Using Self-Assessment for Blended Learning

By

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Abstract

This study presents an examination of a self-assessment practice and online asynchronous conversations within an undergraduate teacher-training course. The course was a blend of classroom learning, in-field pre-service teaching and online learning with n = 12 participants. The aim of the study was to examine the self-assessment practice using mixed methodologies. This required a two-part research design and data collection. The first part involved quantitative data collection of two assessment tools using a Wilcoxon Rank Test to determine reliability among two raters. Percentage agreement of both raters, the researcher and participants, were also analyzed. The second part involved thematic analysis to investigate evidence of meta-cognitive and collaborative learning schemes in the self-assessment survey (SAS). The study reported positive benefits of self-assessment in combination with online asynchronous conversations. Implications for future research and limitations of the study are discussed.

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Introduction

Working as a teaching and research assistant during my teacher training I graded and moderated a number of online asynchronous discussions. I was asked to read through the online conversational threads by a teacher educator with a research background in educational technology.   These online discussion threads will be referred in this study as 'asynchronous conversations'.   In many cases, online conversations are incorporated into the classroom as a complementary form of blended learning.   For this reason, online conversations are often used to further discussions beyond the physical limitations of the actual classroom.

Grading online conversational activities along with online portfolios became my part-time work as a teaching assistant (T.A). It became evident that the evaluation of this type of assignment was time consuming.   Reading, filtering and categorizing online conversations took an extraordinary amount of time, especially when paired with other classroom assessments. Every term, filtering through each online group required countless amounts of hours reading and "listening" to numerous conversations about education, learning and teaching.

The online conversations formed a support community for pre-service teachers and these discussions took place at various times and locations around the province of Quebec. Within the conversations, I learned a lot about how students communicate among their peers especially when in stressful situations like a work placement. I learned about how pre-service teachers bridged theoretical and practical knowledge. In this sense, the conversations also formed a unique body of messages where posting informal responses blended with more formal theoretical knowledge learned during teacher training.

As mentioned, my work as an evaluator of online asynchronous conversations taught me a great deal about the ways peer communicate through discussion and collaborative learning; the ways it allowed students to explain, discuss and reflect on their experiences as pre-service teachers; and, the ways that they used informal and formal ways of communicating to each other for the purpose of learning. The conversational nature of the activity presented by these small learning communities was based on a natural framework that emphasized learning from each other. It also combined elements of reflective learning that took place while they looked back on their experiences and when developing strategies for future practice. This overview of their learning created new pathways from that retrospective view.

This type of reflective and collaborative activity stimulated a growing need for the instructor of the course and myself (in the role of T.A.) to create an assessment where the students were able to have some feedback on the process. The group conversations were generally well attended, perhaps due to a participation and content score associated with their final term grade. I began to spend more time grading these discussions, using a well-constructed evaluation tool developed by the instructor of the course and myself. Using the evaluation tool made me consider whether the assessment of this assignment could be done more efficiently by involving students in their own evaluation.

Given the desire to focus on quality, grading efficiency and student participation, the aim of the evaluation design was to consider using a self-assessment. This involved designing the assignment as a two-part process, the conversations themselves counting as a first phase and the self-assessment of the dialogues being the second phase. The intention was to create a more democratic type of evaluation and one that suited a natural, conversational activity based on peer and self-directed learning.

The following study is based on a self-assessment practice that involved a blended learning environment. The aim was to explore whether self-assessment tools

could be used in lieu of a traditional instructor evaluation. If proven then this investigation may reduce the grading time of the online assignment and allow for student participation in the evaluation process. It set out to investigate whether self-assessment tools were reliable as a form of evaluation, and to observe how the practice aligned with theories on self-assessment and online learning.

Chapter 1: Online Learning, Asynchronous Discussions and Assessment

1.1 Introduction

This chapter presents the history of online learning and in particular situates how asynchronous conversations developed as an online assignment. It aims to illustrate how this type of online assignment is based in peer-generated content creating a platform for collaborative and reflective learning. Further sections of the literature review explore how asynchronous conversations are graded and discuss its assessment as an instructional practice. The review extends to discuss whether asynchronous conversations are used in combination with self-assessments and how such alternative evaluations are used as a form of meta-cognitive and self-directed learning that are applied to online conversations. The review suggests that the pairing of the assignment and evaluation should be considered and proposes a need to investigate how self-assessments function.

1.2 Online Learning

Since the early 1990s academic institutions have used a variety of technological tools to facilitate distance and correspondence courses. The story of online learning emerged from a continuously growing demand for correspondence and distance education. This type of content delivery was originally offered as a possibility for adults to complete or further their education at a distance from the University institution. Correspondence degrees and courses have been changing from distance to online education. This subsequently increased the possibilities for learning and instruction, especially for those at geographic distances from their ideal program.

In the past, online courses have used a variety of methods to deliver education at great distance. For most institutions this was done through email and the national

post mail system, although some early achievers were using networked computing to create virtual learning environments. For most, however, content and projects were exchanged in paper format. The addition of the World Wide Web in 1992 contributed to the evolution of correspondence and distance education as the possibilities for communication, human interaction and multimedia grew.

As the World Wide Web expanded, the correspondence education model evolved to incorporate new forms of communication and collaboration that included access to the Internet and a new, growing repository of information and knowledge. 'Web-conferencing' emerged as early as the 1970's and referred to connecting students and instructors synchronously through 'live' video at a variety of geographic locations. This required computers to network so that users were able to connect and communicate.

Innovators in web-conferencing established structured ways to have group conversations, exchange ideas, knowledge and information for a type of "collective intelligence system" (Hiltz & Turoff, 1978, p. 43). Early theorists in online learning attempted to expand collective problem solving, collaboration and discussion. They deliberately worked to explore and improve on this form of online education as they observed the potential for this type of learning delivery system. Some would argue that the networking of computers for the purpose of teaching and learning has been revolutionary (Harasim, 2000).

Computer-conferencing developed as the core of online learning. Email was also used frequently to exchange information, projects and work. Email allowed students and instructors to connect around the globe making this type of information delivery ideal for networking and communicating. In the 1980's and 1990s, special initiative projects such as RAPPI (Canadian Reseau d'Ateliers Pedagogique Pilote) and ICLN (InterCultural Learning Network) linked students from a variety of countries around the world to each

other, creating a communication web of networked classrooms.

> The research question was whether writing to real audiences on the network improved writing. Controlled studies of cross-classroom collaboration showed an increase in student writing skills (Riel, 1996), and having an audience was also found to be more motivational than writing for assignments only (Cohen & Reil, 1989; as cited by Harasim, 2000, p. 44).

These projects observed and explored the effects of networks on curricular learning.

One of the first fully online courses was piloted by the WBSI (Western Behavioral Sciences Institute) in 1981 as a set of mini-courses meant to facilitate an executive training program. Administrators of the program examined many difficulties and failures reported by faculty instructors of the piloted courses. A significant reoccurring issue developed in regards to the traditional lecture style of content delivery. Feenberg (1993), an online learning theorist, observed that the traditional lecture was limited in online learning as students and instructors complained that it was too lengthy with low-level student participation and engagement. As a result of this trial by error approach to online learning, the faculty of the program developed structured online discussions, in essence creating a new approach to online learning referred to in this study as *asynchronous conversations*.

Over time the demand for online learning from both instructors and students has expanded at many post-secondary institutions. In the last decade, the growth of online learning has expanded significantly and the sophistication of computer networking has allowed for a greater volume of communication and collaboration. These two fundamental aspects make online learning appealing for course development. This is complemented by recent market research that shows the current growth of online courses is still expanding in the U.S. by about 5.5.% yearly, surpassing the overall growth rate for higher education (Eduventures, 2012). This statistic is important as the acquisition and retention of students is currently a growing concern for most institutions and programs at the post-secondary level. Online learning courses do expand recruitment efforts as institutions are able to reach beyond their physical radius to greater geographic distances. Many institutions also find classroom infrastructure

challenging with costly price tags for updated equipment, adequate staff for technology support, new buildings and laboratories. All these factors make online learning economically appealing for universities and colleges.

