevertheless they have access to that, all those ideas, so they get to see where they stand on things, whether it matches the views other students have and that's a subliminal thing, sort of subconscious thing but I think that could help create community.

Similarly to Professor Luke, Professor Jacob (course D) preferred to use the whole group discussion format because he believed it would stimulate stronger discussions among students. He stated,

> I think the best thing I can do is stay out of the way and put most of my efforts into organizing a forum for them to exchange their own ideas, in a semi-structured way together as a whole class, because they can have access to everyone’s ideas.

In contrast, Professor Irene (course F) divided her students using the small group model for discussions in her peer-facilitated online course community. For Professor Irene, this format seemed to be the better avenue for promoting a sense of community and support among students. She stated,

> To build a sense of community and sense of support I create smaller groups. I create study groups of common interests so if there are 4 or 5 people all interested in math education they’ll be in a study group. Also, because I've only taught an online course in a 6-week period there is very little rotation because there is very little time but what happens there is always a moment where they can go to another group.
Despite course type and community level all students preferred the small group discussion format. Instructors, however, did not unanimously agree. For instance instructors from instructor-facilitated online course communities did not use one specific format. They either used the rotation discussion format or whole group discussion format in hopes of better meeting students’ learning needs. Similarly, instructors from peer-facilitated online course communities did not use one specific format. They either used the small group discussion format or the whole group discussion format in hopes of stimulating stronger discussions and connectivity among students. Nevertheless, all instructors used different discussion formats to better support students by attempting to provide a positive online course community.

4.2.3 Summary.

Findings show that there is a strong relationship between a sense of community (SoC), facilitation method, and instructional strategies in online courses communities. More specifically, quantitative findings revealed that a higher SoC was associated with instructor-facilitated online course communities; whereas, a lower SoC was associated with peer-facilitated online course communities. In addition, the qualitative findings revealed that specific and diverse instructional strategies (i.e. online discussions, role of the instructor, private and public feedback, and discussion format) were adopted for each community level and course type. The facilitation method adopted by the instructor, which is associated with specific instructional strategies, determines the level of a sense of community in an online course community.

4.3 Research Question 2: Pepper Logs

4.3.1 Quantitative results.

To answer the question “how do students’ activities differ in strong and weak online
course communities?” I examined the log data from Pepper using various statistical tests. I then used cluster analysis if there were any statistical differences with other courses. The goal of this analysis was to gain an understanding of students’ online behaviour in both types of online course communities. Student and instructor reflections were then examined to inform the quantitative findings.

Interestingly, students in peer-facilitated online course communities spent an average of 27.16 (SD = 21.01) hours online during an average of 104.23 sessions (SD = 77.79). Students in instructor-facilitated online course communities spent an average of 33.62 (SD = 21.95) hours online, which was spread across an average of 100.38 sessions (SD = 62.65). These basic system use statistics show that student usage levels did not differ significantly based on course type (p > 0.05). In both types of online course communities, students were logging in regularly for a comparable amount of time and their activities were spread across the entire term. This interpretation was verified by looking at the weekly usage statistics. Specific student activities from across the entire term were then compared to see if there were differences based on the facilitation method used in each course (Table 5). For this comparison, the Mann-Whitney test, which is the non-parametric version of a t-test, was used because student activities were not normally distributed (p < .01) for all variables. For this study, I primarily report on activities where differences in the frequency of logged activities were observed between peer-facilitated and instructor-facilitated online course communities. These logged activities include: notes, private shared notes, messages to instructors, editing, liking, links created by note, note rereading, replies, and sentiment.

Table 5 shows that there are significant differences based on the courses’ facilitation method for all student actions except liking. It also shows that students from instructor-facilitated
online course communities posted more notes (by a factor of 1.45), spent more time editing notes they posted, performed more linking actions (with 4 percent of their notes containing references to another’s note), reread one another’s notes more frequently, and replied to a greater number of their classmates’ notes. In contrast, students in the peer-facilitated online course communities were generally less active within the course, demonstrated slightly more sentiment in their prose, and participated in more private forms of communication with their instructors and peers, including private shared notes and messages to instructors.

Table 5

Descriptive and inferential statistics of learner use of the Pepper asynchronous OLE

<table>
<thead>
<tr>
<th>Student Activity</th>
<th>Instructor-Facilitated</th>
<th>Peer-Facilitated</th>
<th>Mann-Whitney Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Notes</td>
<td>55.28</td>
<td>37.01</td>
<td>37.91</td>
</tr>
<tr>
<td>Private Shared Notes</td>
<td>0.36</td>
<td>1.29</td>
<td>0.79</td>
</tr>
<tr>
<td>Messages to Instructor</td>
<td>1.17</td>
<td>2.57</td>
<td>3.77</td>
</tr>
<tr>
<td>Editing</td>
<td>25.27</td>
<td>31.54</td>
<td>11.62</td>
</tr>
<tr>
<td>Liking</td>
<td>0.89</td>
<td>0.73</td>
<td>0.57</td>
</tr>
<tr>
<td>Links Created by Note</td>
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<td>0.08</td>
<td>0.01</td>
</tr>
<tr>
<td>Note Rereading</td>
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<td>151.51</td>
<td>123.56</td>
</tr>
<tr>
<td>Replies</td>
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<td>34.53</td>
<td>28.46</td>
</tr>
<tr>
<td>Sentiment</td>
<td>6.37</td>
<td>0.14</td>
<td>6.48</td>
</tr>
</tbody>
</table>

4.3.1.1 Cluster Analysis: Student Usage Patterns.

Student activities were chosen to be used in the cluster analysis if they had statistical significance, that is, if there were any differences with other courses or if there was previous scholarly support, as was the case with liking. Below I describe the clusters that were identified for each of the targeted activities: note writing, note editing, note rereading, and note liking (see
Table 6). Each description is accompanied by a visualization representing the activity level of the typical student from the cluster which is associated with the identified usage pattern. The median activity levels of all students within a particular cluster were used to create this representation of the average student.

Table 6

The number of students and instructors assigned to each cluster for the activities where usage patterns were identified

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cluster Label¹</th>
<th>No. of People per Cluster by Course Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Instructor-Facilitated</td>
</tr>
<tr>
<td>Notes</td>
<td>Keeners</td>
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<tr>
<td></td>
<td>Outsiders</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Respondents</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Discussants</td>
<td>7</td>
</tr>
<tr>
<td>Editing</td>
<td>Perfectionists</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Consistent Editors</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Confident Writers</td>
<td>45</td>
</tr>
<tr>
<td>Rereading</td>
<td>Keeners</td>
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</tr>
<tr>
<td></td>
<td>Typical</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Just-in-Time Readers</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Outsiders</td>
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</tr>
<tr>
<td>Liking</td>
<td>Maintainers</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Non-Supporters</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Supporters</td>
<td>2</td>
</tr>
</tbody>
</table>

¹These labels were assigned and not the output of the clustering algorithm.

**Note writing.** The clustering algorithm identified four different usage patterns in students’ posting of notes to the discussion forum (Figures 18 & 19):

- **Keeners:** users from this small group (see Table 5) had activity levels that were consistently higher than those of the other groups. These users’ activities often exceeded
the combined activity of the other three groups.

- *Outsiders*: members in this group participated minimally to meet the requirement set by their instructor. It is possible that members in this group felt excluded from the community or disconnected because they struggled to recognize the value of being a part of learning community. From Figures 18 & 19, we can see that they stop participating during the final week of class (W13) and that they do not maintain their participation during the term break (W10).

- *Discussants*: members of this group take the lead in starting and maintaining discussions in the forum. They are the students who initiate communication and recruit their peers to join in while the class is in session.

- *Respondents*: individuals from this group participate regularly, but opt to have others start and pull them into the discussions. This is shown in their lower activity levels and the shape of their curve, which is similar to that of the discussants but differs during one week in which their activities continue through the term break and into the exam period.

Overall, participants from peer-facilitated online course communities had more outsiders, discussants, and respondents for note writing, while their peers in instructor-facilitated online course communities had more keeners. These types of online invisible note writing processing activities highlight an eagerness from students in peer-facilitated online course communities to stay on top of their note writing which is further explained by students in their interviews below (see, 4.3.2 Qualitative results).
Figure 18. Winter session: the number of new notes that each type of user typically wrote each week.

Figure 19. Summer session: the number of new notes that each type of user typically wrote each week.

Note editing. Three different usage patterns in students’ note-editing actions were identified (Figures 20 & 21):
• **Confident Writers:** members of this group performed minimal editing actions at the beginning of the course term. These members confidently wrote their notes and posted them without major edits.

• **Consistent Editors:** members of this group consistently edited each note they posted an average of one or two times. These members probably went back into their note to add, omit, or reword the content of their note.

• **Perfectionists:** members of this group edited their notes extensively, at times even exceeding their note posting activities. These members are very likely to edit their notes for minor things, such as grammar, punctuation, and mechanics.

Overall, participants from instructor-facilitated online course communities had more perfectionists and consistent editors when it came to revising their notes, whereas students in peer-facilitated online course communities had more confident writers. These types of online editing behaviours show a level of awareness from students in instructor-facilitated online course communities who were consistently editing their notes, which is further explained in the interviews (see, 4.3.2 Qualitative results).
Figure 20. Winter session: the number of weekly edits typically made by each user type to existing notes.

Figure 21. Summer session: the number of weekly edits typically made by each user type to existing notes.

**Rereading notes.** Rereading notes by other members of the community seems to suggest that notes have the ability to influence others and have importance to everyone in the learning
community. Four different usage patterns regarding students’ rereading patterns were identified. Similar to note writing, two of the four rereading patterns were those of keeners and outsiders, but these student types refer to different reading patterns and have different meanings in this context (Figures 22 & 23):

- **Keeners**: activities of members in this group extended beyond the course term, possibly representing students’ attempts to better understand their instructor’s feedback from course discussions and graded assignments.

- **Outsiders**: Interestingly, members of this group had higher rereading activity levels than posting levels. This particular pattern suggests that outsiders reread their instructor’s notes multiple times, possibly with the hope of gaining a better understanding of the summaries and expectations provided by their instructor. Outsiders also reread student notes, possibly, to clarify their understanding of notes where cultural references impeded their understanding of the content. This may explain why the shape of their curve resembles that of the keeners’ and the end of their rereading activities coincided with the last week of class.

- **Typical Readers**: members of this group did relatively little rereading. These students, possibly, only reread when it was appealing or helpful to their learning. They read with purpose and flexibility, getting the necessary information without wasting time.

- **Just-in-Time Readers**: members of this group had consistent rereading activity levels following course demands, which continued through the term break and ended with the exam period.

Overall, participants from instructor-facilitated online course communities had more outsiders and just-in-time readers when it came to rereading notes, whereas students in peer-facilitated
online course communities had more typical readers. These types of online rereading behaviours show the importance of rereading for students in instructor-facilitated online course communities who reread often to gain a better understanding of course content and peers’ ideas. This is explained further in student interviews (see, 4.3.2 Qualitative results).

Figure 2. Winter session: the typical number of note rereads that each user type performed.
Winter session: the typical number of note rereads that each user type performed.

**Liking.** Similar to note editing, there were only three usage patterns identified relating to students’ note liking activities (Figure 24 & 25):

- **Non-Supporters:** similar to the outsiders found when analyzing the rereading and note writing habits, members of this group participated minimally and did not support their peers through the use of liking.

- **Maintainers:** individuals of this group are typical students who reciprocate the activities of their peers in hopes of meeting their social obligations of being supportive, attentive, and friendly peers.

- **Supporters:** those in this group aim to provide their peers with the sense that they are contributing to the learning community. Supporters try to communicate this sense by liking others’ notes, which serves to express support for their peers and indicate that they enjoyed the contribution of certain content made by the note’s author.
Overall, instructor-facilitated online course communities had more participants who were maintainers when it came to 'liking' other notes, whereas peer-facilitated online course communities had more students who were non-supporters. The increased use of the ‘Like’ button in instructor-facilitated online course communities reflects these students’ need to maintain supportive and friendly learning communities.

*Figure 24.* Winter session: the number of likes that each user type gave.
Figure 25. Summer session: the number of likes that each user type gave.

Using the G*Power program (version 3.1.9.2) the effect size and study power were calculated. The study’s power (0.834) indicates that I was unlikely to have missed an effect when one was present, which is not surprising given that differences were found. For Lakens (2013), the effect size is the most important outcome for empirical studies. One of the reasons for its importance is that it allows researchers to share the magnitude of their study’s effect which shows the broader significance of their results and not only the statistical significance. The calculated effect size for this study was 0.531. This statistic reveals that instructor-facilitation has a moderately large effect. Moreover, the effect size of instructor-facilitation is only somewhat lower than those commonly achieved with human tutoring (0.79) or intelligent tutoring systems (0.76) (VanLehn, 2011). Overall, the quantitative data revealed a strong correlation between course type and community level as well as higher activity levels from students in instructor-facilitated online course communities. Additionally, the cluster models that were developed detailed the different online behaviours, within specific activities, of students in instructor- and
peer-facilitated online course communities. To further contextualize and explain the reasons for such distinct online behaviours, students’ and instructors’ views are explored below.

### 4.3.2 Qualitative results.

The qualitative data revealed invisible note processing activities, as described by students. These activities include the following: (1) note writing, (2) rereading, and (3) editing. After discussing students’ understandings of these activities, I will present the instructors’ expectations of students’ online notes to further give insight into these note processing activities.