The increased demand for online courses and the expansion of university recruitment into greater geographic markets drove institutions to make online courses available. This evolving influence on the education market potentially changed the delivery system of many courses and certainly influenced the design of online programs and courses. But what kind of impact does online learning have on instruction? Early researchers like Feenberg (2003) observed a need to re-direct instruction from the lecture-based model to a conversational model to increase participation and engagement among online learners.

As instructional practices in online learning evolved and changed, a wider amount of disciplines used it to accommodate the various programs and learning outcomes. What many educators favoured about online learning methods was its ability to reach the community of learners. The group dynamic was generally productive for learning as it demonstrated student-generated, peer-based and self-directed content.

Currently, online learning and its pedagogical content are delivered differently depending on the institution. Some instructional practices do resemble the traditional classroom format for teaching and learning. Entire programs have been replicated in online formats to produce the identical learning experience of the in-class program. Instruction of online courses can be a mirror image of face-to-face courses using lecture notes, readings, quizzes, term papers and exams. Reeves, Herrington and Oliver (2004) argue that instructors require substantial developmental support to increase pedagogical innovation for online instruction.

Some studies add that pedagogical design does affect engagement, and, that the participation of learners and the need for innovation in learning design is essential for development (Herrington, Reeves & Oliver, 2004; Feenberg, 2003). Certainly, student participation and engagement in online learning seems essential to the contribution of content and instruction. This makes online learning unique due to volume of student contribution and the collaboration of information produced by the learning community through text-based conversation.

1.3 Asynchronous Conversations

Asynchronous conversations gained appeal through the development of online learning by providing students and instructors with an anytime and anywhere form of instruction. The students read through messages and contribute 'asynchronously'. This functionality allowed students and instructors freedom from the classroom while also requiring them to engage and participate actively. One of the advantages of this learning format was and still is its ability to facilitate conversations that allow students to have an equitable 'voice'. An additional benefit is that it allows for participants to reflect on their contributions and the messages of others given its out of synch nature. The reflective process as well as the publishing process makes asynchronous discussions appealing for instruction (Lou, Bernard, & Abrami, 2006).

The design of online asynchronous conversations and its impact on instruction is a part of an emerging story of new models, innovations and research. Early users of asynchronous conversations found that in comparison to classroom discussions there was evidence of increased student generated content that was more evenly distributed among participants. In one example of early asynchronous discussion design, the initial conversation was launched by the instructor but the students contributed 85-90% of the discussion. Harasim (2000) observed that the content of these interactions showed active questioning, elaboration and debate whereby students built on the ideas of others, expanded their understandings and debated points of interest.

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The use of asynchronous conversations was developed into common practice in fully online and blended learning environments. Some critiques of online conversations say that they are subject to time delays and that text-based discussions generate large volumes of written text that can be overwhelming for avid readers and writers. Investigating ways to design these discussions is suggested as valuable for instructors using online conversations.

Using conversations as a form of instruction is not a new concept, but rooted in our language history. Humans have continuously engaged in peer-to-peer networking and inquiry education through communication. Communicating through dialogue is our oldest literacy practice and online discussion platforms transfer this literate practice into text, paired with visual and auditory representations. Online learning manifests social learning communities and makes connections visible and accessible for interaction, review and reflection.

1.3.1 Collaborative Learning

Advocates of online and asynchronous learning networks value group thinking as a process for collaborative problem solving (Snyder, 2007; Hiltz, R., Turoff, M., & Harasim, L., 2007; Kanuka and Anderson, 1998). The asynchronous conversation platform allows students to consider more information, use self-regulatory evaluation and build opportunities to learn from others. Many value these online conversations for showing examples of how students coordinate ideas to accomplish a task. Typically good performance in students is often triggered by the nature of the task, how motivated students are to participate in the task and the external and intrinsic rewards for completing the task (Benbunan-Fich & Hiltz, 1999).

Asynchronous conversations contribute to collaborative learning by generating a variety of 'perspectives', providing opportunities for peer-generated feedback. In this

sense, asynchronous conversations are a platform for learning and progress, to grow knowledge stemming from peer-to-peer networking and discovery. Proponents of using conversation in online settings suggest that asynchronous conversations offer new opportunities for learners to discuss content as tacit knowledge about a subject becomes explicit (Snyder, 2007; Baran and Cagiltay, 2010).

Peer learning and discovery is advocated by research from an assortment of disciplines (i.e. psychology, education, ethnography). Using conversation as a form of learning is suggested to motivate learners by increasing interaction among their peers (Pintrich, 2003). Creating a way for students to build on content knowledge through social learning communities is strongly linked to knowledge retention and motivation (Stahl, 2005). Early educational psychologists such as Bandura (1975) reported on the benefits of peer observation as a method of discovery learning. This may explain why an early study on computer-assisted learning showed an increase in writing skills when participants were motivated by the presence of an external audience (Harasim, 2000).

Further to the research on asynchronous conversations as being beneficial for discovery learning among peers, Gee (1990) adds that both implicit and explicit language development is important for knowledge construction and meaning making to take place. Providing small discussion communities allows students to converse about experiences, formulate and observe a variety of interpretations, and build on implicit information that is typically shared around a 'table'. Small group discussions are also able to collectively analyze explicit theoretical knowledge that is both educative and transformational. Research suggests that meaning making is a collaborative activity (Piaget, 1954; Bandura, 1972; Pintrich, 2003). Web-based learning environments such as online asynchronous conversations help communities work on collaborative learning (Hiltz, R., Turoff, M., & Harasim, L., 2007). Computer supported collaborative learning environments provide a context for students to share and communicate while working on their collaborative abilities.

1.3.2 Instructional Practices

This section explores the instructional practices of asynchronous conversations, and, how they are linked to design and learning outcomes. Online conversations have a range of uses and purposes within an online or blended course depending on what the instructors want from the activity. For example, instructors use online conversations as a one time activity, or, they may use it as the foundation of their course. Research on how the design of asynchronous conversations affects student engagement and participation is growing. Some studies suggest that the design of the conversational assignment as well as the role of the moderator influences the rate of participation (Dennen, 2005; Bonk & King, 1998; Kanuka & Anderson, 1998). Designing roles for students or organizing them into debate groups is one example of how the set up of the online task shapes the discussion and participation.

There is also research to support that content mastery requires an interactive, multimodal learning approach (Snyder, 2007) inherent in the instructional design. This incorporates using interactive moments with content for the purpose of understanding it.

> Beldarrain (2008), like Moore (1989), believes that instructional design models must be adapted to integrate various types of interactions, each with a specific purpose and intended outcome. It is also necessary to choose the appropriate technology tools that foster collaboration, communication and cognition. Furthermore, instructional design models must anchor student interaction in the instructional objectives and strategies that create, support and enhance learning environments (Abrami, Bernard, Bures, Borkhovski & Tamim, 2011, p.88).

This supports the concept that asynchronous conversations build on the coding of language to include other forms of communication such as "diagrams, pictures, video, gesture, speech, and sound" (Kress and Van Leeuwen, 1996, 2001; Jewitt and Kress, 2003 as cited by Snyder, 2007, p.403). Abrami et al. (2011) suggests using online

conversations as a method for increasing communication by incorporating elements of audio and video functions.

Another component of instructional practices and asynchronous conversations is the interaction of the instructor. Some research indicates that the quality and quantity of interaction is affected by the design of the learning activity and by the presence of the instructor (Dennen, 2005; Anderson, Rourke, Garrison & Archer, 2001). For this reason, instructors will often provide guidelines within the online conversations at the onset of the course to create the framework for discussion to take place. Providing structure and some form of guidance seems critical to the success of participation and the quality of discussion among participants in computer-supported collaborative environments (Conrad, 2002; Bonk & King, 1998). Dennen (2005) suggests that more research into the context of discussions and the interactive characteristics should be investigated to create a more complete understanding of the learning delivery. This explains why some research on asynchronous conversations looks at the 'design' of the task, describing the 'context' upon which the discussions are based.

While investigating the role of teacher presence within discussions is important, the assessment and evaluation of online interactions is also valuable to its intended design.

> Nonetheless, there were deadlines of both an explicit and implicit nature, and these deadlines had a clear effect on when students participated in discussion and, in turn, to what degree the discussion developed into an actual dialogue (Dennen, 2005, p. 139).

Dennen (2005) found that within the design of the evaluation process, the assessment of asynchronous conversations does contribute to the way that participants engage and interact. In her study comparing nine online courses using asynchronous conversations, participants were more engaged when they knew their dialogue and their interactions were being monitored, read and assessed (Dennen, 2005). While creating an imposed structure may limit the creativity of contributions and informality in the conversations,

Dennen (2005) found that participants tended to interact in greater depth when a grade for the activity was assigned.

1.3.3 Assessment

There are a limited number of studies on the assessment of online conversations. There may be fewer studies on the evaluation of asynchronous conversations as they are still emerging as a form of online and blended learning. It is also possible that instructors find quantitative counting messages as an easier approach and less problematic. There are relatively few studies that focus exclusively on asynchronous conversations and assessment, and even fewer studies presented on alternative assessments such as self-assessment. The following overview is an exploration into the work that has already been done in this area and demonstrates why more research into the specifics of asynchronous conversations and assessment is valuable for further investigation.

Applying a marking scheme to asynchronous conversations is challenging due to the process-oriented nature of the activity. Reviewing every posted message within the conversations is a time consuming activity for any instructor**.** In addition, **r**esearch shows that using process driven assessments of interactive tasks is difficult, time consuming and complicated (Fahy, 2001; Fahy, Crawford, Ally, Cookson, Keller, & Prosser, 2000). Anderson, Rourke, Garrison & Archer (2001) and Fahy (2001) also report inconsistencies in their own assessments of asynchronous conversation research due to the complex nature of the task. Yet, their assessment seems valuable for attendance and quality (Dennen, 2005).

> The National Research council cites four learning goals for educational pedagogy and curriculum targets: learner-centered; knowledge centered; assessment-centered; and, community-centered. The practice of creating a learner-centered environment has become a widely supported practice in the teaching world (Sharples, Taylor, Vavoula, 2007, p.403).

So how have instructors been assessing asynchronous discussions? The difficulties of assessing online conversations are observed within its design history. As previously discussed, the online conversations contribute to an interactive learning generated by participants through the creation of multiple perspectives among peers who write and publish within a community of practice (Hill, Song, & West, 2009; Miyake, 2007). Yet, some studies show that interactive online assignments that involve collaborative learning are a complex assessment task. Evaluating the conversations is challenging for a few reasons. The task is interactive in nature, collaborative and peer-generated. It is a mixture of journaling about experiences, creating a narrative writing voice, including details about life experience, discussing work in the field and theoretical knowledge. The mixture of these various content contributions creates a unique opportunity for assessment.

In the earlier days of distance education, the interactive conversational assignments were often monitored and measured by counting the amount of messages posted or by process driven rubric evaluations. These two types of evaluations are both top-down instructor driven assessments that constitute a summative evaluation. These evaluations are equally problematic. The counting of messages neglects concerns over quality, but does respond to low-level participants who are not meeting minimum requirements. Process-driven assessment practices involve using a rubric to evaluate units of analysis such as critical thinking, problem solving, collaborative contributions, content and synthesis (Bures, et al., 2010). These are also problematic due to the volume of messages and the instructor time required to read and review multiple conversations by multiple groups and potentially multiple courses. For this reason, some instructors suggest not evaluating asynchronous discussions at all.

Dennen (2005) argues that instructors found it necessary to assess online conversations to encourage participation. Harasim et al. (2000) agrees that reviewing

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the content of interactive dialogue heightens the level of participation, suggesting that there is value in the task. Similarly, Gilbert and Dabbagh (2005) state that creating guidelines for collaborative conversations is positive for engagement. Dennen (2005) argues that in a cross-analysis of participation and quality of content within asynchronous conversations, assessment and grade evaluations motivate participants to engage more completely in the online activity. Within the research on assessment of online conversations, studies report the need for a grading scale, but which practice works best and for which design? And how do we ultimately reduce the amount of time it requires for instructors to grade them?

Dermo (2009) stresses a point that is reinforced by others in the studies reviewed. There is a significant need to identify ways of reducing the amount of marking time necessary in the assessment of asynchronous conversations. Abrami, et al. (2011) state that the benefits of using asynchronous conversations as an interactive assignment is positive, and there is a correlation to the perspectives presented by both instructors and students. Therefore, investigating a reliable measure of assessment and one that reduces the time intensive nature of the activity is useful and valuable for this study.

The assessment of asynchronous conversations is time intensive, especially if a taxonomy of criteria is used to assess the dialogue. Difficulties in establishing favourable reliability in assessing conversations in studies such as Fahy (2001) suggest that reliability is still a challenge. Shraw (2010) discusses the need for reliability in assessment and virtual learning environments. Shraw (2010) provides a detailed assessment that scores critical analysis skills in web-based learning environments. His results reflect a positive benefit for using a critical thinking taxonomy with sub-criteria generated and tested in his study. But these types of assessment still fall under the top-down model of evaluation and are not student-centered in their approach.

The review shows that some studies approach the assessment of asynchronous conversations by measuring critical thinking skills, some measure student interaction, while others weigh student contribution as their criteria. Bures et al. (2010) and Lou et al. (2001) cite a few examples of assessment in online conversations that draw on methods reported by predecessors in online learning. They use critical content analysis to identify the sequence of interactions; who initiates ideas of value, who responds to whom and how participants weave the collaborative ideas of others. Using this method, an instructor investigates a key part of the discussion that involves more than one participant. This is seen as a type of dialogue examination. It also examines the sequence of knowledge building, often valued within a social constructivist approach (Berger & Luckman, 1966).

Further to these examples, Webb (1989) and Bonk & King (1995) discuss criteria for conversations in face-to-face interactions. Webb (1989) suggests drawing on criteria such as explanation and elaboration while Bonk & King (1995) use the generation of content, ideas and explanation as units of measurement. Bonk & King (1995) are potentially influenced by Henri (1991) who developed a five-step model of the online learning assessment: participation, interaction, socialization, cognition, and meta-cognition. Hara, Bonk & Angeli (2000) argue that phase-based critical thinking should be the basis of assessment for online learning environments. Early supporters of online discussion environments such as Gunawardena (1997), Kanuka & Anderson (1998) and Schrire (2004) also consider using co-constructed knowledge in their research and see it as the most important measure for assessment.

While these studies provide some examples of process driven assessments, there are relatively few studies that investigate online learning, asynchronous conversations and assessment practices (Abrami, et al., 2011; Dennen, 2005; Reeves, 2000; Kanuka & Anderson, 1998). Many of these studies that evaluate content contributions and collaboration of interpretations among peers discuss the assessment

as a resource intensive activity for instructors. Yet, this review does indicate that all the top-down assessment designs are slightly limited. It does, however, create an opportunity to review the literature on student-centered assessments and specifically how they function with asynchronous conversations. This study addresses whether this form of assessment could be used as an alternate method.

1.4 Asynchronous Conversations and Self-Assessment

Self-assessments and alternative forms of assessment are also possible in asynchronous conversations but are not as commonly used or documented. Yet, creating a task to encourage self-directed learning is connected to early literature on adult learning in the field of distance education. Knowles (1980) and Brookfield (1995; 1997) argue that learners in computer-assisted environments need to be self-directed, aware of the process and end result, and understand why the learning is valuable.

Alternative assessments have potential to be used as a summative evaluation or a learning *of* assessment (Stiggins, 2002; 2005) if the instructor incorporates them as a final grade for the assignment.   Self-assessments are also considered valuable as a learning *for* assessment (Stiggins, 2002; 2005) providing feedback opportunities for the instructor and learner. Correspondingly, self-assessments also imply an opportunity to use the assessment to produce a learning *as* assessment. This indicates a learning that is less focused on grading and more focused on the learning that is taking place for the learner (Chahine & Beatty, 2007).

Self-assessments are known as an authentic task as they support and actively engage the learner. Authentic activities need to be relevant across disciplines, provide layers of complexity and create opportunities for learners to engage at their level of ability. Herrington, Oliver & Reeves (2006) study the synergy between the task and the task assessment. They identify authentic learning as an activity that engages learners

actively using technology as a tool for improving competence in cognitive functions, information literacy and knowledge construction.