#### Notes writing.

**Student interviews.**

Students (Mira, Andy, Allie) in instructor-facilitated online course communities (A, B, E) emphasized their awareness of the audience. Although students knew their professors would most likely read and compare their notes, they focused more on writing for their peers by sharing personal experiences in hopes of making meaningful connections with their peers. As Mira (course A) explained she was aware of her audience and wanted to connect with them. She stated,

> [When] I create my initial post, I know that the audience will be my professor and my peers...I’m trying to look and add to what people have to say, or maybe there was something in their post that reminded me of something, that somehow relates to the course material, that I could actually go to and share.

For Andy (course B), including personal stories in notes makes the note meaningful to the author, but more so for others to connect with the note through that story. He stated,

> You want to let others know that you read their stuff, that you understood them and the topic, as such. But also you want to connect it with your experience to make it meaningful...so what I try to do is connect the reading, the article with my experience as a
person. Perhaps, as a husband, as a brother, also as a language teacher. So, you try to put together many things and hopefully one of my peers can connect with it.

Similarly, Allie (course E) stressed the importance of sharing personal experiences to help students connect, relate, and learn from one another. She stated,

> What I like to do was make a personal connection to what we were reading. So I’m trying to make not only a connection to the theory but also use a personal example like from my teaching because I want to make it more applicable and something other people can relate to.

Overall, students in the instructor-facilitated online course communities focused on creating notes that were more meaningful by sharing a personal experience to connect with their peers. The idea of connecting with peers was more important to these students because it was believed that this connection would lead to deeper thinking and more meaningful posts. Interestingly, these students knew the professor would be reading their notes but opted to focus on building relationships to produce a more deeper and collaborative online dialogue. These students continuously stressed the importance of their peers’ learning and not only their own learning.

For students (Maggie, Jayla, Vera) in peer-facilitated online course communities (C, D, F) note writing was done to support peers in their learning and to express their own views when giving and receiving peer feedback. Maggie (course C) echoed the importance of helping her peers but focused on the need to express her own views and meet the requirements. She stated,

> I try to fulfill what’s required and express my perspective because I’m explaining what I believe about it, but if I’m replying [then] I’m giving feedback from my point of view, and also to help my peers like if they missed something but it’s from my perspective…I created my notes to meet the requirements the professor gave us. I didn’t do more.
For Jayla (course D), it was important to express her views in the notes that she writes but also to support her peers at times. She stated,

[I’m] trying to express my views. But if I’m writing a note in response to someone I’m more focused on what they’ve said, their opinion, and if there’s anything that I think would help like an article or something I’ll attach it and be like ‘hey you’ll enjoy this, it fits into what you’re talking about.’ So, it really depends what kind of note it is...But usually it’s me putting my thoughts out there.

For Vera (course F), it was important to meet the requirements but to also write notes related to her point of view, her life, and her job. She stated,

I guess to meet the requirements but after I finished the readings if there was anything that stood out for me in the readings or if there was anything that I thought about from the readings that was applicable to my own life, or my work, what I do here, so just to further the conversation, to add my view, my experience and maybe to add something that someone else might not of thought about.

Unlike students from instructor-facilitated online course communities, who wrote notes to support their peers’ learning needs, those in peer-facilitated online course communities created notes that focused more on their own views in hopes that they would further the conversation.

**Editing.**

**Student interviews.**

Despite course type all students revealed that they edited their notes, mainly to fix grammatical errors, after posting. Students (Mira, Andy, Allie) from instructor-facilitated online course communities (A, B, E) seemed to portray themselves as consistent editors. For example, Mira (course A) found herself using the edit button regularly when writing posts because she knew others would be reading her work. She stated “I post, and then I read it as if I’m the person who receives it, which is weird [laughs] and then I find something in it and I click the edit button
and I re-edit.” Andy (course B) emphasized that he consistently edited his notes before and after posting because he would find mistakes. He stated,

Yes, I do. It’s mainly because as English is my foreign language and I learn it as a foreign language sometimes I make spelling or typo mistakes. I’m a kind of perfectionist, so I like to check before and after I’ve posted it. If you check my notes, sometimes the due date was March 15 but then you see that I edited it in April and it was because I reread it and found a spelling mistake like our instead of or.

Similarly, Allie (course E) emphasized that it was extremely important to edit notes because of their permanency. She edited her notes “all the time because it’s permanent it’s different than an oral contribution. I’m doing my posts in the evening because I work, so I love the edit button thank God there’s an edit button.” Overall, students from instructor-facilitated online course communities presented themselves as consistent editors because they saw notes as being permanent. Furthermore, students stated that they needed this consistency to please their audience (i.e., their instructor and peers) by presenting confident writing in their notes. Participants from peer-facilitated online course communities, however, minimally edited their notes.

Although students (Maggie, Jayla, Vera) from peer-facilitated online course communities (C, D, F) acknowledged editing their notes for grammatical errors and to add missing content, many emphasized that they did so minimally and stopped editing once a peer replied to a post. For instance, Maggie (course C) stated,

Usually before I post anything I definitely check it. I do it first on a Word document and then post to Pepper. But after I post it I rarely go back to check it. So, usually I would revise any grammar or spelling mistakes.

Jayla (course D) argued that editing for grammar should be allowed before or after posting, but
editing to add content, such as revising a paragraph, is wrong after a note has been posted. She stated,

I don’t really revise them because I feel like that’s cheating. If you’ve written a note [pause] If it’s a typo you’re fixing that’s one thing, but if you’ve written a note [trails off]. I find this frustrating like someone wrote a note and I responded to it, and then they revised it and included a paragraph, which I commented on, then replied to me saying ‘Oh, well what did you think about this?’ And so, I just looked like an idiot because my comment made no sense anymore, so I think there are problems in there sometimes. So, yea there was a whole other section they put in when I said ‘Hey, have you thought about this side of the problem. I’m sure that would be a really interesting conversation.’ So, I try to stay away from revising posts after that because it was just a strange experience...I rather just write what I had to say knowing that I got gaps.

Vera (course F) emphasized that she rarely went back in to edit her notes but if she did it was because she forgot to include a piece of content or to correct grammatical errors. She stated,

I think I might have edited a couple of times. So, if there was something I might have forgotten something, or maybe I spelled something wrong but usually to add content like if I made a post Monday and then on Tuesday or Wednesday there was another experience or something else I had thought of and think ‘oh shoot I should also put that in’ because it relates to the readings and so I would go back and edit and include it as well but not too often.

Overall, participants from peer-facilitated online course communities edited their notes minimally for grammar and content compared to those from instructor-facilitated online course communities. This activity may be due to students in peer-facilitated course communities knowing that their instructor was not observing their discussions consistently and, as a result, feeling more comfortable posting their notes with flaws such as missing content.

**Rereading.**

*Student interviews.*
For students (Mira, Andy, Allie) in the instructor-facilitated online course communities (A, B, E) rereading was seen as a key activity in understanding and connecting with a peer’s note. For these participants rereading was done from the perspective of an audience member to make sure their notes accurately and clearly reflected their thoughts. For instance, Mira (course A) emphasized that it is important to reread because this leads to proper communication and stronger connections in the forum, which are necessary since online platforms lack various social cues. Mira stated,

So, I’m rereading as an audience member and one of my peers, and if you think about it, it’s written communication and because you’re missing other cues and the other face-to-face stuff I found myself making sure it was polite enough by how it sounds so that it’s not offensive. So, it’s very important for me to pay attention to the way somebody who receives it might read it.

Students from the instructor-facilitated online course communities reread their own notes as audience members, as a final proofing stage, to make sure they accurately conveyed their thoughts without any misunderstanding. In the same way, Andy (course B) stated,

To be honest, I did it a few times. It was mainly because I was preparing an answer, a reply for them, and I wanted to make sure to cover all the points and to not misinterpret what they said but apart from this I didn’t do it.

Allie (course E) stated she would write her note then leave it and return to it another day with fresh eyes. She shared her method:

I would also go back in the morning, so I would do a Word document and then go back in the morning ‘does this make sense?’ Rereading for errors because it’s something that’s permanently going to be in cyberspace for everybody, and you can’t take it back. So, yes I do reread often.
The idea of rereading as an audience member highlights a strategy these students used to avoid misunderstandings, provide accurate feedback, and show their peers that their work is valued. Adopting this particular rereading method produced more confident writers because it provided students with an opportunity to reread, reflect, and rewrite if needed. These students understood that such communication was critical in shaping and building a dialogue with their peers and made the effort to reread their notes before posting them publicly. Perhaps knowing and seeing the instructor’s involvement in the course also motivated students to be aware of what they wrote and how they responded, which would explain the time and effort they put into rereading notes.

In contrast, students (Maggie, Jayla, Vera) in peer-facilitated online course communities (C, D, F) did little rereading. Their activities consisted of rereading their own notes to make sure there were no errors and rereading their instructor’s notes to make sure they were meeting the requirements. As Maggie (course C) stated,

I reread because when I write it initially [pause] sometimes the sentence makes sense but it’s out of context, so I just fix it by rephrasing. So, I do it to make sure it was clear, that I didn’t make any mistakes here-and-there.

Jayla (course D) admitted to rereading her instructor’s notes and sometimes her peers’ notes because it was beneficial to her work. She stated,

I’ve reread notes. I do it all the time, especially the professor’s notes but then sometimes I’ll just remember a really good conversation and because I’m working as well if I think there’s something in there that could really relate to what I’m doing at work or I think I should remember then I’ll go back and look at it.

Vera (course F) stated, “[n]o, I didn’t reread my peers’ notes ever [laughs]. I might have gone back to reread if something that I had written before might have been relevant or something that
I had read before was relevant.” These students only reread their own notes, not those posted by their peers. If they did reread a peer’s note it was because it contributed to their own learning. Perhaps students’ knowledge that the instructor is not fully involved in the online course community indirectly created such behaviours of minimally rereading and only doing so when it benefited their own learning or if they had to. In comparison, students from the instructor-facilitated online course communities mainly reread notes from the viewpoint of their audience to support their peers. Students from peer-facilitated online course communities reread less and only did so to benefit themselves. Overall, for students in peer- and instructor-facilitated online course communities the activities of note writing, rereading, and editing shaped the way they engaged with the content and with their peers.

*Instructor interviews.*

Instructors (Professors Thomas, Olivia, Mellie) from instructor-facilitated online course communities (A, B, E) can easily identify a good quality note because it goes beyond frivolous comments, standalone notes, and niceties. For Professor Thomas (course A) there are specific characteristics for identifying strong notes. He stated,

> So, you see students really interacting with each other and they’re really talking to each other, building ideas, sharing resources that relate to the content instead of just responding or giving a general response of again ‘great’ or ‘thanks,’ stuff like that… it’s pretty easy who’s getting it and who’s not. A lot of times you look at their answer and you know that they got it and when they respond to other students or comment or correct other students you know they got it. So, correcting their peers, that doesn’t have to only be me because that shows students also care about their peers’ understanding too. So as an instructor you can tell if they didn’t put thought into it because it’s not meaningful, it’s just like here’s my post.

Similarly, Professor Olivia (course B) highlighted specific characteristics for good quality notes,
emphasizing that these notes are obviously recognizable because they are thoughtful. She stated,

They’re able to bring a very well put together response that kind of deals with a whole bunch of other students’ responses, that kind of conceptual move, which is an indicator of learning. I think discourse structure is really the key thing and I realize there are different ways of describing this kind of activity where people say things like ‘wow, great idea Krystle blah blah blah’ and ‘how about this’ but those kinds of acknowledgments and the responding to somebody else’s idea and then building in that it shows both a valuing of other people’s work and a way of kind of moving ahead with conceptualizing ideas and I think that shows that students they respect each other and they’re being polite because that’s important [laughs]. I also look at the summary stats in Pepper to see if people are in the discussion, are they reading the discussion, are they spending time, are they visiting, so it’s presence that counts too because not everybody is writing. Some people write and others think, listen because it can be overwhelming but those people will go back in later and insert their comment.

Professor Mellie (course E) expressed the same views as Professors Thomas and Olivia, stating a good note is obvious because it extends ideas using various examples and is connected to students’ own experiences. She stated,

It is when they extend each other’s ideas, they are deepening each other’s ideas, bringing in other examples, making sense of it in terms of their own experience. So, it’s when they’re showing that they’ve done some deep thinking, and that might have some silence and being silent is okay because some people listen and think but they still later bring in their observations and experiences and all those kinds of things. You can tell because it’s not only about their own views and opinions, they connect to the ideas of others, extend the conversations and take both learning experiences to a deeper level.

In summary, for instructors in instructor-facilitated online course communities, good notes usually reflect thoughtfulness because they go beyond niceties, negotiate meaning, take others’ views and experiences into account, and reshape one’s own understanding.
Although instructors (Professors Luke, Jacob, Irene) in peer-facilitated online course communities (C, D, F) implemented mandatory requirements for writing notes, they did so with the belief that their students would create notes with similar characteristics to those outlined by instructors from instructor-facilitated online course communities. For Professor Luke (course C), when students give each other constructive feedback and are able to pull meaning out of the articles that is relevant to them, then that tells him they are meeting his expectations. He stated,

When they say or make comments like ‘I really like what you have to say here’ and they might just leave it at that and that’s not good but then sometimes they will elaborate and even they read someone else’s work and say ‘how about considering such and such,’ when it’s constructive feedback and you just know. It’s how I know they’ve done the things I’ve asked them to do.