While encouraging self-directed learning may be one function of *authentic* assessment, such assessments are not common in online learning assessment. Buhagiar's (2007), Harasim (2000) and Dennen (2005) found that by making instructional practices benefit the learner from the process, demonstrates a shift towards a "new learning paradigm". The majority of classroom assessment practices are rooted in *summative* evaluation practices or assessment *of* learning (Broadfoot & Black, 2004). Self-assessments utilize a learning that shifts from a traditional top-down method of assessment practice to a student-centered one that encourages students to have an active voice in the process.

1.4.1 Meta-Cognition

Meta-cognition refers to a cognitive function that requires the learner to engage in thinking about their thinking processes. Meta-cognition includes thinking skills such as self-regulation, self-efficacy, reflective learning, self-evaluation and goal setting (Zimmerman, 2000; Schunk, 2001; Ross, Gray & Rolheiser, 2002; Bandura, 1997). Some studies refer to this type of meta-cognitive learning as a self-regulatory learning described as SRL. In the SRL process, the learner actively monitors, regulates and controls their own cognition (Azevedo, Moos, Johnson & Chauncey, 2010). Ideally, using SRL processes should strengthen a learners' confidence in future assignments.

Advocates of self-assessment and SRL processes often refer to Pintrich's theory of motivation citing a shift towards creating greater learner self-efficacy and autonomy when they are made active participants in their own learning, working to direct themselves towards their own goals (Pintrich, 2003). This theory belongs to motivational science and is part of the learning sciences emerging across disciplines and resulting in *The Journal of Learning Sciences*. Motivation is affected positively when

there is a vested interest in the activity, and in the case of grades and assessment, the learner is generally motivated to perform well.

In self-assessment and self-regulation, students engage in a self-evaluation of their strengths and weaknesses on a task, their progress, and/or their final product. Self-evaluation affects learning positively through developing greater confidence in their abilities, creating positive behaviours for future performance and greater self-efficacy thereby reducing future anxiety for the learner (Ross, Gray & Rolheiser, 2002).

Along with the development of self-efficacy, using self-assessments promotes self-directed learning and self-evaluation. Self-evaluations have been documented in educational psychology long before the mainstream acceptance of standardized I.Q. testing as a mean's of gathering evidence of student's cognitive abilities (Shrearer, 2012, p. 131). As discussed, this may attribute to a learning *as* assessment (Beatty & Chahine, 2007). Exploring self-evaluation in combination with asynchronous conversations speaks to a gap in the literature concerning online learning, asynchronous conversations and evaluation practices.

Reflective learning is an important component of meta-cognition and self-regulation. Research suggests that reflective thinking, student engagement and motivation is positive for learning (Piaget, 1973; Dewey, 1950; Zimmerman, 2000; Pintrich, 2003). Hickey (2007) adds that self-reflection is a method of assessment that extends learning beyond acquisition, to a learning that is *embodied* (Hickey, 2007). Self-assessments require students to participate in a task that involves self-examination through reflection and critical examination of academic, professional and/or personal improvement.

1.4.2 Instructional Practices

Using self-assessment as an instructional approach is part of a shifting paradigm that is becoming an educational practice across blended and online environments, and for teaching the 21st century learner (Prensky, 2006; Ross, 2006; Ross, Gray & Rolheister, 2002). Within the literature only a few studies report directly on the use of self-assessments despite the fact that the National Research Council describes them as "a positive vision for assessment" (Snyder, 2007, p.403). Even more limited is the scope of research using both asynchronous conversations and self-assessments.

There are several positive attributes of self-assessment in practice. Recent use of alternative assessments such as self-reflection are documented to help develop an ability to process information effectively (Winne, 2001) and to encourage self-efficacy (Schunk & Zimmerman, 2008). Black and Wiliam (1989a) suggest rich questioning about student learning, helpful feedback, verbalizing criteria, peer and self-assessment as components that "were shown effective in enhancing learning and achievement" (p.110). These skills diversify from typical summative evaluations and are more formative or 'authentic' in nature.

Hinetti and Weeden (2000) discuss the value of utilizing self-assessments with in-service training programs such as teacher-training communities. Both Schraw (2010) and Hinetti and Weeden (2000) explore how self-assessment skills such as self-reflection encourage reflective thinking in students and how these skills add value to self-monitoring. This process also allows for a formative assessment that helps both instructors and teachers.

Self and peer-assessment are common in student-centered assessment models as seen in many objectives of reform-based education initiatives (i.e. Quebec Education Programme), but are not a common practice in online learning assessment or classroom assessment despite studies such as Ross (2006) that suggest greater instances of learner

success in self-assessments.   Peat and Franklin (2002) suggest using computer-based learning in conjunction with self-assessments. The student-generated content of online conversations does align with a self-assessment evaluation as the tasks are suitable, creating a type of assignment and evaluation synthesis.

1.4.3 Gaps in the Literature

This section discusses the gap in the literature on self-assessment, undergraduate courses, teacher training courses and other levels of education, particularly in conjunction with asynchronous conversations and online learning. This area of research is slightly under developed and shows a need for more research on interactive assignments and assessment practice. It also relates how alternative assessments such as self-assessment place more emphasis on the quality of learning as described by Beatty & Chahine (2007) and less on the quantity of the grade.

To date, there are very few studies reported that focus on the combination of online learning, asynchronous conversational assignments and student self-evaluations. Boud and Falchikov (2003) advocate for alternative assessment within asynchronous conversations and state that meeting student needs should "contribute in some way to their prospective learning" (p.400). Boud and Falchikov (2003) as well as Beatty & Chahine (2007) are some of the few studies that show the benefit of using these activities together. Clearly, there is a need for more research to be conducted in this area of learning and instruction.

As self-assessments are typically classified as an alternative form of evaluation, they are not frequently used in classroom or online conversational assessments. Herrington, Reeves & Oliver (2006) cite that using self-assessments diversifies classroom assessment and increases opportunities for students to actively participate in a discussion about their learning and achievement.

Tan (2008) offers several examples of self-assessments used in conjunction with undergraduate courses but not specific to asynchronous conversations. His review of self-assessment practices among a number of undergraduate professors from a range of disciplines highlights several ways that active professors use self-assessments. His study discusses the gap in the literature in regards to self-assessments for the purpose of self-monitoring, accountability and understanding failure and success in education. A lack of studies presented specifically on asynchronous conversations and self-assessments speaks to the limited amount of data collected on these two learning activities.

As discussed in previous sections, online conversations are a complex collaborative and reflective assignment. Studies indicate that this type of assignment and its assessment are a complex evaluation task. This study will address two research questions. The first question relates to whether self-assessments are reliable in the context of online conversations as a form of evaluation. The second addresses whether self-assessment reporting supports the literature on collaborative and reflective learning. The research addresses two specific question a) are self-assessments tools reliable as a means of evaluating online conversations, and b) how do comments in the self-assessment responses align with the literature on self-assessment and online learning?

Chapter 2: Methodology
2.1 Introduction

This chapter discusses the choice of mixed method research for this study and explains the design created in order to answer the research questions. There are two sections. The first presents the methodological argument for the use of mixed method research. The second section provides specific details of the methods used in the research.

2.2 Methodology

As discussed in Chapter 3, the methodology of this study required responding to two research questions:

a) Are self-assessment evaluation tools a reliable means of assessment in online asynchronous conversations?

b) Do student comments in the self-assessment survey reflect the literature on self-assessment and online learning environments?

As the first set of data required quantitative data collection and the second required qualitative data, a mixed methodology was chosen.

2.2.1 Mixed Methodologies

To productively address the research problem, this study followed the philosophical design of pragmatic mixed method as presented by Tashakkori & Teddlie (2010). Tashakkori & Teddlie (2010) suggest that using mixed method will increase "the potential for credible and trustworthy conclusions" (p. 271):

> We believe that mixed methods research blurs the dichotomy between ''researchers'' and ''human problem solvers''. We believe that the mixed approach closely parallels everyday human problem solving in a way that neither qualitative nor quantitative methods alone can do (Tashakkori & Teddlie, 2010, p. 273).

This approach uses different paradigms to better solve the problem, opening up the process to find and deliver the appropriate result. Mixed method research is generally linked to a multiplicity of paradigms, theories and philosophical views; however, for the most part, mixed method fits within the philosophical domain of pragmatism. This is likely because the strength of mixed method is its ability to use two techniques to analyze a 'problem' or 'issue' for the purpose of resolving the challenge or contributing to a well-analyzed strategy. The disadvantage of the methodology is the lack of archetypes that arise from a wide range of diverse studies.

In their review of mixed method studies, Creswell, Shrope, Clark & Green (2006) describe reasons for using mixed method designs. They suggest that one of the reasons to use exploratory research techniques is to improve an intervention or develop an instrument. This is supported by Bensimon, Polkinghorne, Bauman & Vallejo (2004) who claim mixed method techniques are a way of improving contextual problems within the scope of teaching and learning. They see this as being positive and beneficial for improving instruction practices.

2.3 Research Design

The research was carried out using a two-part research design. The first part involved using two assessment tools (the rubric tool and the Self-Assessment Survey) to get quantitative data. The second part involved using the Self-Assessment Survey responses to get qualitative data.

2.3.1 The Assignment and Assessment Tools

The assignment and instruments used in the study were designed by the instructor of the course, and, the researcher who was the teaching assistant (T.A.) for

the course. The assignment was originally designed as an online component and complement to the practicum course for the purpose of creating opportunities for feedback, reflection and conversation. The assignment was designed to help students participate in their own assessment. The entire assignment lasted six-weeks for the duration of the practicum and comprised the following tasks:

Task One (T1) required all participants to contribute a quota of weekly messages for credit on the assignment. Participants 'posted' to their online group and created a series of threaded conversations. The participants generally posted in a few ways: They answered the intended questions set out by the instructor and they responded to each other's posts. The total number of messages per participant was roughly 12 each and produced a large volume of written text.

Task Two (T2) was a three-part assignment. Participants scored themselves on the rubric tool (Table 1), scored themselves on the survey (Table 2), and responded to the survey. This took place at the end of the six weeks and required participants to analyze their participation in the assignment. The rubric requested participants to place themselves on a level out of 5 (5-extending, 4-achieving, 3-developing, 2-beginning and 1-experimenting). The Self-Assessment Survey required participants to score themselves out of 15 and respond to 3 questions. The researcher also scored the participants using the same evaluation tools and guidelines.

2.3.2 The Rubric

The rubric tool was designed by the instructor and the researcher using criteria-based descriptors. The criterion was influenced by several studies on reflective practice, knowledge construction, critical thinking, problem solving and social presence (ie. Bures, Abrami, Barclay & Feenberg, 2010; Herrington, Reeves & Oliver, 2006; Garrison & Cleveland-Innes, 2005; Zimmerman, 2000; Gunawardena, 1997; Kanuka & Anderson,

1998; Henri, 1991). The rubric tool was used to evaluate participants, n=36, on the first assignment, Task One; however, only a sub-set of participant scores from the rubric tool were completed in Task Two, leaving n = 12. This rubric tool was used by the researcher and the participants to score the collected data.

Level 5	Student contributes consistently with informed and reflective messages demonstrating the development of their teaching competencies; displays a consistent ability to reflect upon his/her own practice; and, consistently builds and contributes to a healthy online community about their professional practice in the field of Education.
Level 4	Student contributes fairly consistently with informed and reflective messages demonstrating the development of their teaching competencies; displays a good ability to reflect upon his/her own practice; and, builds and contributes to a healthy online community about their professional practice in the field of Education.
Level 3	Student contributes some informed and reflective messages demonstrating the development of their teaching competencies; displays some ability to reflect upon his/her own practice; and, occasionally builds and contributes to a healthy online community about their professional practice in the field of Education.
Level 2	Student contributes inconsistently, or is poorly informed, or writes superficial messages in regards to the development of their teaching competencies; displays an inconsistent ability to reflect upon his/her own practice; and, rarely builds and/or contributes to the online community about their professional practice in the field of Education. Student links to the messages of others but does not effectively build on them (i.e. may write 'good job' messages without elaboration).
Level 1	Student contributes very inconsistently and/or superficial messages in regards to their teaching competencies; displays very inconsistent ability to reflect upon his/her practice; and does not build or contribute to the online community about the field of Education. Student does not link to other people's messages meaningfully, if at all.
Mark: /5	Overall Comments:

Table 1: 5-point rubric design for reflective, collaborative and content analysis (Rubric Tool; Score on 5)

2.3.3 The Self-Assessment Survey (SAS)

The second set of data collected was from the Self-Assessment Survey which consisted of quantitative scores and qualitative written responses. The self-assessment data collected, n = 12, was a sub-set of the original set of participants, n=36, due to the fact that the instructor of the course required them to submit by email and many of them were lost or incomplete at the end of their school term.

The SAS was a three-part assignment and evaluation tool. As a self-assessment tool, it required participants to a) score themselves using the rubric, b) score themselves on the survey and c) respond to 3 questions on the survey. The SAS was used by the participants and the researcher to attain a summative score out of 15 for answering the self-evaluative questions, and was used as quantitative data. Only the participants, n = 12, answered the self-evaluative questions through formative responses, and these were used as qualitative data.

Self-Assessment Survey
Consider your work in the reflective practicum. The expectation was that you would demonstrate your reflective practice (real critical thought about teaching practices, especially your own) as well as your development of teaching competencies through posting an initial reply to the question and then discussing with your peers. The criteria then can be summarized as: reflective practice, development of targeted teaching competencies (assessment, individual differences, LES implementing, reflecting on being evaluated), and contributing to each other's learning as professionals. **Questions:** 1. Did you feel you provided strong initial responses? 2. a) How well did you feel you contributed to the conversation? b) Can you give an example where you contributed well to the conversation? 3. a) How did you feel you did on this activity? b) What mark would you assign yourself? /15

Table 2: Self-Assessment Survey (SAS; Score on 15)

2.3.4 Data

Data was collected using the two assessment tools described above and served as both a summative and formative assignment to produce two separate data sets. All data was collected at Bishop's University with participants from the elementary education program. Participants were all enrolled in a teacher-training practicum course and in the third-year of their bachelor of education degree. Participants were recruited from undergraduate students from a variety of locations across North America

and ranged in age between 18 and 65 years old. All participants were working in situ for six-weeks during the assignment.

The data was collected and stored in the Moodle learning management system and locked with the instructor password. All data is kept for a period of five years. Participant information was kept anonymous by creating a series of code names during data analysis. Consent forms were completed and participants were informed that the statements made would be collected from written work for future publication or quotation.

2.3.5 Analysis

Analysis of the data was a two-step process. The quantitative data from the two instruments described above was analyzed using using two approaches: (1) percentage of agreement and (2) Wilcoxon Signed Rank Test to determine reliability. The qualitative data from the SAS responses was analyzed using a thematic analysis approach (Creswell, 1998). The results of these are presented in chapters 3 and 4.

Chapter 3: Quantitative Data
3.1 Introduction

The question addressed through quantitative analysis was: Are self-assessment evaluation tools a reliable means of assessment in online asynchronous conversations? Two quantitative tools were used to test for reliability. The first method used a percentage of agreement that helped to identify how often the raters agreed. The second, the Wilcoxon Signed Rank Test was a non-parametric equivalent of the t-test that helped to determine if there were differences between groups.

3.2 Results
3.2.1 Rubric

Twelve participants were part of this research study. Attaining rater agreement supports the use of the rubric as a measure for self-assessments in this study using an online conversational assignment. All the ratings on the rubric for the 12 participants were either level 3 or 4. All ratings in the study received a medium to high level on the rubric scale. Additionally the participants agreed 50% of the time with researcher scores. The remaining 50% showed disagreements with a slight variation of one point on the rubric scale. This indicates that there was rater agreement 50% of the time and the remaining 50% had scores that were favourable as they were only one level apart.