For Professor Jacob (course D), students responding to each other, similarly to a face-to-face discussion, indicates strong notes and discussions. For him, responding forces students to consider and internalize their peers’ ideas too, which reshapes their own understandings and views. He stated,

What I do is I kind of set it up so that what happens kind of resembles a discussion in a face-to-face class. That students initially have to read the articles, chapters or whatever and they have to respond and then they have to respond to others’ responses, so it kind of evolves like a discussion. When students respond to one another, students stimulate each other to think about things and tap into their own experience and contribute their own knowledge... I also see students supporting one another, from time-to-time, in the kinds of things they say to one another, they're appreciative and they express their appreciation for other students’ experiences, and their knowledge, and they occasionally do admit and say online that they've learned from this.

When students build on each other’s ideas, this indicates a good note to Professor Irene (course F) because that means students are interrogating their own understandings and views. She stated,
I think when they're building on each others’ posts, comments, and work in a way I mean I do give them some guidelines in my syllabus like this is what participation looks like in this context it's not just about saying hello and having lots of emoticons because it's a learning environment. So, I like those criteria for sure so they need to be building, so if you're saying something and I'm not just saying 'yay great idea’ or ‘thanks’ or 'good work, exclamation mark.’ I’m also challenging and asking you questions building on that and then I'm taking what you're saying and that's influencing my work and my learning is deepening then I think okay, great.

For instructors in both instructor- and peer-facilitated online course communities, a good quality note has the same characteristics regardless of course type or community level. These notes stand out for instructors because they recognize that students are being thoughtful, critical, and constructive with the readings, with others’ views, and with their own biases and understandings. Although students in instructor- and peer-facilitated online course communities wrote, reread, and edited notes for different reasons, they all shared the same goal of improving the quality of their notes, which the instructors recognized.

4.3.3 Summary.

Findings show that students in instructor-facilitated online course communities posted more notes due to having more keeners, spent more time editing notes they posted with more perfectionists and consistent editors, performed more linking actions, reread one another’s notes more frequently with more outsiders and just-in-time readers, replied to a greater number of their classmates’ notes, and had more maintainers when it came to ‘liking’ other notes. In contrast, students in the peer-facilitated online course communities were generally less active within the course with less notes posted due to having more outsiders, discussants, and respondents for note writing, demonstrated slightly more sentiment in their notes, had more confident writers so edited their notes less, had more typical readers so did relatively little rereading, participated in
more private forms of communication with their instructors and peers, and used the ‘Like’ button less due to having more non-supporters.

Even though students in each course type participated in different activities with regards to writing, editing, and rereading online notes, they all had the same goal of improving the quality of their notes and contributing to the discussions. Interestingly, instructors emphasized that good quality notes...share similar characteristics, despite course type and community level, and recognized students were attempting to achieve that same high quality through their online activities.

4.4 Research Question 3: Community and Online Learning

4.4.1 Qualitative results.

To answer the question “how do students and instructors perceive community in online course communities?” students’ and instructors’ reflections were examined. Three themes emerged from participants’ reflections: defining a sense of community (SoC), exploring the differences of a sense of community in face-to-face and online courses, and community as an enabler of learning.

Defining a sense of community.

The overarching research question for this study—what is the role of community in online learning?—led me to develop interview questions about participants’ experiences with a SoC and how they defined and classified it. To fully grasp a SoC, an understanding of participants’ definitions of the concept was needed. These definitions encompassed both students’ and instructors’ perceptions of a sense of community in an online course community.
Student interviews.

Interestingly, students (Mira, Andy, Allie) from instructor-facilitated online course communities (A, B, E) and students (Maggie, Jayla, Vera) from peer-facilitated online course communities (C, D, F) expressed similar definitions of a SoC. When defining a SoC, students from both types of courses focused on inclusion, which refers to feeling comfortable enough to share views and experiences with the expectation that they will be accepted and valued by classmates. For instance, Mira (course A) stated that a sense of community means “that people definitely have a lot of respect for each other. That there’s an appreciation for everyone’s opinion and previous learning experiences and a sense of strong support.” Similarly, Andy (course B) believed a SoC is about the connections you have with others. He stated “interactions you can make with other people in terms of for example professional likes or background…it’s empathy when sharing your concerns about specific topics or needing help to teach something.” For Allie (course E) a SoC meant including everyone. She stated “it’s a sense of comfort, a sense of inclusion and being a member of a group in which I feel I have something to contribute.”

Definitions expressed by students in instructor-facilitated online course communities emphasized a need to accept and value all views in hopes of creating a comfortable and inclusive environment. This was also reflected in the definitions expressed by students in peer-facilitated online course communities.

For instance, participant Maggie (course C) expressed that for her a SoC meant bonding with peers and learning from them. She stated “a community in a course would be for me people sharing perspectives, cooperating with those with different points of views, building friendships but not only from academic interests but from social interests too because you can learn from people.” Participant Vera (course D), also shared a similar view and defined a SoC as being
comfortable enough to bring your “whole self” to an online course community because trust exists with your peers. She voices the following,

I think it will have to do with a sense of sharing and being able to bring your whole self to the classroom. So, not just your academic self but being able and comfortable to share other aspects of your life. I think also fostering a sense of openness and honesty within the classroom, and also feeling like you trust the people in the classroom, and that you’re able to share information, and depending on the topic sharing something that’s personal.

Lastly, Jayla (course F) also emphasized that a SoC meant feeling comfortable enough to have an open and honest dialogue with peers without the fear of being attacked or judged by others. She stated,

It’s about feeling welcomed and safe and you can have conversations without worrying [pause], I really think the key word is comfort, are you comfortable with other people, have you developed enough rapport to be able to talk about things or challenge ideas and have it be productive rather than be deconstructive. So, it’s getting to the point in class being able to say something and not internally thinking ‘oh my God are people going to be rolling their eyes’ or you’re worried about sounding foolish or something.

Overall, students in instructor-facilitated online course communities and those in peer-facilitated online course communities defined a SoC as a feeling of inclusivity, as being comfortable, and as feeling safe enough to share personal views and experiences with the expectation that their peers will accept, value, and learn from these views and experiences.

*Instructor interviews.*

Despite adopting different course types and producing different community levels, all of the instructors expressed similar definitions of a SoC as their students. Specifically, instructors defined a SoC as a psychological state that students reach in which they develop trust and
comfort with their peers and in which they become more willing to participate and share their views. For instance, instructors (Professors Thomas, Olivia, Mellie) from instructor-facilitated online course communities (courses A, B, E) emphasized that community refers to students feeling comfortable enough to participate and communicate with others in their own way. For instance, Professor Thomas (course A) believed a SoC is when students are able to participate by sharing ideas, experiences, and resources. He stated “[a] sense of community is when students start sharing ideas, when they start interacting with each other in addition to faculty and they really get into the discussions as well as sharing their personal experiences and materials.” For Professor Olivia (course B), a SoC is when students feel safe enough to interact with others. She stated, “It’s a sort of psychological state that people reach. I find that they feel safe enough that they’re willing to participate and communicate with one another.” Similarly, Professor Mellie (course E) described a SoC as having a feeling of commonality and knowing that the group will accept who you are no matter your opinions. She stated “I would say it’s a feeling of having common goals, being able to have your voice heard as well as being able to be silent and have people to still accept who you are.” Definitions from instructors from instructor-facilitated online course communities defined a SoC as a state in which students feel safe to participate and contribute in their own way knowing they will be accepted and not judged, which is also reflected in the definitions from instructors in peer-facilitated online course communities.

For instance, instructors (Professors Luke, Jacob, Irene) in peer-facilitated online course communities (C, D, F) agree that a SoC refers to students’ comfort in sharing their views and being able to accept the value in criticism because there is mutual trust and support. For instance, for Professor Luke (course C) defined a SoC as when students recognize the value of different views and are able to relate to them because these views are healthy for participants’ learning.
He stated “I would define it in the sense of knowing as many things as possible about other people, being able to relate to people and being sensitive to other people in ways that are good for both participants.” Similarly, for Professor Jacob (course D), a SoC means students trust each other to the point that they are comfortable giving and accepting criticism. He stated,

It’s having a particular kind of relationship with members and that would include knowing others to a point. Also, I think having a certain amount of trust in others and being comfortable with others. I think it’s also about being comfortable critiquing ideas and taking criticism themselves without feeling that they’re being personally attacked.

Lastly, for Professor Irene (course F), a SoC refers to “a feeling of social cohesion, togetherness and mutual support.” The responses from students and instructors clearly illustrate agreement, despite course type and community level, that a sense of community refers to a psychological state in which students feel comfortable enough to participate because they trust that their peers will accept and value their contributions.

**Face-to-Face Courses and Online Course Communities.**

Throughout the interviews all participants compared their experiences with face-to-face courses and online course communities. In doing so, participants grappled with the possibility of whether communities could truly be developed and fostered in online course communities. Taking into account participants’ reflections, this theme will explore students’ and instructors’ views on face-to-face courses and online course communities.

*Student interviews.*

Students (Mira, Andy, Allie) from instructor-facilitated online course communities (A, B, E) noted that a SoC developed more quickly in face-to-face course because there are more social
cues on which to rely. Online course communities, on the other hand, lacked many of those cues. Therefore it takes longer to develop a SoC online because other strategies need to be used to foster it. For instance, Mira (course A) stated,

> You don’t feel it right away so it’s very hard, so if you don’t have that personal connection with people, you don’t really feel it. So, there’s a lot of reading in between the lines, the human communication aspect is missing, so we’re missing a lot, we’re missing the social cues. The language we use online, the verbal communication, you know that can be tricky too. I mean the context remains the same but it’s the tone, it’s the visual, everything else might have a different meaning, it might be something else online. So, something harmful online might actually be something harmless in face-to-face communication, and you really don’t know if that person criticized you or if that person just made a comment. But you see community is different online, like I said we use other things like being personal to develop it.

Similarly, Andy (course B) stated that community in a face-to-face course is created differently from community in an online course community simply because there are limited social cues online. He stated,

> Yes, it is possible to create it, but in a different sense. It’s not like when your on-site learning, where the connection is at the level of bodies you can see people, you can really interact with them and all these paralinguistic features. For example, gestures, such as nodding, the proximity of interaction this helps you to develop a real sense of who the person is. Her tone or his voice, the way he speaks, is not the same when one writes because when you write particularly in this environment, you write in an academic way, you don’t use the purpose fillers of ‘like’ or ‘oh my gosh’ so all of these let’s say face-to-face habits they help you develop the topic but in online, as you don’t have all these features, what you do is rely on other things to create community. So, you can use professional background, interests, personal stories and we write back to each other on those terms, so in an online community you rely on other things and you know it just takes longer to create because of it.
Lastly, Allie (course F) emphasized that communities are easier to create in a face-to-face course than in an online course community. Because, for Allie, creating an online course community needs to be intentional, the instructor must help set the tone. She stated,

> Just like any classroom, as a teacher we know with our students we would want them to feel safe and feel that they could share and so I think part of that is the instructor’s role because they set the tone and that goes for online too. Although we are mature students you still want that initial reminder of ‘okay, everyone’s ideas are welcomed’ and also connecting with people personally or socially, I think that helps to create a sense of community in an online course, especially when it’s not face-to-face.

Overall, students in instructor-facilitated online course communities claimed that creating a community in an online course community is possible but will take longer and needs to be intentional. Different strategies need to be used to foster community online because of the limited social cues.

Similarly, students (Maggie, Jayla, Vera) in peer-facilitated online course communities (C, D, F) believed that it is more difficult to create a community in an online course community than in a face-to-face course because of the missing social cues. They also argue that online course communities seem more artificial than face-to-face courses. Maggie (course C) stated,

> It’s possible but difficult. So, I came from a cultural background where we prefer face-to-face interactions in our social life, work and everything. So, I don’t usually enjoy online courses because I cannot see the people and I don’t think that writing will really express the nature of people so it doesn’t feel real for me and sometimes you may misunderstand what they’re saying.

Similarly, Jayla (course D) felt that creating a community in an online course community would have more challenges because of the limited social cues, the marks attached to discussions, and the professor’s observations of everything that is written. She specified,
I do think it’s possible but there are a lot more challenges than if you’re in an actual classroom. I think it’s really hard to get to know people, there’s a lot of concern about your marks when you’re in an online class because all of the discussions are marked… So, even though you’ll get participation marks in a class, I don't think that you're as worried about what you're saying because there is no way the professor is going to remember word for word everything and that's part of the classroom environment. Whereas, online the professor can go back and really read through your responses, and they don't have to remember it because it's all recorded for them and yea a mark is attached to every word you write.

Vera (course F) echoed Jayla’s and Maggie’s views, stating that online course communities are more difficult to create because of the limited social cues. Because of this, instructors need to be intentional about its development. She stated,

I do but I think the instructor needs to be very intentional about it, I don't think it sort of just comes across naturally. I think the instructor needs to put in certain assignments, strategies, opportunities that sort of enables a sense of community. So, some examples, for me I just finished my MEd so I had taken 10 courses and one professor we had food pretty well every time so a few people would volunteer to bring in food and so that sort of facilitated the sense of community. Another professor every class we would do a smudge and we would go around and have a quick check-in like 1 minute each person just say how they're feeling… So, it became a journey rather than you go in and just do what you need to do academically and then sign off.

Overall, for students in peer-facilitated online course communities it is more difficult to create a community in an online course community because of the limited social cues. Students in instructor-facilitated online course communities, on the other hand, believed that the missing social cues could be supplemented with other strategies to help foster a SoC in an online course community. For these students, the meaning of community stayed the same in face-to-face courses and online course communities, but the way community is fostered and experienced differed in each setting. Instructors’ views were examined to better understand the decisions that
were made, the dilemmas that arose, and differences between face-to-face courses and online course communities.

**Instructor interviews.**

For instructors (Professors Thomas, Olivia, Mellie) in instructor-facilitated online course communities (A, B, E), creating communities online is definitely possible, and the only difference from face-to-face courses is that different strategies are needed to foster and sustain a community in an online course community. For instance, Professor Thomas (course A) stated,

> Yes, because they are individuals interacting with each other even though there is no face-to-face contact they still have community with each other… As long as the course is structured in such a way with the right opportunities and the kind of students you have, you know they're motivated to learn, a community can be created.

Similarly, Professor Olivia (course B) believed that community can exist both online and offline, and has the same meaning in both settings. She stated,

> I know students talk about the sense of community they have in the course. So, I do think it's possible. But actually it's not only that they tell me I have an intuitive feeling too... I think when I teach in a face-to-face course I think there's the idea when you're working with a group of people that is a community. That you're class is a community is something that I also believe online.

Professor Mellie (course E) also expressed the idea that face-to-face courses and online course communities have the same meaning and only differ in terms of how community is fostered in each setting. She stated,

> Well, you see the thing is I'm a classroom teacher and so I've always been devoted to developing a community with my classroom. So, I think a SoC has the same meaning, of wanting students to feel like they belong, in face-to-face and online courses the only difference was that I had to adapt to the OLE because
creating and maintaining community online is different because you can't respond.

As was suggested by their students, instructors from instructor-facilitated online course communities also held the belief that it was possible to create a community in an online course community. More importantly, face-to-face and online course communities had the same meaning and only differed with respect to how community was fostered and experienced.

Instructors (Professors Luke, Jacob, Irene) in peer-facilitated online course communities (C, D, F), on the other hand, stressed that an online course community was possible but would be limited compared to a face-to-face course because of the missing social cues. Professor Luke (course C) stated,

I think it is. I assume it's limited because you can only digitize so much. You know people are particularly in the course that I've taught actually all the courses that I've taught they're asynchronous and so part of knowing somebody I think is being there in the moment. We do provide them with the idea that they can communicate outside. I think it's limited because of the asynchronous nature and also because of digitization.

Professor Jacob (course D) expressed a similar view, emphasizing that community is possible to create in an online course community but doing so is challenging because only words are being exchanged. He stated,

I think it's more challenging to engender this kind of community in an online learning environment as opposed to a classroom environment because you're just exchanging words in this environment. It's not, you know you're not there in person and you can't bring the kinds of things that you would bring to a classroom. I mean you can't see a person and so you don't know their reactions. You can't diagnose a tone of voice which I think means a lot in face-to-face situations/classrooms.
For Professor Irene (course F), a community is possible in an online course community.

However, the strategies used to create a face-to-face course need to be cautiously assessed because those same strategies may not work when creating an online course community. She stated,

> It is possible but will be hard because it's online. I think that all the things that make it possible in an in-person environment are what can make it and break it in an online environment. It's just the way of doing that in an online environment is different because you don't know what will work. The ways to get there are different but the end goal of trying to achieve that SoC is possible but will be a bit challenging.

Similarly to their students, instructors in peer-facilitated online course communities believed that creating a community in an online course community would be possible but challenging due to the limited social cues. Students and instructors from the instructor-facilitated online course communities, on the other hand, believed that creating a community in an online course community is definitely possible but different strategies would be required to do so.

**Community as an enabler of learning.**

Regardless of course type, for participants in this study, community enables learning. Both students and instructors emphasized that community helps to build strong relationships, which are needed for learning to occur. This theme explores students’ and instructors’ views of how community enables learning.

*Student interviews.*

Community allows students (Mira, Andy, Allie) from instructor-facilitated online course communities (A, B, E) to build bonds with peers. Because of these bonds they are able to share ideas, disagree, and talk openly about the topics. Such engagement allows students to not only
develop a shared understanding but also encourages them to care about their peers’ learning. For instance Mira (course A) stated,

It's about being responsible and taking ownership for my peers’ ideas and views too because that makes the quality of learning better. And this can only happen with a community because you build this bond where you openly talk about stuff and share ideas, even if we disagree and it's okay if it's right or wrong or different because you'll have your peers there to support you and you'll have the prof, the expert, there to help and guide you. These different perspectives only help to develop a shared understanding...and so the community is needed to help you value different perspectives and to have a discussion with the content that goes deeper.

For Andy (course B), community helps to create empathy with people which reminds people to care about others’ views and learning goals as well as their own. He stated,

It’s about creating empathy with people, you have to acknowledge, you have to value their learning too, you have to recognize that they have a voice and you have to provide opportunities for them to have that voice and most importantly to develop that voice because sometimes we're new to certain topics so what we might say in the beginning might change later on. So, community humanizes learning online. It brings human aspects to learning by giving us a voice and reminding us to value and care about each other's learning too.

Similarly to Maggie and Andy, Allie (course E) believed that community was about the connections made with peers because these connections led to a deeper understanding of the content. She stated,

So, it's the connection you have with the people in the class and you get more out of the theory or the course material when you connect with the instructor and when you connect with the people you're taking the class with. It's about connections, which allow us to not only learn from the content but also from each other's experiences and just valuing those connections because we rely on them to learn, and it helps us go beyond the theories and readings. So there is that human aspect so I guess without community I don't
know I just feel we just become people online just sitting in front of a computer and answering a bunch of questions just doing it for the grade or credit or whatever and it's not as meaningful. I just feel like I get a lot more out of the theory and when people share their stories and when we're getting that personalized feedback it's very rewarding.

For students in instructor-facilitated online course communities, community enabled their learning through relationships and connections with peers. These relationships exposed students to diverse ideas, and allowed them to disagree, negotiate meaning, and create a shared understanding. Such interactions helped students move beyond only caring about their own understanding and allowed them to care about their peers’ learning too. Likewise, students in peer-facilitated online course communities acknowledged how important community was in connecting students to one another.

Students (Maggie, Jayla, Vera) from peer-facilitated online course communities (C, D, F) emphasized that interacting with others provided extra support and comfort which helped them to expand their understanding and knowledge. For instance, Maggie (course C) stated,

I think with community it’s about trying to humanize learning online with more social interaction. I think it provides this extra support by making people more comfortable to learn online. And so community is trying to bring this social aspect for learning online by having us work with different ideas, people and so forth because that would help some of us learn more, learn better. I think this social aspect is extra support for those who need it and others are good at giving it, so in that aspect it will work for those people and help take their learning to a whole new level, so I don't think it's a bad thing.

For Jayla, (course D) community made learning more meaningful because it allowed her to build on her own knowledge with the beliefs, ideas, and opinions of others. She stated,

So, I think it's to get the learning to actually happen in a way that's meaningful. I consider myself to be a pragmatist (i.e. focused on reaching a goal, practical) there's no point in learning if you're not
going to do anything. Yes, having the knowledge base is really important and valuable but if you just sit there on it and never ask yourself what’s next, share it, pass it on, reshape it, then that knowledge is just going to die with you because you're never going to share it, you're just going to know it, sit on it, and do nothing. So that community is what takes it to that next step of you not just focusing on "I" but "us" and understanding that you need to build on your knowledge base and to do that you need others because it won't grow.

Lastly, for Vera (course F) community allowed for greater understanding of the content because there is an option to learn with others, which made her feel safe. She stated,

It fosters greater understanding of the material because you have this ability to learn from others but only if they're comfortable sharing more about themselves or telling a personal story. I feel that sort of solidifies your own learning in a way, than if it's just posting the materials there and you learn. You know when you're learning and you hear a story, or somebody gives an example, or they relate it to their own experience it just seems to hit home more, than if you were to just read it from a textbook or as a PowerPoint slide. I just think having a sense of community allows for more impactful learning [pause], kind of just go back to the story thing, you seem to just remember those stories more and I think it makes it more of a safe space.

Sharing similar views to their peers in instructor-facilitated online course communities, students in peer-facilitated online course communities emphasized that community plays an important role in establishing relationships. Students go on to suggest that these relationships lead to deeper and more meaningful learning because students are able to interrogate their own biases with the diverse views of others. Interestingly, instructors have the same views as their students, as they also view community as the key to promoting and supporting learning.

_Instructor interviews._

For instructors (Professors Thomas, Olivia, Mellie) in instructor-facilitated online course communities (A, B, E), community helps to create the conditions for learning to happen by
giving everybody the option to interact with difference views, to share their opinions, to agree or disagree, or to be silent. For instance, Professor Thomas (course A) stated,

If by community you mean forming subgroups and to learn and share then I agree but if you mean community as everybody having loving, kumbaya relationships then no, that’s not community [laughs]. But having a working group in which they share, they like to share, they talk to each other about work, and you know they can get a little personal too like the medical students I told you about who talked about their work environment and that's okay too because it's still work related… Community helps them work together at that personal level.

For Professor Olivia (course B), community may not be necessary for everybody’s learning, but it helps build that trust among students. This makes students more willing to share their ideas and helps them feel like other people will value their ideas. She stated,

It's not a kind of a fuzzy thing. It's trust. I mean it comes down to trust and willingness and the knowledge that other people are going to listen to you and take your ideas seriously and you won't be laughed at or derided or shown up, you know, you won't lose face. I mean those are kind of conditions for many people to participate, however there are people who don't care about that for whom that stuff is way less important and partly I think it's gendered … I see community as the enabler as setting the conditions for learning to happen because I know for many people without that they’re not going to feel okay to talk.

Similarly to Professors Thomas and Olivia, when Professor Mellie (course F) reflected on her experiences she emphasized that community helped to make learning happen because it creates a sense of togetherness amongst students. She states,

The purpose is so that learning can happen. I don't think it will happen if everybody feels disconnected they'll think why bother. It's all about learning with each other, that togetherness or at least they need to have a sense of community with two people and the teacher they have to feel like they have some kind of connection to the teacher and a few others. So, the purpose of a sense of
community is establishing those relationships so you can take the content beyond just your understanding so you can learn from each other because you trust each other because you really care about the other person's ideas.

Overall, for instructors from instructor-facilitated online course communities, community helps to foster togetherness amongst students, which builds trust. This trust leads to more meaningful interactions, which help take the content beyond the text, reshape students’ understandings, and create a shared understanding of the content.

Similarly, instructors (Professors Luke, Jacob, Irene) from peer-facilitated online course communities (C, D, F) stated that there needs to be a certain level of trust between students for them to feel comfortable enough to share ideas or critique one another. For instance, Professor Luke (course C) emphasized the importance of developing relationships with others to build that trust and comfort. He stated,

So, when you think of community you sometimes think about relationships and this is an interesting thing [pause], so it’s the relationship of knowledge. So you can have relationships to people, and to their experiences, and you know their personal lives and all these things are extremely important and are a part of a community. I think I'm saying that it’s important for learning.

Professor Jacob (course D) reflected that community is needed because it helps establish that trust students need to participate in the community. He stated,

I would say there has to be some sort of community that, you know, students are putting themselves out there, so there has to be a certain level of trust among students, there has to be a certain level of comfort in order for them to both critique and take criticism of their ideas and just to feel comfortable writing about themselves and writing about their ideas.

Lastly, Professor Irene (course F) explained that some students may not need community to learn, but from her point of view students are more likely to learn more in a community because
they have access to different views. She stated,

I think you could probably learn more with a sense of community there for sure. But you can also conceive of a different kind of a course or an approach where somebody is doing independent reading or a research course online and they can still learn and move at their own pace through whatever module where it doesn't require as much community and interaction. So, it depends, but I think in theory, as a general rule, you're going to learn more and deepen the learning a bit more if you have that exchange and feedback from different points of view.

All participants believed that community enables learning (see Figure 26). For them, a sense of community (SoC) allows students to build strong relationships with their peers, which leads to trust. Developing this trust allows students to engage with each other by sharing ideas, providing feedback, critiquing views, and much more. Such engagements offer students new ways to learn from others and help students value the views and knowledge base of others. This helps students develop a shared understanding and an in-depth knowledge of the content.

4.4.2 Summary.

To summarize, all participants, despite course type and community level, defined a sense of community (SoC) similarly and believed that a SoC enables learning, but had slightly different views of establishing a community online. For participants in instructor-facilitated online course communities, creating a community online was possible because different strategies could be adopted to supplement the limited social cues available online. However, for participants in peer-facilitated online course communities, creating a community online would be difficult to establish due to the limited social cues. Nevertheless, students and instructors perceived community similarly with regards to its definition and purpose but disagreed on whether it is possible to fully foster and experience it online.
Figure 26. Sense of Community as an Enabler of Learning
4.5 Summary

To summarize, all participants defined a sense of community (SoC) as a feeling of inclusion in which students are comfortable enough to participate because they trust their peers to accept and value their contributions. Participants also agreed that community could be developed in an online course. For students and instructors from instructor-facilitated online course communities, an online course community had the same meaning as a face-to-face course but would take longer to foster online because the limited social cues needed to be supplemented with other strategies. Although participants from peer-facilitated online course communities agreed that it was possible to foster a SoC in an online course community, they all emphasized that it would be a limited community and would be difficult to foster because of the missing social cues. In other words, community had the same meaning in face-to-face course and online course communities for all participants, but the way it is fostered and experienced online is different. Findings also revealed that all students preferred to participate in smaller group discussions because these discussions gave them more time to reflect on others’ ideas. Despite students’ preferences, instructors adopted various types of discussion formats. For instance, some preferred the whole group format, others enjoyed rotating students within two groups, while some instructors opted to divide students into smaller groups. Nevertheless, all instructors shared the same reason for implementing their preferred discussion format, which was to better support students’ learning needs and to foster a safe and comfortable learning environment. Also, all participants agreed that community enabled learning (see, 4.4.1 Qualitative results). This happens because community creates relationships, which leads to trust. This trust allows students to have meaningful engagements, and such engagements provide new opportunities for students to learn from others and to value the knowledge and experiences of others. This helps students
develop a shared understanding and in-depth knowledge of the content. Despite these points of agreement between participants from the different course types, there were also distinct differences that must be discussed.