The Wilcoxon Test also indicated that the two groups were not significantly different from each other. The statistics showed $Z = 0.82$, and the effect size statistic was small $p < 0.41$, $R = 0.23$. This suggested that the rater scores are closely aligned with significant levels of rater agreement.

Additionally, in four cases, Rater 2 showed higher scores than Rater 1. In 2 cases Rater 1 scored higher than Rater 2.

3.2.2 The Self-Assessment Survey (SAS)

The percentage for the survey showed 25% of instances of rater agreement. The scores for the SAS were on a larger scale than the rubric so differences in rater agreement were slightly larger than the rubric. However, four scores were only one point difference on the scale. Three scores were two points difference and only two scores were three points difference. There were no cases of scores that had a difference greater than three.

The Wilcoxon Test was applied to the Self-Assessment Survey which had scores out of 15. The statistics scores was Z = 1.7, the effect size statistic was small p < 0.93, R = 0.49. This shows that the groups were significantly close together.

Additonally, Rater 2 had seven instances of scoring higher than Rater 1.   Only two scores were scored higher by Rater 1.

3.3 Discussion

As seen in the literature review, there are no clear norms or best practice for the assessment of online conversations. Similarly, there are no clear norms for using self-assessments in combination with online conversations. The instructor marking time is resource intensive and problematic for this type of evaluation despite the valuable nature of the assignment.

The results of the quantitative analyses showed that rater agreement and reliability of the assessment tools was satisfactory. The effect size for both the rubric and SAS tool were small indicating a satisfactory level of reliability. The rater agreement for the rubric assessment tool was 50% with only small variations in scores for the remaining 50%. The SAS showed rater agreement for 25% of cases. The remaining

scores varied by only one point, 33.3% of the cases. The scores varied by two points, 33% of the time. For both tools there were good levels of reliability. The rubric indicated a high-level of rater agreement and despite the small percentage of rater agreement for the SAS, the remaining scores showed very small levels of variance. This showed that rater agreement was satisfactory with a small variance accounted for when using larger scales for grading. Rater agreement for both the rubric and the SAS contributed to the reliability of the tool.

For the rubric, Rater 2 scored higher than Rater 1 in four of the cases. This suggests that the participants scored themselves slightly higher by 33.3%. Rater 1 scored higher than Rater 2 in 2 cases suggesting that the researcher scored the participants higher 17% of the cases. Participants scored themselves higher or the same as the researcher 83% of the time.

In the Self-Assessment Survey, there was rater agreement for 25% of cases but with a small variation in scores for the remaining 75%. Four cases were within one point variance and three cases were within two points. In sum, the slight variance accounted for 41.6% of scores within 2 points of difference on the 15-point scale of the SAS. Only two scores showed a difference of three points, amounting to 17% and there were no cases with a greater variance than three points. Similarly to the rubric, this suggests that participants scored themselves slightly higher or the same as the researcher 83% of the time.

The SAS indicated that seven cases were scored higher by Rater 2. Similarly to the rubric, this showed that participants scored themselves higher or equal to the researcher 83% of the time. The researcher scored higher 17% of the time on both assessment tools. These results show that participants scored themselves slightly higher if not on par with the researcher most of the time on both assessment tools.

Chapter 4: Qualitative Data
4.1 Introduction

This chapter used a qualitative examination of students' responses from the Self-Assessment Survey (SAS) to explore the second research question: Do student comments in the self-assessment survey reflect the literature on self-assessment and online learning environments?

The SAS is described in Table 2 of the previous chapter. Of the n=36 students enrolled in the course only 12 provided SAS responses and these 12 formed the corpus of data analyzed. The themes described by participants in the self-assessments echoed two major themes identified in the literature, 'Reflective Learning' and 'Collaborative Learning'. These themes along with their sub-themes are discussed below.

4.2 Thematic Analysis: Reflective Learning

Reflective learning is explained as a meta-cognitive skill that expands beyond thinking about thinking to include instances of self-monitoring, adaptation, and self-reflection (Zimmerman, 2000; Schraw, 1998). These meta-cognitive skills fall under the larger umbrella of self-regulation described in the literature as the ability to control one's cognitive development (Henri, 1992). Self-regulatory skills are defined as blending elements of knowledge, motivation and meta-cognition. Reflective activities such as self-assessments are a way to encourage self-regulatory skills including reflective learning for learners to develop their self-monitoring skills (Schraw, 2010; Hinetti and Weeden, 2000), self-efficacy development (Schunk & Zimmerman, 2008) and self-reflection (Hickey, 2007). Herrington, Reeves & Oliver (2006) suggest that using self-assessments for reflective thinking enables students to participate in their learning by strengthening their self-evaluative skills and diversifying typical classroom assessments.

4.2.1 Looking Back to Move Forward

This sub-theme was observed in the participant SAS responses and referred to instances when participants described thinking about an event or experience and adapted their thinking for future action. This relates to a specific form of self-reflection that indicates self-monitoring and self-regulation.

This sub-theme of the reflective learning analysis presented itself in the literature as a function of self-reflection as it suggests the evaluation of the participant's performance to adjust strategies for future success (Zimmerman, 1998; Schunk, 2001). It is also supported as a function of reflective learning as it suggests the development of their own learning construction for future success (Hickey, 2007; Gunawardena, 1997; Kanuka & Anderson, 1998; Schrire, 2004).

Examples of this category are indicated by participants as they self-reflect and then suggest how they could potentially improve:

"…reflected on what I did or could have done…"

"…I continued to think about her post and what other things she could do…"

"…I had explained my lesson to the girls along with a reflection. In the reflection, I mentioned what I would like to work on. After receiving feedback from two of my peers, I came back to the conversation and explained a successful strategy that I had tried with my associate…"

"…That night I went home and thought about what we had discussed and really reflected on what we had talked about. I thought about when they said and made sure I also thought about myself, the classroom and students. Most of the times I would come back the next day and discuss more with my associate teacher and apply what we had talked about the day before…"

These self-assessment observations support the process of reflection. They also suggest a direct or indirect sense of planning a strategic goal for future action.

4.2.2 Explaining and Re-examined Experiences

This sub-theme refers to instances when participants discussed the importance of re-examining their experiences. The recounting of their experiences produced a type of reflective learning that participants expressed as being valuable to their thinking. Reviewing an event is a component of self-reflection (Zimmerman, 1998; 2000) that creates an opportunity for the learner to re-examine their role or behaviour.

'Explaining and Re-examining Experiences' is a component of self-reflection and it also shows instances of self-regulation as the learner recognizes new information based on the re-telling of the events. This self-regulatory component is described as a form of goal setting as the learner takes more control over their performance (Schunk, 2001).

Examples of this sub-theme are observed by participants when the refer to how they reviewed an experience:

"...When posting my initial post and following responses to my team mates I reflected on what position I took and about the best suggestions or ideas I could provide them with..."

"...I can honestly say that when I did reflect on these experience it forced me to slow down and really think about what had happened in specific situations and forced me to think about how I could improve or implement new strategies to make my unit or classroom management for example more effective...."

"...I wrote a lot and had examples of what I was trying to explain and found I touched on some reflective aspects of the situation..."

"...We began by giving each other a description of our classroom situations, and providing each other with examples of teaching techniques and strategies we have been implementing..."

The highlighted quotations describe how participants reviewed a situation or issue and helped to build on their learning.

4.2.3 Reflecting on Learning that Resonates

This sub-theme refers to authentic learning that took place as participants reflected on their experiences or learning and saw the applicable to a real world situation. This sub-theme is viewed in the literature in components of self-reflection as well as a skill related to applying learned knowledge to practical application. This is seen as being valuable to the learning process (Boud and Falchikov, 2003) and a component of authentic learning.

The 'Reflecting on Learning that Resonates' category suggests a learning that extends beyond the physical classroom space. The relationship of applying 'learning' to the real world practice is an example of authentic learning as described by Herrington, Oliver & Reeves (2004). Relaying instances of learning that extends the classroom is also valued in the literature as one of the most important functions of self-assessment practices (Tan, 2008). Examples of this sub-theme are noted by participants:

"...I reflected on the issue at hand and connected it to my practice and demonstrated that I was growing in the professional competencies..."
"…More reflecting and evaluating came after I conversed with my peers…"
"...If I were to reflect upon what I contributed to the online activity, I think the conversation with Alysia about individual difference and how it can be fun, exciting and interesting to adapt the lesson plan to suit their learning needs..."