The data findings revealed that high community levels were associated with instructor-facilitated online course communities. Students in instructor-facilitated online course communities felt that they were more connected, learned more, and had a stronger SoC (see, 4.2.1 Quantitative results). More specifically, Pepper visualizations showed that students in these courses had stronger connections with their peers (see, 4.3.2 Qualitative results). In addition, the Pepper log data findings revealed that students in the instructor-facilitated online course communities had a higher number of notes, replies, rereads, and revisions and were also more likely to ‘like’ notes and link to their classmates’ notes (see, 4.3.1 Quantitative results). Furthermore, analyses from the cluster modeling showed that students from instructor-facilitated online course communities seemed to log on to contribute to the online discussions (see, 4.3.1.1 Quantitative results). These students were keeners when posting notes, consistently editing in hopes of accurately representing others’ ideas, rereading their instructor’s and peers’ notes to gain a better understanding and to keep up with course demands, and lastly using the ‘Like’ button to meet the social obligations of being a supportive and friendly peer. These students also enjoyed online discussions more because they were able to interact with others’ ideas, share personal experiences, and learn from their peers. Instructors from these courses monitored students closely, always willing to step-in to offer guidance. This is because instructors viewed feedback as critical so they provided it publicly and privately to better support students. Although these instructors monitored student discussions closely, they did not implement any mandatory requirements because they wanted their students to feel comfortable. This meant
making the discussions about the students and not about the direction they wanted the discussions to go.

In contrast, low community levels were associated with peer-facilitated online course communities. Students in these courses felt that they were less connected to their peers and instructor, learned less, and had a weaker SoC (see, 4.2.1 Quantitative results). For instance, Pepper visualizations showed that students in these courses had weaker connections with their peers (see, 4.3.2 Quantitative results). The Pepper log data also revealed that students in these courses were less active, producing fewer notes and rereading, editing, ‘liking,’ and linking less frequently than their peers in instructor-facilitated online course communities (see, 4.3.1 Quantitative results). Analyses from the cluster modeling showed that students from peer-facilitated online course communities seemed to log on to meet the requirements presented by their instructors (see, 4.3.1.1 Quantitative results). These students did the minimum writing activity required and opted to wait for others to start discussions. Students only minimally edited their notes, which allowed them to portray themselves as confident writers. They also only reread notes when doing so benefited or interested them and rarely used the ‘Like’ button to support their peers. Although these students understood the value of online discussions they focused more on expressing their views and got frustrated with the mandatory note requirements, which was highlighted when they vented about their peers’ posting habits. Findings also showed that students in peer-facilitated online course communities used private forms of communication (private shared notes and messages to instructors) twice as frequently and showed slightly more sentiment (see, 4.3.1 Quantitative results). Upon reflection, these students revealed that they received more private feedback than public feedback from their instructors. They also admitted wanting their instructors to be more involved in the discussions to validate their ideas and
thinking. Instructors from these courses opted to not intervene in students’ online discussions because they wanted students to develop their own arguments and ideas. They also preferred to provide feedback to students privately rather than publicly because they did not want to influence or stop the whole class discussion with their views and ideas.

Lastly, analyses of the Pepper log data also showed that student usage levels did not differ significantly based on course type or community level. In both course types, students spent a comparable amount of time logged in to the online course community and their activities were spread across the entire term (see, 4.3.1 Quantitative results). Upon reflection, students in instructor-facilitated online course communities emphasized that knowing their instructors monitored discussions was helpful and comforting because it meant that their instructors were interested in their work. Many of these students portrayed their instructors as being hands-on and involved in the course, thus reflecting an instructor-facilitation method. Students in the peer-facilitated online course communities, however, revealed that their courses were student-led. This made them feel a bit uneasy because they were unsure if their thinking and understanding of the material was accurate. Interestingly, all instructors, regardless of course type or community level, revealed that they looked for thoughtful notes within the discussions because it showed that students were making an effort to engage with the content and with their peers. For these instructors a thoughtful note was recognizable because it had certain characteristics: sharing personal experiences and views, building on ideas, sharing resources, providing constructive criticism, being supportive, and interrogating one’s own biases to create a shared understanding.

These findings suggest that there is a strong correlation between a SoC, facilitation method, and students’ online behaviours. More specifically, an online course community is more likely to stimulate student participation and build a stronger SoC in instructor-facilitated online
course communities. To further understand the possibilities for having such a relationship, findings will be discussed and contextualized in the next chapter.
5 Chapter 5

5.1 Discussion and Conclusion

This chapter provides the following: a brief overview of the study, a discussion of the results in relation to the literature, a reconsideration of the conceptual framework of constructivism for understanding community and online learning, a discussion of the limitations of this study, proposed recommendations for instructors and students, suggestions about areas for future research, and a conclusion which includes my personal reflection.

5.2 Brief Overview

Distance education is growing rapidly in higher education with online course communities pulling in more registrations than on-campus courses (Hirshhorn, 2011). Many post-secondary institutions have invested heavily in online courses in hopes of reaching nontraditional students and increasing student enrollment (Hew, 2015). Although this investment may seem to have been successful due to the increasing popularity of online learning, some students are still wary of online course communities. Saad, Busteed and Ogisi (2013) revealed that students associate online course communities with a lower quality of teaching, less effective instructors, and poorer quality materials. Other problems associated with online learning include: i) a high dropout rate, which has been attributed to feelings of isolation and alienation among students because of their physical separation (Rovai, 2002a); ii) a lack of interaction between students (Carr, 2000); iii) a clash between societal beliefs and personal and cultural beliefs; and iv) miscommunication between students (Rovai & Wighting, 2005; Zembylas, 2008).

To help students feel more comfortable online and provide a positive learning experience, many instructors are encouraged to focus on “the social nature of learning,” which emphasizes
the importance of interactions and discussions between students (Hew, 2015, p. 2). Consequently, many instructors attempt to foster a sense of community (SoC), which refers to a sense of trust, commonality, and interactivity among students. The belief is that fostering a SoC will help counter feelings of wariness, isolation, and alienation that online learners may experience as well as build camaraderie and social reinforcement among them (Conrad, 2005).

Although the literature emphasizes the importance of community in an online course community, there is a lack of consensus as to which specific strategies and steps help to create it (Liu et al., 2007). To add, some scholars (Liu et al., 2007) have criticized current research for failing to explain the role community plays in learning. The question is: how can instructors and students properly foster a community in an online course community when the role of community in online learning is unclear? Only when instructors and students understand the role of community can they adopt the appropriate strategies to foster it. Until then, it will be difficult to do so. My research aimed to address this gap and further the discussion by presenting the role of community in online learning as well as providing some possible strategies to better foster a community online.

5.3 Discussion of Findings

The findings of this study provided insights into various aspects of community in online learning, while some results confirmed what is already known other results challenged the current literature. Throughout the literature, community has been defined in many different ways. Some scholars (Barab & Duffy, 2000) claim the word community is likely to lose its meaning since there is minimal criteria to differentiate between a community of learners and students collaboratively learning together. Although there is a lack of consensus in defining community, proposed definitions have the following commonalities: a group of people pursuing
a common endeavour, who have a sense of belonging and feel safe enough to collaborate, explore ideas, and share personal experiences in hopes of creating a shared understanding. My results revealed that, regardless of community level or course type, all participants defined community in similar ways. They all agreed that community in an online course community refers to a psychological state in which students feel comfortable enough to participate because they trust their peers to accept and value their contributions. This definition from participants reflects some of the commonalities outlined above and is aligned with the definition of community adopted by this study. This is Rovai’s (2002a) definition of community which emphasizes that in an online course community, learners have common expectations and goals, have a sense of connectedness, feel like they are a part of the group (spirit), rely on other members (trust), and interact with other members (interactivity). Having consensus on the definition of community among my participants was favourable in that it showed a shared understanding of community from both instructors and students, across community levels and course types. That being said, although participants had similar definitions of community, findings revealed that students and instructors from instructor-facilitated online course communities and those from peer-facilitated online course communities expressed different views about how a community should be fostered online.

Not surprisingly, results showed that all participants agreed that community could be developed in an online course community, however they believed that the way it is fostered and experienced online is different. Students and instructors from instructor-facilitated online course communities believed that community would take longer to foster online because of the limited social cues, but these cues could be supplemented with strategies. Students and instructors from peer-facilitated online courses, however, believed that community would be difficult to foster
online because of the missing social cues and would always be limited even when it did exist. Such views are aligned with current research in that a community online will take longer to create and instructors need to implement specific strategies to help foster community in an online course community (Song et al., 2004; Vonderwell, 2003). More specifically, participants’ opinion that limited social cues hinder or slow down the development of a community online is a fair concern. According to Sherblom (2010) a CMC environment often “reduces, modifies, and eliminates vocal and physical cues,” which restricts social information about an individual (p.500). This elimination leaves others with an unclear impression, allows for biased interpretations, and less self-reflective communication, which surely reduces social presence (Sherblom, 2010). When social presence is reduced it becomes worrisome because social-emotional communication is considered integral to the development and maintenance of a community online (Derks et al., 2008). Similarly, Kruger (2007) highlights that researchers who view face-to-face learning as the educational norm argue that distance education faces immense pressure to establish a communities of learners in hopes of compensating for the absence of face-to-face contact. Sherblom (2010), however, argues that human communicators are social information processors who will communicate no matter the medium. Communicators are able to adapt their strategies and manipulate available cues. Adapting and manipulating the available social cues is something participants from instructor-facilitated online course communities recognized, whereas participants in peer-facilitated online course communities stressed that social cues cannot be compensated for, thus when community is created online it will be limited. Therefore, community can be created online, but it takes longer and is more difficult than in face-to-face settings because the limited social cues that exist online need to be manipulated and supplemented using specific strategies. There is no consensus, however, as to what strategies
help to foster a community online because the role of community in an online course community is not clearly outlined in the literature (Liu et al., 2007).

Although the literature currently emphasizes the importance of building community in online course communities, some scholars (Liu et al., 2007) have criticized existing research for the lack of strategies and for not clearly highlighting the role of community in learning. Participants’ reflections revealed that they believed community enabled learning. For participants, community enables learning through relationships, which lead to trust. This trust allows students to have meaningful engagements which provide new opportunities for students to learn from one another and to encourage students to value the knowledge and experiences of others. This helps students develop a shared understanding of the content. In other words, community sets the conditions for creating relationships which lead to deeper learning because students have access to other’s views. Participants’ views parallel arguments from the social capital literature wherein communities are formed through relationships which lead to valuable assets such as access to new knowledge sets, emotional support, and mutual understandings.

According to Schwier (2007), online course communities are built on relationships and these relationships offer value to learners. This value is experienced through tangible forms such as knowledge as well as intangible forms such as encouragement, emotional support or norms that govern online interactions. For Cohen and Prusak (2001) social capital encompasses shared values, behaviours, and understandings. These things help to bring people together as members of a community, making cooperation possible. However, according to Daniel (2002) trust is the most valuable component within social capital. Trust makes it possible for community members to have meaningful and legitimate interaction, and without it, it is unlikely that members would be willing receive or invest in social capital. Online course communities have the potential to
enhance social capital by helping people develop bonds with one another, by facilitating the formation of relationships (Norris, 2004). Having these relationships helps to foster collaboration among students and encourages them to share ideas, knowledge, and experiences (Becks, Reichling, & Wulf, 2004). Similarly, Brown (2001) points out that in his study students experienced community at three different levels: the first level involved making online acquaintances or friends with whom they found similarities, the second level involved becoming a member of the community which was achieved by being part of a thoughtful threaded discussion, and the third level involved camaraderie which was experienced through long personal communication with others. According to Brown (2001) each of these levels involved a certain degree of engagement online, students who felt connected with their peers placed more importance on the class and ensured time was put aside, were eager to interact and learn from their peers, were more motivated and active in terms of participating and contributing to class discussions, and always respected their peers. Thus, higher community levels are accompanied with higher engagement among students and vice versa (Brown, 2001). Although, community was present for some students and not others, those who did experience community realized it was as an opportunity to network, to learn from each other, and provide support. Therefore, community sets the conditions for students to create relationships, which other studies have shown leads to deep learning and better student outcomes.

The literature continuously stresses the importance of community in online course communities, emphasizing that it leads to better student outcomes but it is unclear what these outcomes are (Drouin, 2008; Exter et al., 2009; Liu et al., 2007). Similarly, Hew (2015) states, “[measuring] the impact of peer or instructor facilitation on student outcomes such as the number of their postings,” is also needed since it is lacking in the literature (p. 36). My results suggest
that students in instructor-facilitated online course communities had higher activity levels in the online discussions, with more notes, replies, edits, rereads, ‘likes’ shared, and links created to other notes. Students in peer-facilitated online course communities, on the other hand, used twice as many private forms of communication, usually to communicate with their instructor, and showed slightly more sentiment in their discussions. Interestingly, the cluster analysis also revealed that for notes, edits, rereads, and ‘liking,’ students in instructor-facilitated online course communities were always thinking about their peers’ learning with the hope of connecting with them. Those in peer-facilitated online course communities, however, focused more on themselves and their own learning. Based on these findings it is clear that community and facilitation method had an impact on student outcomes. More specifically, instructor-facilitated online course communities had high community levels and seemed to produce more positive student outcomes.