"...After receiving feedback from two of my peers, I came back to the conversation and explained a successful strategy that I had tried with my associate..."

"...I took this time to reflect on my own experience in the classroom and often asked my associate teacher to provide me with some ideas that I could then relay to the other member(s) in my group..."

These descriptions indicate how participants engaged in learning from the assignment and their reflective practice, and then transferred this learning into their teaching practice.

4.2.4 Self-Evaluation

This sub-theme related to instances where participants self-analyzed themselves in their self-assessments. The evidence was indicative of reflective learning and related to components of self-reflection, self-critique and self-regulation (or self-monitoring). This category found participants offering a critical view of their role, behaviour or feelings about their own performance.

The 'Self-Evaluation' sub-theme is discussed in the literature in a few ways. Hara, Bonk & Angeli (2000) discuss the importance of critical thinking in online environments. This theme suggests critical thinking but extends to a type of self-analysis and reporting that required the learner to critique themselves. This sub-theme is supported by proponents of self-assessment who refer to it as a means of self-reporting for improvement in practice. Self-evaluation is potentially a meta-cognitive skill (Henri, 1991) and is implied in the self-assessment process (Black and Wiliam; 1989a). The development if this reflective theme or skill also suggests self-evaluative skills that could lead to a learning that contributes to further learning (Boud and Falchikov, 2003). Examples of this are witnessed by participants:

"...Every week, I would read and respond to my peers reflections with a few comments, suggestions or questions. However, I feel as though this is an area of weakness for me as I did not go as deep in my feedback as I could have..."

"…I could have elaborated more on the reflective aspects of the situation…"

"…I could have set a more reflective and interactive tone that made it easier for others to respond to…"

"...Personally, I feel that my initial responses to the questions and topics were decent. My answers reflected my opinions, thoughts, examples from this practicum or from other teaching situations. On the down side, my responses had little or no connection to texts or readings..."

"...Honestly, I feel I did an okay job on this activity, it was not great. Looking back on my posts I feel that I could have backed my posts up with more theory, I simply went with experiences, ideas and suggestions..."

"...Overall I think I did just what was expected of my but did not exceed any expectations..."

"...I think that I did a good job at contributing and reflecting in this assignment, however, I feel that I could have done better and tried to dig deeper with some of my responses..."

These highlighted quotations described moments where participants analyzed their performance in the assignment. They self-critiqued their own involvement and showed examples of reflective learning.

4.3 Thematic Analysis: Collaborative Learning

Collaborative learning themes refer to instances where learners worked among peers interactively towards collective goals. Collaborative thinking, explanation, communication and reflection were observed as being supported by asynchronous conversations in online environments (Hiltz, Turoff & Harasim, 2007). This theme is

valuable to this study given that collaborative learning among social networks is linked to positive knowledge retention and motivation (Stahl, 2005; Bandura, 1975).

Peer interaction and inquiry to solve common problems has been a positive learning approach within multiple disciplines (Pintrich, 2003). Collaborative discussions and peer interaction are described as beneficial for the development of critical thinking processes. Critical thinking skills are also seen as integral to learning self-regulation (Henri, 1991). Using peer interaction and inquiry as the basis for learning has been referred to as a cognitive constructivist activity in online environments (Garrison, 1993) and deemed advantageous for the development of collaborative thinking skills (Harasim, Hiltz, Teles, & Turoff, 1995).

This study linked the theme of collaborative learning suggested in the literature and related it to the self-assessment data. The collaborative learning thematic analysis related to evidence of peer learning and the sub-themes will be explored in the following sections.

4.3.1 Sharing Situations

This theme relates to instances where learners collectively worked through a situation by explaining and exploring information together. Sharing situations refers to reports by participants of how their learning developed as they shared an event or situation with their peer(s). This theme relates to learning concepts that value interactive, social environments.

Advocates of collaborative learning highlight the importance of interaction and knowledge exchanges through the discussion of parallel events (Hiltz, Turoff, & Harasim, 2007). These advocates also suggest that collaborative learning improves in online environment for such reasons. This sub-theme is supported by the concept that

learners develop meaning when experiential knowledge becomes explicit (Snyder, 2007; Baran and Cagiltay, 2010). This explicit knowledge exchange of real life situation-based experiences suggested knowledge development and knowledge co-construction among peers. Exploring peer feedback is valuable to the collaborative process (Herrington, Oliver & Reeves , 2005).

The 'Sharing Situations' sub-theme is frequently referred to in the literature as a pillar of collaborative learning for the building and sharing of ideas. Participants expressed how communicating their situations helped each other:

"...just having someone to talk to about a similar issue was extremely helpful..."
"...we shared our classroom situations and tried to find solutions by comparing our classrooms..."
"...I feel that my contribution about my concerns and struggles made it easier to relate to each other because we both had the same concerns at times..."
"...I don't feel we were afraid of sharing our situations because we all wanted to help each other..." (ESL student)
"...Every week, I would read and respond to my peers reflections with a few comments, suggestions or questions..."
"...For example, at the beginning of our practicum, Skylar and I were both dealing with extremely talkative students. We began by giving each other a description of our classroom situations, and providing each other with examples of teaching techniques and strategies we have been implementing. As the weeks went on, we continued to comment on our situation and offer each other additional support and strategies. Just having someone to talk to about a similar issues was extremely helpful for me..."
"...I feel that when I could and when I found appropriate I shared ideas, tricks and suggestions to my peers. Most of the time Krista and I were going through similar situations so we were able to help each other out. We shared our

classroom situations and tried to find solutions by comparing our classrooms. I feel that the contributions made following our initial post were very helpful. They made it possible for me to continue reflecting on my initial post but also about ways to help others. An example of this would be in Krista's post for week four on individual differences..."

These quotations showed evidence of how valuable the exchange of information was to participants. The selected responses supported collaborative learning as a beneficial activity for social knowledge construction.

4.3.2 Self-Awareness Among Peers

This sub-theme refers to instances where participants reported being conscious of how their contributions affected their peers.   The importance of this sub-theme is in the participant's awareness of their audience and how this influenced their thinking or how it affected their collaboratively communicative in their conversations.

The 'Self-Awareness Among Peers' category relates to how knowledge is co-constructed and information is collectively built in inquiry based environments (Harasim, Hiltz, Teles, & Turoff, 1995). This form of collaborative self-awareness among peers is a reflective behaviour seen as valuable to self-regulation and self-reflection (Zimmerman, 1998; 2000; Bandura, 1977) as well as collaborative learning and social cognitive processes (Garrison, 1993). Similarly to the theme on sharing situations, the building of knowledge through collective communication results in greater meaning making as seen in other collaborative learning environments (Piaget, 1954; Bandura, 1972; Pintrich, 2003). Examples of the self-awareness among peer interaction is exhibited here:

"...I knew that my peers would be reading my responses so I felt like I needed to put in effort into my work"

"I tried to connect my ideas to others posts..."

"...I feel that when I could and when I found appropriate I shared ideas, tricks and suggestions to my peers..."

"....Amy was faced with a situation and needed feedback..."

"...I feel that my contribution about my concerns and struggles made it maybe easier to relate to each other because we both had the same concerns at times. It was a way to open up and not be afraid of judgment because we were all in the same boat..."

"...I feel that Krista was a great team member, we were able to have solid conversations, online and on the phone. She responded and helped me when I posed questions. Her comments were constructive..."

"...I feel as though I contributed to the best of my ability. As I previously mentioned I always posted my initial response on time and often had to wait for the other members of my group to post or respond to my post (one member of the group never posted and the other member rarely responded and was later with their posts). Although it was not always easy to find time in the hectic weeks of the practicum, I feel as though I tried my best and always put in an effort to respond to the other member in my group, even if it meant responding towards the end of the week..."

"...I believe that I shared and contributed on a consistent basis. I like to think that my responses that I posted were reflective and helpful for the other member(s) in my group...."