My quantitative data suggests that higher community scores, as measured by Rovai’s (2002b) classroom community scale, were associated with instructor-facilitated online course communities, while peer-facilitated online course communities had lower community scores. Students substantiated these findings by emphasizing that instructors were needed to keep discussions on track and to validate ideas. More specifically, students in instructor-facilitated online course communities felt that they were more connected, learned more, and had a better SoC. These students enjoyed online discussions and appreciated their instructors chiming in to clarify and provide feedback. Students in peer-facilitated online course communities felt that they were less connected to their peers and instructor, learned less, and had a weaker SoC. These students expressed annoyance with the mandatory note guidelines implemented by their instructors, as well as with their peers’ posting habits and their instructors’ limited involvement.
within the online discussions. Perhaps, students are encountering contradictory expectations here because their instructor seems to want them to interact and learn, but are too distant to let students feel a sense of how they are doing, as a result student feel as though their discussion are not authentic due to the artificial limits imposed by their instructors. In summary, instructors who had a more active role in their online course communities established a stronger SoC in their courses and a more effective learning environment according to their students, than those who opted for a peer-facilitated approach. This finding supports current research, specifically the teaching presence literature, which stresses that instructors play a key role in developing a SoC in online course communities. For instance, Shea et al. (2006) found a strong correlation between teaching presence, learning, and community. They state, students who reported higher levels of learning and community to the survey were also more likely to report higher levels of teaching presence behaviours on the part of their instructors. For Shea et al. (2006) a strong and active teaching presence, which refers to the instructor actively guiding and supporting the discourse, is related to students’ sense of learning, connectedness and community in the course. To add, Agosto, Copeland, and Zach (2013) found that it was important for instructors to stay involved to promote collaboration and encourage conversations in online course communities because higher levels of engagements and interactions between students lead to deeper and more critical thinking. Instructors who are ineffective in promoting such interactions and engagements in online course communities are likely to cause students to feel bored, disconnected, and overwhelmed (Borup, West, & Graham, 2012; Reilly, Gallagher-Lepak & Killion, 2012). Therefore, instructors are key in creating the necessary conditions to foster a community among students, and not doing so could be detrimental to their students’ online learning experiences.

It is important to mention that the role of the instructor in online learning has come under
scrutiny. Previous research encouraged the instructor to adopt the role of online facilitator, which includes “keeping the discussion on track, establishing ground rules and good discussant behavior, helping students overcome technical problems, and asking questions to help participants understand a particular issue or topic, or drawing students’ attention to opposing perspectives” (Hew, 2015, p. 20). In spite of this, some scholars (Arend, 2009; Correia & Baran, 2010) are now questioning whether or not the instructor should take on this role, since it may be too time-consuming to facilitate discussions properly (Correia & Baran, 2010) and doing so could unintentionally lead to discussions centered on the instructor (Light, Nesbitt, Light, & White, 2000). These scholars prefer “the use of students as peer facilitators in an online discussion,” which includes students collaboratively controlling the discussions (Hew, 2015, p. 21). This suggests that students are more comfortable discussing their experiences, challenging each other’s ideas, and sharing their opinions in a peer-facilitated discussion than in an instructor-facilitated one (Poole, 2000; Rourke & Anderson, 2002). My research findings, however, clash with the latter argument. Students in my study preferred an instructor-facilitated online course community format because they found that knowing the instructor was reading their work and ready to intervene to clarify misinterpretations or provide further support, if needed, was comforting. My finding is supported by Hew (2015) who also found that despite the benefits of peer-facilitation that have been reported in the literature, students preferred instructor-facilitation. This is because instructors, as the “subject matter experts”, are able to keep discussions on topic, ensure equity, and guide learning more effectively (Hew, 2015). Students also preferred instructor-facilitation because they want instructors to facilitate discussions rather than act as sages (Hew, 2015). These results emphasize that instructors have a critical role in developing a community and have adopted various strategies to do so.
My results clearly highlighted that instructors in peer-facilitated and instructor-facilitated online courses adopted different strategies, with one exception. More specifically, instructors from instructor-facilitated online course communities opted to monitor online discussions closely, intervene when needed, provide ongoing public and private feedback to students, and not have mandatory note guidelines. Instructors from peer-facilitated online course communities adopted opposite strategies, opting for a peer-facilitated discussion with few interventions on their part, choosing to provide more private feedback to students, and implementing mandatory note guidelines for students to follow. Interestingly, regardless of course type or community level, instructors used different discussion formats in their online course communities in hopes of better supporting students’ learning needs, but all students preferred the small group discussion format because they were able to reflect and contribute more to discussions. Current studies suggest that small group discussion format is more likely to contribute to a SoC (Mohamad & Shaharuddin, 2014; Rovai, 2002a; Shackelford & Maxell, 2012). Since instructors adopted different discussion formats, however, it can be argued that the format of group discussions in an online course was not the determining factor for promoting a SoC. Since instructor-facilitated online course communities had higher community levels, produced better student outcomes, and produced more positive online learning experiences for students, I would argue that the strategies adopted by these instructors have been more effective than those in peer-facilitated online course communities. These findings are important because they shed light on possible instructional strategies that can help build communities in online course communities. This is needed since current research fails to provide solid directions, steps, and strategies based on empirical studies (Liu et al., 2007).

To conclude, the current literature does not clearly state the role community plays in
learning. This has frustrated many scholars, who argue that we need to understand the purpose of community to know if it is succeeding. According to Barab, Kling, and Gray (2004), there is much to learn about creating communities for online learning, and doing so is an accomplishment in itself. As these communities continue to be designed and adopted, instructors, researchers, and education developers must question whether they are effective and what they help to accomplish. For this study, high community levels, which were associated with instructor-facilitated online course communities, produced better student outcomes and improved learning. Students suggested that these benefits were the result of their instructors’ increased involvement. On the other hand, low community levels, which were associated with peer-facilitated online course communities, produced poorer student outcomes and only an adequate amount of learning. Students suggested that these outcomes occurred because, although they were able to meet the requirements, they could have learned more if their instructors were more involved. These findings clearly suggest that community, facilitation method, and students’ online behaviours are strongly correlated. More specifically, an online course community is more likely to stimulate student participation and allow students to develop a stronger SoC if it is instructor-facilitated.

Perhaps students feel a greater sense of community in instructor-facilitated online course communities than in peer-facilitated online course communities because they see the instructors as the “binding element” (Garrison, Anderson, & Archer, 1999, p. 96) that helps to create and sustain the community. Instructors have the ability to reduce “social and psychological distance between people” (Arbaugh, 2001, p. 45) and ensure equity. This is the idea that although students sincerely value their peers’ experiences, opinions, and views, students lack background knowledge in the subject matter and their peers probably do not trust what little knowledge they
do have, which was one of Jayla’s reflections. Jayla confronted a peer who thought racism could be removed from society by simply removing the word racism from our vocabulary, which she found to be a troublesome viewpoint (see 4.2.1 Qualitative results). It is possible that more extensive background knowledge in a discipline is simply a necessary prerequisite for effective facilitation and successful community building. Furthermore, instructors have the authority to ensure that all voices and experiences are valued and become part of the discussion, especially those of “the marginalized, the silenced and the ignored” (Kanu, 2003, p. 77-78). In other words, instructors can add content and perspectives that add value to discussions which makes them more engaging. This is probably why students from instructor-facilitated online course communities felt that they had (i.e. those from instructor-facilitated online course communities) and would have (i.e. those from peer-facilitated online course communities) a stronger SoC with the instructor being more involved in the online course community.

Considering these findings, I would argue that online course communities are succeeding in establishing a learning environment in which students develop strong relationships with one another, which not only allows students to deepen and care about their own learning but also encourages them to care about their peers’ learning. Furthermore, to answer my overarching research question—what is the role of community in online learning?—I would argue that the role of community in an online course community is to set up the necessary conditions for students to cultivate relationships so that they are able to interact with others’ ideas and take their learning to a deeper level. Simply put, the purpose of community is to enhance social capital among students so that they learn more together and from one another. Deeper learning can only be achieved when students value each other’s learning just as much as their own.
5.4 Building Effective Online Course Communities

Based on my research findings, it appears, that instructor facilitation contributes more to fostering effective online course communities. More specifically, having a strong and active presence on the part of the instructor, such as intervening in online discussions to provide support, guidance and clarification to students, is related to students’ sense of connectedness and learning. More specifically, instructors who provided ongoing public and private feedback also received reports from their students of having a stronger sense of community (SoC) in the online course community. In addition, instructors who did not implement note requirements relating to the discussions, such as note length, number of notes per week, or mandatory replies received reports from students of enjoying the online discussion as well as having a stronger SoC. It is the idea that students were allowed to shape their own discussions but still could rely on the instructor to provide feedback when needed. Lastly, instructors who actually encouraged and modelled for students to go beyond frivolous comments, standalone notes and niceties were successful in having their students mimic them by sharing and connecting their personal experiences to the course content which was also related to a strong SoC. Overall, this study reveals that an active online instructor is more likely to build effective online course communities.

5.5 Theoretical Connections

5.5.1 Social Constructivism

As previously discussed, in this thesis, social constructivism was adopted as the primary conceptual framework. For Virginia Richardson (2003), social constructivism emphasizes that individuals are able to create new understandings by allowing their ideas to interact with and be
interrogated by others’. This theory “emphasizes the interdependence of the learners and the communal nature of the process of knowledge as negotiated and constructed through dialogue, problem-solving and authentic experiences” (Comeaux, 2002, p. xxvii). In addition, as people experience something new they compare this experience to previous knowledge constructs from past experiences, and then adjust and reshape their constructs (Benbunan-Fich, Hiltz, & Harasim, 2005). The social constructivist theory holds that the learner be involved in constructing knowledge by exploring concepts, solving problems, or expressing ideas using words, which are modified and elaborated on through feedback from others. For this theory knowledge must be “discovered, constructed, practiced, and validated by each learner;” learning is involves struggling on the part of the learner” (Benbunan-Fich, Hiltz, & Harasim, 2005, p.19). Therefore, individual contributions are negotiated among the group through a dialogical process, which allows for shared understanding. Collaboration with peers is important to online learning because it is a process that encourages students to obtain deeper levels of learning and knowledge through shared explorations, goals, and mean-making (Palloff & Pratt, 2007). Furthermore, a positive collaborative culture will only provide learners with ample amount of opportunities to learn from each other, better accommodate and support the diverse learning needs of members, and encourage the expression of all perspectives and opinions (Wilson, Ludwig-Hardman, Thornam, & Dunlap, 2004). In addition, active engagement has been found to lead to the exchange of ideas, information, experiences, and feelings among students in a community (Hiltz, 1998). Therefore, through interaction, dialogue, and collaboration students seem to develop strong bonds that reshape the learning space into a supportive, safe, and comfortable community in which all knowledge pools, views, and experiences are respected, valued, and recognized. Similarly, Paulo Freire (1970) emphasized the importance of dialogue in education. For him,
dialogue was needed for critical thinking and communication because without it true education, that is true learning and teaching, could not be achieved (Freire, 1970). One needs others to learn meaningfully.

5.5.2 Dialogue in Education

According to Freire (1970) dialogue is an important element of education because it generates critical thinking and encourages communication among students and between students and the teacher. He states, “[o]nly dialogue, which requires critical thinking, is also capable of generating critical thinking. Without dialogue there is no communication, and without communication there can be no true education” (Freire, 1970, p.160). The idea is that dialogue nurtures communication and it is through this communication that relationships are created. These relationships allow people to exchange ideas. More importantly, within these relationships all views are valid and there is no one person teaching another or dominating the conversation; the teacher learns from students and students learn from the teachers, which is the process of dialog within education. Thus, the roles of teacher and student are interchangeable and everyone learns together and from one another (Durakoğlu, 2013). Freire (1970) states, Dialogue is not the act of one person providing his or her ideas to another, nor is it an exchange or sharing of ideas to be simply consumed. Dialogue is about creating together; it is not meant to be manipulated by one person to dominate the other. Rather than one dominating ideology being accepted and then deposited into students by the instructor, interaction allows other ideas and knowledge pools to be discussed, shared, challenged, and redefined.

Social Constructivism and Dialogue Based Education are theories that serve as the foundation for online course communities because they follow the idea that deep learning takes place through relationships, interaction, dialogue, and collaboration with others. Results from my
study revealed that participants viewed community as an enabler of learning because it sets the conditions for creating relationships, which leads to deeper learning. The idea is that these relationships become valuable assets because they provide opportunities for students to access other knowledge sets and support which helps them interrogate their own biases and develop a mutual understanding. Taking this approach to online learning has also reconceptualized the way it is viewed by instructors and students.

5.5.3 The Reconceptualization of Online Learning

Currently, distance education is seen as delivery model in which many individuals enroll with the intention of simply updating their skills. Grumet’s (1989) idea of teaching becoming a delivery model is reflected in the current view of distance education. She states, Education becomes passive when the teacher is seen as the gatekeeper of knowledge. The processes of learning and understanding are interrupted and replaced with the act of mimicking the teacher’s views. This is worrisome because when education is seen as a delivery system bringing and depositing knowledge to diverse learners, teaching then focuses on studying such differences. Does this mean that distance education is simply a delivery model “[r]esponding to the need to update and refresh technical skills” (Harting & Erthal, 2005, p. 39)? Does distance education assume that “the teacher’s job is to deliver the goods without messing them up” (Grumet, 1989, p. 16)? With emphasis on developing a sense of community (SoC) in online course communities, which is achieved through relationships, dialogue, interaction, and collaboration, online course communities are reconceptualized from simply being a delivery model for updating skills to a space in which the curriculum can be reformed, reshaped, and reconstructed because students are able to rethink and reflect on the construction of knowledge, so that all knowledge sets are represented and distributed equally and not dominated and
monopolized by one group (Kanu, 2003). In doing so, the curriculum would be more inclusive of all experiences especially of the marginalized, the silenced, and the ignored. This relates to Pinar’s (1978) belief that “[w]hat is necessary is a fundamental reconceptualization of what curriculum is, how it functions, and how it might function in emancipatory ways” (p. 211). The idea is that fostering communities in online course communities allows students to discuss, share, and interact with others, which exposes them to diverse knowledge pools and does not simply relying on the teacher’s knowledge to help them interrogate their own biases and create new understandings.

Therefore, instructors must intentionally set up the conditions for a community to develop online because doing so will allow relationships to solidify. This will expose students to other knowledge sets to be explored, as well as prevent one knowledge pool from becoming more dominant or valuable over another. The instructor’s “role is to promote a friendly environment and community that supports student cognitive learning processes,” and to “establish a leader role in nurturing a sense of community” (Liu et al., 2007, p. 13). This is why the instructor’s presence is important for an online course community.

5.5.4 Distance Education as a Virtual Panopticon

Interestingly, my results revealed that students from instructor-facilitated online course communities were more active online than those from peer-facilitated online course communities. Such a finding has been attributed to having a stronger sense of community (SoC), which encompasses dialogue, interaction, collaboration, and stronger relationships. This finding, however, can also be attributed to Foucault’s Panopticon theory since students from these course types praised their instructors for being involved and knowing when to step-back and stay out. Foucault (1975) builds on Bentham’s metaphor of the Panopticon, a prison which is under
constant surveillance, to represent society. The idea is that the gaze from the security guard in the tower monitors all inmates, at all times, which eventually induces them to monitor their own behaviour even if they cannot see the guard. Foucault (1975) states, the purpose of the Panoticon is to obtain control over inmates mind that assures the continuous power of the guard. For instance, the guard will attempt to arrange things and reinforce certain behaviours in hopes of making the effects of the surveillance permanent, despite the surveillance being discontinued at some moments (Foucault, 1975). The idea is that power needs to be visible, in that the inmate will always see the central tower he is being continuously watched, and unverifiable in which the inmate never knows the moment he is being watched, but is sure he will always be (Foucault, 1975). In relation to students online activity levels in this study, perhaps the students’ knowledge that their instructors were monitoring them in the online discussions, since they would intervene to provide support and clarification, motivated students from instructor-facilitated online course communities to be more active online and to stay on top of the online discussions. Students from peer-facilitated online course communities, however, were unsure if their instructors were monitoring them since their teaching presence was extremely limited in the online discussions, which possibly made these students more comfortable being less active in their online course communities.

5.6 Limitations

Although this research has met its aims, there were some unavoidable limitations that need to be discussed. With many scholars using the community framework or concept it was pointed out that there is a lack of understanding of what the role of community is in online learning. Such a gap piqued my curiosity. Why were instructors trying to establish communities in online course communities if their role was not clarified? What was the attraction? Is it worth
building an online course community? Furthermore, some community frameworks and concepts were originally created for face-to-face courses, yet these frameworks have been applied in distance education, such as the community of practice (CoP) framework and psychological sense of community (PSoC) concept. Taking this into consideration, it is important to recognize how CoPs and the PSoC concept are being used online and for what purposes to simply respect the research endeavours of others, which my dissertation does not investigate.

While instructors and graduate students at my academic institution use Pepper widely, it is not used at any other institution. As a result, this may limit my ability to generalize my findings. For example, not many learning management systems (LMS) provide the option to edit a note online; usually once you post your note it is no longer editable. Pepper, on the other hand, allows users to edit their notes, as discussed by many students in this study. Some students, however, revealed that they would sometimes write their note in a Word document and then copy into Pepper, doing minimal edits from Pepper. This type of behaviour limits the data in that the cluster analysis model only shows this minimum level of editing performed by students.

It is also important to highlight that this research was conducted in graduate online course communities within a Faculty of Education, which has more females attending than males. To add, education as a discipline is taught differently from other disciplines, such as the sciences. For instance, education tends to focus more on collaborative learning. Young and Bruce (2011) conducted a study exploring the relationship between the online course community and student engagement and also compared community and engagement across different disciplines. They discovered that disciplines did matter. More specifically they found that students in education experienced the strongest feelings of a SoC with instructors and classmates and that students in the health sciences had a stronger SoC than students in the business, arts, and sciences. The
specificity of the student population and discipline I drew on in my research will also limit my ability to generalize my findings.

This study’s small sample size of 6 online courses (3 with high community levels and 3 with low community levels), which consisted of 110 participants for the quantitative data set and 12 participants for the qualitative data set, is also important to take into account. This data size allowed me to explore and address my topic in a timely manner, eventually providing rich insights into the role of community for online learning. The small sample size, however, may have impacted the way my results were interpreted. For instance, in Table 2 the classroom community scale (CCS) score for course 4 did not differ significantly from any of the other courses, which is most likely due to the minimal response rate from students on the survey (see 4.1.1 Quantitative results). Having more students participate in the survey could have easily changed the community level for course 4, thus highlighting a limitation of a small sample size.

It is also possible that factors other than instructor involvement contributed to students’ perceptions of community but were not identified or measured due to the small sample size of this study, which prevents me from generalizing my findings.

Furthermore, the scope of this study did not allow for a detail analysis of course content. Further analysis may help shed more light on what students and instructors are doing with the content. It is also possible that course topics also have an impact on the way a SoC is fostered in online course communities; therefore this could be the subject of future research since this study did not explore this area deeply.

As a final consideration, there are certain aspects in a study that students and researchers assume to be true. This is particularly true with regards to surveys. There is usually an overall assumption that all students will answer the survey questions honestly. It is important to
remember, however, that some students may feel uncomfortable being too honest when answering certain questions.

5.7 Implications for Practice

The aim of this study was to address the lack of empirical research on the role of community in online learning in hopes of identifying specific strategies that help to foster effective and strong communities. This was accomplished by investigating students’ online activities in weak and strong online course communities, and by interviewing both students and instructors to gain more insight and a better understanding of their online experiences in each course type. The study revealed practical implications for instructors, students, and educational developers, which are discussed below.

Instructors

Accordingly, the first major practical contribution of the present research is that it provides much needed empirical data on the instructional strategies (see, 5.4 Building Effective Online Course Communities) that help to foster a strong sense of community (SoC) in an online course community. Such information is important since other or previous (pick one)studies (Bonk, Wisher, Nigrelli, 2004; Lock, 2007; Liu et al., 2007) have suggested that there are no clear directions, accepted sets of rules or strategies, nor clearly defined steps based on empirically derived research that illustrates how to develop effective online communities. Furthermore, this lack of direction and consensus has only caused instructors to argue that fostering a SoC is too time-consuming and thus question its need and role for online learning (Shapiro & Hughes, 2002; Liu et al., 2007). Having a set of empirically derived instructional
strategies provides instructors with guidelines to tap into and adopt when teaching online and attempting to foster an effective and positive community.

A second important implication of my study derives from the finding of students performing different online activities based on their course type and community level (see, 4.3 Research Question 2: Pepper Logs). The limited amount of exiting research exploring how a strong SoC, which is associated with instructor-facilitation, and a weak SoC, which is associated with peer-facilitation, impacts student outcomes, emphasizes the importance of the current findings. The study findings also heed Hew’s (2010) call for more research in “measur[ing] the impact of peer or instructor facilitation on student outcomes such as the number of their postings” (p.36). Knowing which student activities promote and reflect a stronger SoC allows online instructors to gain a better understanding of what activities to encourage. This is important information for instructors when trying to determine whether community, camaraderie, and a positive online learning experience has been established in their online course communities.

Students

A third implication stems from exploring what the role of community is in online learning. Findings suggest that students had a clear understanding of what community is and how it supported their learning. Students emphasized that this understanding of community made it more valuable to them in that they were willing to put in the extra effort to help foster it (see, 4.3. Research Question 3: Community and Online Learning). Knowing students would be willing to help establish a community, once they understood its role, is an important finding because it further reinforces the idea that students will harness the necessary interface tools and activities to further promote community. Research suggests that when students lack a clear understanding of how community impacts their learning they are more resistant to participating and fostering it
(Brown, 2001; West, 2010). According to West (2010), “[s]tudents usually have plenty of experience with online social technologies, but they lack understanding about how to use these tools and methods for course learning” (p. 69). Nevertheless, West (2010) developed a guide based on previous research and practice to help inform students about communities. My research finding builds on the guide developed by West (2010), in that it offers detailed reflections from students on the benefits communities offer and how they can help foster a community, which further justifies helping to build such communities.

**Education Developers**

The fourth implication focuses on participants’ views on a SoC in face-to-face courses and online course communities. Interestingly, students and instructors from instructor-facilitated online course communities had different views on whether a community could be fully fostered in an online course community compared to students and instructors from peer-facilitated online course communities. Specifically, participants from instructor-facilitated online course communities believed that a community could be fostered online despite the limited social cues, which could be supplemented with specific strategies. Whereas participants from peer-facilitated online course communities believed that it would be difficult to foster a community online due to the limited social cues. Knowing this information is necessary for instructors and educational developers because it sheds light on the importance of instructional design with regards to designing online course communities with strong communities. Various scholars have attempted to illustrate purposeful designs for community building (for example, Conrad, 2002; Kanuka, 2002; Song et al., 2004), but have found that doing so is still a challenge (Kanuka & Anderson, 1998; Thompson, 2003; Song et al., 2004). Nevertheless, intentionally designing an online
course community to promote a strong SoC is crucial because “designs bring forth what would not come naturally” (Krippendorff, 2006, p.24).

In a traditional face-to-face course, many instructors have an idea of what types of interactions and strategies help meet learning objectives and support students’ academic and social needs. However, teaching online is different than face-to-face instruction and some instructors may struggle with sorting out what strategies and interactions are effective in an online course community. Face-to-face teaching approaches may be less effective and beneficial online (Horspool & Lange, 2012). If instructors and educational developers are able to understand which interactions lead to feelings of isolation and alienation they could then counter such interactions by modifying instruction and providing the appropriate support to maintain a strong SoC among students. In turn, this may aid in minimizing the high attrition rates seen in online courses. Efforts to not intentionally design an online course with effective community-building opportunities and strategies will only make it difficult for online instructors and educational developers to provide a positive online learning experience for students.

Although this is a small-scale study, it does provide fascinating and thought-provoking findings that makes a valuable contribution to informing the practice of online teaching and learning as well as instructional design. More specifically, findings suggest that the implementation of specific strategies and online activities are not enough for students to develop a strong SoC and experience positive and meaningful learning (Garrison and Cleveland-Innes, 2005). These strategies and activities need to be purposefully promoted, encouraged, and nurtured to foster and maintain a strong SoC. Not doing so could be detrimental to the online learning experiences of students.
5.8 Areas for Future Research

Recommendations for future studies include exploring more specific aspects of a sense of community (SoC) within online learning such as discussion formats and SoC, culture and SoC, course length and SoC, and gender and SoC. Within this study all students shared a preference for small group discussion formats revealing that it gave them more time to reflect and allowed them to participate more deeply in discussions. Instructors, however, had no preference and chose the format they believed best supported students’ learning needs. It would be interesting to know which specific small group discussion format truly promotes a SoC among online learners. Knowing this would be helpful to instructors because it would provide them with a discussion format that would most likely help them to stimulate, promote, and foster a SoC within their online course community. This is needed since there are a limited number of strategies, guidelines, and directions that clearly illustrate how to foster a community online.

The role of cultural differences and online learning has been widely investigated within the literature (Graham, & Mayes, 2007; X. Liu, S. Liu, Lee, & Magjuka, 2010; Uzuner, 2009; Rogers, Shattuck, 2005) but there are few studies exploring the relationship between culture and a SoC. Consider participant Maggie, who was from a peer-facilitated online course community. She revealed that she participated minimally because she was an English as a Second Language (ESL) student and was uncomfortable writing. She was also unsure her peers would understand her cultural experiences, so she opted to stay silent and shied away from the discussion forums. Since peer-facilitated online course communities were associated with low community levels in this study it would be informative to know if having a stronger SoC would have made Maggie more comfortable in sharing her cultural experiences despite being an ESL student. Future research should explore whether having a strong SoC supports students’ cultural differences in
an online course community, as such findings would determine if a SoC is an asset in creating an environment that values all experiences and ideas. This would be helpful to instructors because they would then understand the possibilities a SoC holds in addition to producing better student outcomes.

The majority of the online course communities used in this study were fall courses with the exception of one which was a summer course. Taking this into account, future research could also explore if it is possible to create a SoC in online summer course communities. For instance, does course length affect whether a SoC is fostered online or not? The online summer course community in my study produced a weak community level, however this was only one course and therefore did not provide sufficient evidence to make further claims. Investigating whether a correlation exists between course length and community level would provide online instructors with the necessary information concerning the possibilities of creating a SoC in online summer course communities. Such information could reshape how instructors react and feel if a community is not as effective in online summer course communities.

Another useful study involves conducting a case study on online course communities. This will allow the researcher to explore and analyze online notes at a deeper level as well as engage in a continuous dialogue with instructors and students throughout course, as it is happening. Such data could provide more details of how a SoC was formed.

Lastly, this study was conducted within a Faculty of Education, where females are usually in the majority. According to previous studies, females tend to favour learning environments that place emphasis on relationships and cooperation rather than competitiveness (Belenky, Clinchy, Goldberger, & Tarule, 1986). Additionally, it was found that female students perceived community differently than their male peers (Rovai & Baker, 2005, and, as a result,
they reported higher levels of a SoC (Shea, 2006) and also believed that they learned more within a community (Rovai & Baker, 2005). Future studies should add to the discussion of gender-related differences in online learning and delve deeper into exploring the differences between female and male learners’ views on community. For instance, do male learners see community as helping or hindering their learning? Does a SoC put male learners at a disadvantage? Gaining a better understanding of these differences in views will help instructors better cater to students’ learning needs and discourage them from assuming that all learners prefer or will benefit from a SoC. Overall, more research is needed to understand how a SoC impacts and reshapes different aspects of online learning.

5.9 Personal Reflection

As distance education becomes more popular, the quality of online learning will be more extensively scrutinized. Online learners need to feel connected and valued in their online course community(s) so that they are willing to share their personal experiences and feel comfortable negotiating and challenging ideas with their peers. As discussed in this dissertation, some research studies have indicated that if students do not feel valued or comfortable learning online, they will then become disconnected and isolated from the course. As a result, they will share less information and become less motivated to participate. Although research suggests that building a community will partially help to overcome these obstacles, other studies have indicated that if online instructors and learners do not understand the role of community in online learning they may be unwilling to put in the time and effort to develop it. Furthermore, for a community to be developed instructors need to have a clear understanding of the best interactions and strategies to use, but there is a lack of consensus among scholars. This lack of consensus highlights a gap in the literature and further emphasizes the need to identify the role of community in online
Current studies focusing on community have indicated that with a sense of community (SoC) students’ participation increases and they feel that they are learning more. Other studies suggest that a community reduces feelings of isolation and disconnection and promotes interactivity and collaboration among online learners, thus giving everybody a chance to participate in the discussion and share their views. There seems to be many studies focusing on the benefits of community, on the structure of community which is illustrated through various community models, and on the experience of community. There are few empirical studies, however, exploring how this all relates to the role of community in online learning, which has frustrated many researchers. If instructors and students are unaware of the role community plays in online learning then they will question its value and purpose. As discussed in this paper, various studies have already begun to show students and instructors resisting community-building because they do not understand its role, they think it is too time-consuming, there are minimal directions and strategies for doing so, or because they find the online course community too limiting for properly creating a community online.

This study is frank in examining what is known about community, such as the various community models, the research findings of community and learning, the different community scales used to measure community, the challenges of community-building, and the controversy surrounding community. More importantly, my examination of the literature allowed me to understand what researchers are attempting to accomplish with community. My research study contributes to the current literature because it offers a possible explanation of the role of community in online learning and highlights the educational value of community. As some learners in other studies have expressed their concerns about online learning not being as good as
face-to-face classes and instructors have worried about the loss of personal contact between them and their students. Online learning has fallen into a trap of becoming a delivery model. Personally, I think it is this type of teaching model which has led to feelings of isolation and disconnection among some online learners, eventually contributing to the high attrition rates. Many instructors know that teaching is not simply about delivering knowledge to learners; it is more complex involving many layers because it requires guiding the student to appropriately question, explore, and create constructive views about the content being discussed. Having students demonstrate such learning behaviours, however, requires instructors to intentionally design and teach courses in a certain way that cultivates relationships and establishes a SoC.

As my findings suggest, fostering a SoC would allow the professor and students to build camaraderie, even in the absence of various social cues, which will lead to deeper and more meaningful learning because everyone can learn from each other’s experiences, differences, and diverse knowledge pools. This will not happen quickly, however, because it takes time to build a community in an online course community. It is argued that a SoC is needed in an online course community because without it online learning stays cold, impersonal, and dare I say boring. Having strong relationships, learning from others, and having that unpredictable and diverse dialogue reshapes the online learning experience by humanizing it. Teaching online is no longer about delivering the goods to students so that they can update their skills and move on. Teaching is about creating the conditions for relationships to flourish with the hope that students will see the value of learning from and with each other. It is not only about teaching to the mind but also about teaching to the heart. As Freire always maintained, “education has as much to do with the teachable heart as it did with the mind. Love is the basis of an education that seeks justice, equality, and genius” (Kincheloe, 2008, p. 9).
APPENDICES

Appendix A: Interview Protocol Form for Student Interviewees

Interview Protocol Form (Students)

Thesis: Exploring The Role of Community in Online Learning

Date __________________________
Time __________________________
Location ________________________
Interviewer ______________________
Interviewee ______________________
Consent letter signed? ____

Notes to interviewee

Thank you for your participation. I believe your input will be valuable to this research and in helping grow all of our professional practice.

Confidentiality of responses is guaranteed

Approximate length of interview: 60 minutes, 18 major questions

To facilitate my note-taking I will be recording our conversation.

Purpose of research:
Critics argue that there are no clear directions or empirically derived research that illustrates how to develop effective online communities.

While there is a growing body of literature emphasizing the importance of building learning communities in online courses, clear directions based on empirical studies in this area are lacking and there is neither an accepted set of rules or strategies (Lock as cited in Liu et al., 2007) nor clearly defined road maps or steps in the development of online communities (Bonk, Wisher, & Nigrelli as cited in Liu et al., 2007). In addition, the research on the effects of online communities on learning is mixed (Liu et al., 2007). A few scholars criticize existing research for failing to demonstrate
the role of community in learning through rigorous empirical studies (Liu et al., 2007).

My research is concerned with this gap in the literature. The lack of direction and consensus concerning community in an OLE only motivates instructors to question the need and role of community. There needs to be a clear understanding of the role of community in online learning.

**Interview Questions**

**Introductory Questions**
1. How would you define a sense of community in a course?  
   *Response from Interviewee:*
   *Reflection by Interviewer:*

2. Do you think it is possible to create a sense of community in an online learning environment?  
   *Response from Interviewee:*
   *Reflection by Interviewer:*

**Approach to Learning**
3. Do you think a sense of community makes a difference in how and what you learn online?  
   *Response from Interviewee:*
   *Reflection by Interviewer:*

4. What are you trying to achieve when you are writing a note?  
   *Response from Interviewee:*
   *Reflection by Interviewer:*

5. Did you reread notes? Why or why not?  
   *Response from Interviewee:*
   *Reflection by Interviewer:*

6. Did you revise any notes? Why or why not?  
   *Response from Interviewee:*
   *Reflection by Interviewer:*

7. Did you rely on your peers? How so? Why?  
   *Response from Interviewee:*
   *Reflection by Interviewer:*

**Instructional Strategies**
8. What instructional strategies helped you to feel comfortable online and more motivated to participate? Why? Are there any strategies that isolated you?
Response from Interviewee:  
Reflection by Interviewer:

9. What types of assignments did your instructor give you that impacted your learning? Please give examples.
Response from Interviewee:  
Reflection by Interviewer:

10. Do you prefer your instructor to be hands-on with online learning or to take on more of a facilitator role? Why?
Response from Interviewee:  
Reflection by Interviewer:

11. Overall do you think your online instructor was successful in fostering a sense of community in your online course? Why or why not?
Response from Interviewee:  
Reflection by Interviewer:

Peer-to-Peer Interactions

12. Did you enjoy the online discussions? Why or why not?
Response from Interviewee:  
Reflection by Interviewer:

13. Do you think having online discussions affected your learning? Why or why not?
Response from Interviewee:  
Reflection by Interviewer:

14. What types of peer-to-peer interactions helped foster a sense of community for you?
Response from Interviewee:  
Reflection by Interviewer:

15. Did these interactions make you feel more connected to your peers? How?
Response from Interviewee:  
Reflection by Interviewer:

16. Did you interact with your peers privately? If yes, for what purposes? If no, why not?
Response from Interviewee:  
Reflection by Interviewer:

Concluding Questions

17. For you, what’s the purpose of a sense of community for online learning?
Response from Interviewee:  
Reflection by Interviewer:

18. Any other thoughts or comments you would like to share?
Response from Interviewee:
Reflection by Interviewer:

Reflection by Interviewer
• Closure
  o Thank you to interviewee
  o Reassure confidentiality
  o Ask permission to follow-up
  o Documents obtained
  o Other topics discussed
  o Post interview comments and leads
Appendix B: Interview Protocol for Instructors

Interview Protocol Form (Instructors)
Thesis: Exploring The Role of Community in Online Learning

Date __________________________
Time __________________________
Location ________________________
Interviewer ______________________
Interviewee ____________________
Consent letter signed? ____

Notes to interviewee
Thank you for your participation. I believe your input will be valuable to this research and in helping grow all of our professional practice.

Confidentiality of responses is guaranteed

Approximate length of interview: 60 minutes, 18 major questions

To facilitate my note-taking I will be recording our conversation.

Purpose of research:
Critics argue that there are no clear directions or empirically derived research that illustrates how to develop effective online communities.

While there is a growing body of literature emphasizing the importance of building learning communities in online courses, clear directions based on empirical studies in this area are lacking and there is neither an accepted set of rules or strategies (Lock as cited in Liu et al., 2007) nor clearly defined road maps or steps in the development of online communities (Bonk, Wisher, & Nigrelli as cited in Liu et al., 2007). In addition, the research on the effects of online communities on learning is mixed (Liu et al., 2007). A few scholars criticize existing research for failing to demonstrate the role of community in learning through rigorous empirical studies (Liu et al., 2007).
My research is concerned with this gap in the literature. The lack of direction and consensus concerning community in an OLE only motivates instructors to question the need and role of community. There needs to be a clear understanding of the role of community in online learning.

**Interview Questions**

**Introduction Questions**
1) How would you define a sense of community?
*Response from Interviewee:*
*Reflection by Interviewer:*

2) Do you think it is possible to create a sense of community in an online learning environment?
*Response from Interviewee:*
*Reflection by Interviewer:*

**Instructional Strategies**
3) What online activities do you implement to help students feel comfortable online (i.e. icebreaker activities)? Please give examples.
*Response from Interviewee:*
*Reflection by Interviewer:*

4) What types of assignments do you give to make learning more communal (i.e. independent, collaborative, reflective, or creative)? Please give examples.
*Response from Interviewee:*
*Reflection by Interviewer:*

5) What instructional strategies do you think helps students feel more comfortable online and more motivated to participate? Why?
*Response from Interviewee:*
*Reflection by Interviewer:*

6) What instructional role do you prefer and adopt when teaching in online learning environment?
*Response from Interviewee:*
*Reflection by Interviewer:*

7) How has a sense of community in an online learning environment impacted or reshaped your pedagogy?
*Response from Interviewee:*
*Reflection by Interviewer:*

**Peer-to-Peer Interactions:**
8) How do you know when students are enjoying the online discussions?
Response from Interviewee:
Reflection by Interviewer:

9) What types of peer-to-peer interactions reveal that students are learning?
Response from Interviewee:
Reflection by Interviewer:

10) What types of peer-to-peer interactions help foster a sense of community?
Response from Interviewee:
Reflection by Interviewer:

11) Do you think these interactions help students to feel more connected to each other?
Response from Interviewee:
Reflection by Interviewer:

12) How would you describe the relationship, if any, between private messaging and community-building?
Response from Interviewee:
Reflection by Interviewer:

Interface Features:

13) Do you use any features to support your teaching? If yes, which ones? If no, why not?
Response from Interviewee:
Reflection by Interviewer:

14) For each feature you used please explain for what purpose?
Response from Interviewee:
Reflection by Interviewer:

15) Did these features help to foster a sense of community for you? If yes, how?
Response from Interviewee:
Reflection by Interviewer:

16) Did these features help you to communicate better with your students? How?
Response from Interviewee:
Reflection by Interviewer:

Closing Questions:

17) Do you think the instructor needs to participate more or less to create a community of learners in an online environment? Why?
Response from Interviewee:
Reflection by Interviewer:

18) Is it necessary to foster a sense of community in an online learning environment?
Response from Interviewee:
Reflection by Interviewer:

19) Do you think you have been successful in fostering a sense of community in your online course? Why?

Response from Interviewee:

Reflection by Interviewer:

Reflection by Interviewer
- Closure
  - Thank you to interviewee
  - Reassure confidentiality
  - Ask permission to follow-up ______
  - Documents obtained
  - Other topics discussed
  - Post interview comments and leads
Appendix C: Transcription Legend

<table>
<thead>
<tr>
<th>Mark-up</th>
<th>Purpose</th>
</tr>
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<tbody>
<tr>
<td>…</td>
<td>Content was deleted</td>
</tr>
<tr>
<td>[ ]</td>
<td>Content inserted to clarify or convey participants’ body language</td>
</tr>
<tr>
<td>Underline</td>
<td>Used to highlight the content participants emphasized during the interview.</td>
</tr>
<tr>
<td>,</td>
<td>To illustrate that participants are quoting a peer or discussing their own thoughts while they were in the situation at the time.</td>
</tr>
</tbody>
</table>
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