"...I don¹t feel I contributed that well to conversation mostly because the posts we were all sending were not formed in a way that welcomed discussion. I commented a couple times on others comments but no one every responded to my comments beginning an discussion. At one point I offered Marissa some advice and tools that I found useful from my own

experience and another time I offered my opinion to a situation but since no one built on my additions or commented I didn't feel I obliged to continue on in the discussion..."

These highlighted responses from participants indicated a sense of self-awareness within a peer group. Participants were conscious of their actions and how these actions affected their peers.

4.3.3 Looking Back to Move Forward

This sub-theme refers to instances where participants learned from looking back on their experiences as well as the experiences of their peer group. As the group collectively shared their experiences, participants were able to reflect on their own situations as well as the situations of others. They then apply this retrospective insight to improve and contribute to strategies and solutions.

This sub-theme is a reflective thinking skill as seen in self-reflection (Zimmerman, 1998; 2000) and self-regulation (Bandura, 1977) but is also supported in the literature on co-construction of knowledge and social cognitive construction (Garrison, 1993; Hiltz, Turoff, & Harasim, 2007). This type of knowledge construction is also enhanced by 'listening' to multiple perspectives that are collectively understood (Hill, Song, & West, 2009; Miyake, 2007).

This category 'Looking Back to Move Forward' is described by participants as a retrospective on past events, among peers, to produce collective solutions for the future. The following are examples of reflective thinking skill in combination with elements of peer interaction:

"...I tried to incorporate examples into my initial responses to help the members of my group to better understand my situation and provided them with an

explanation of what I did and things that I would change if implementing the lesson for example into the classroom again...”

“I ...came back to the conversation and explained a successful strategy that I had tried...”

“...I took somewhat of a leadership position among the group but could have taken that farther to include formatting my entries in a way that better included my peers...”

“...I think the conversation with Mia about individual differences and how it can be fun, exciting and interesting to adapt the lesson plan to suit their learning needs will help us to obtain a better understanding of ourselves as teachers and our students. As time goes on special needs will be a huge part of our classroom and the number of IEP will keep increasing this is something that we will have to improve on constantly and being informed of the student[1]s strengths and weaknesses will help us succeed

in this area....”

These responses from participants described reviewing the experiences of others and developing strategies for implementation. This supports the concept of knowledge building and showed how individuals are able to capitalize on this information to develop solutions for future action.

4.3.4 Self-Evaluation Among Peers

This sub-theme referred to instances when participants critiqued and analyzed their performance among their peers. Similar to how participants were self-evaluative in their personal self-reflection, this category expands on the self-reflective component to include how participants analyzed their performance within the peer interactions.

As discussed, self-evaluation is an important aspect of self-assessment and participation in their own learning (Herrington, Reeves & Oliver, 2006). This form of self-evaluation is central to themes within self-assessment such as the development of critical thinking skills (Henri, 1991), self-reporting (Shearer, 2011) and self-regulation (Zimmerman, 1998; 2000). It is also indicative of collaborative learning as it relates to moments that include peer interaction and learning.

The sub-theme of 'Self-Evaluation Among Peers' is seen in the self-assessments in relation to how their performance affected their peer group:

"...I don't feel I contributed that well to the conversation..."

"I was not as helpful to my group as I could have been"

"...I feel I did ok on this activity however I could have definitely done better and contributed more the group discussions. It is definitely a good way to get support/suggestions and feedback from other people going through the same experience..."

"...I think that most of my contributions to the online community were helpful for the peer I was writing it to. My reply to Alysia[1]s Week 2: Reflection to evaluated lesson was, I think, was one of my best contributions..."

"...Overall, I think I did pretty well on the entries I did contribute. I reflected on my practice, developed Competency 11 most of all, and contributed to my peers[1] learning experience..."

"...When I did contribute to the online community, I wrote initial messages which were reflective and demonstrated that I was growing in my professional competencies. I connected the messages I did write to my practice and when I participated in the online community, I gave comments which could have been helpful for them in their practice..."

"...I feel that I contributed well to the conversation. I tried to connect my ideas to other`s posts; however, I only did one response per week..."

"...I don¹t feel my group helped in opening up discussions that I could contribute in but then again I did not either. Overall I think I did just what was expected of my but did not exceed any expectations..."

These quotations describe moments when participants reflected on their individual performance but from the perspective of a community member.

4.4 Discussion

Reflective learning and collaborative learning themes were found in the Self-Assessment Survey and in the literature on online learning and self-assessment. This alignment between these themes presented in the literature and the data expand on the importance of such skills.

As seen in the literature, developing reflective learning themes such as 'self-evaluation' increases critical thinking abilities and helps provide feedback mechanisms for understanding the potential failures and successes in learning and instruction.

Collaborative learning themes like 'Sharing Situations' and 'Self-Awareness Among Peers' support the emphasis in the literature that these sub-themes enhance co-construction of knowledge building. The sub-themes are important for identifying student-generated sub-themes of reflective and collaborative learning.

Within the reflective and collaborative themes two sub-themes drawn from the self-assessment survey overlapped. Both the reflective themes and the collaborative themes saw evidence of 'Self-Evaluation' and 'Looking Back to Move Forward'. These two areas seem to emphasize impactful learning from participants that drew on solving problems and finding potential solutions to issues faced in the field, both individually as well as collectively.

The qualitative data complements the quantitative results by developing sub-themes within the self-assessment process and analyzing how the literature themes related to evidence in practice. The themes described in the qualitative results showed evidence that key learning strategies and meaning making occurred mostly when participants utilized reflection and collaborative communication for building solutions, self-evaluation and self-analysis.

The relationship between assignment and assessment can result in a form of task 'synergy' as described by Herrington, Reeves & Oliver (2006) and as a learning *as* assessment described by Beatty & Chahine (2007). The results of the thematic analysis showed evidence that the self-assessment practice was complementary to the assignment as it emphasized key points made in the literature review. This synergy between assignment and assessment is valuable for future instruction.

Chapter 5: Discussion

5.1 Results

As reviewed in the literature, conversation-based learning is used to benefit and encourage collaborative and self-regulatory processes. The literature described how developing skills such as collaborative learning and reflective learning helps to foster problem solving and critical evaluation as seen in models of self-regulated learning. These skills are linked to success in learners. The literature also explored how many in-class assignments rely on top-down methods such as summative assessments. Leading research in assessment demonstrates a positive shift towards student-centered assessment (NRC, 2012). Despite the theoretical and psychological understandings surrounding the benefits of encouraging self-regulated learning, there are fewer studies on self-assessment.

The first part of this research involved using a rubric and the SAS to investigate whether reliability of the tools was possible. Two ways of investigating the quantitative data comprised of using percentage agreement and a Wilcoxon Signed Rank Test. The results showed small effect sizes for both assessment tools, indicating a good degree of reliability. The percentage agreement was higher in the rubric despite both tools having a satisfactory degree of reliability. Participants generally scored themselves slightly higher, except in a few cases where the researcher scored the students higher. Interestingly, these results do align with other studies on self-assessment and high school students (Ross, 2006; Ross, Gray & Rolheiser, 2002). Also interesting that the two scores that were rated higher by the researcher were cases of two high achieving students. This is similar to Ross (2006) who reported instances of high achievers scoring themselves lower than the instructor.

The quantitative findings suggested a good level of reliability and rater agreement describing the potential benefit of using self-assessment reports as a means to evaluate the conversation assignment and, subsequently reduce instructor summative marking time. This means that an exchange *of* summative assessment *for* a more formative assessment in the form of feedback to participants, is possible.

The second part of this research was to investigate collaborative and reflective learning present in the self-assessments responses. This was meant to inform the self-assessment process and explore how the themes related to the literature on self-assessment and online conversations. The qualitative question examined collaborative and reflective learning, following suggestions from the research on theories of student-centered and peer-based learning. In combination, these learning skills transformed participants view by seeing perspective that influenced their thinking as they shifted their gaze towards future practice.

Exercises that develop reflexivity and reflective thinking skills are valued within the current literature on educational psychology. These concepts date back to corner stone educational research theorists such as Dewey, Vygotsky and Zimmerman. These results showed the ways in which peer-based conversational activities allowed participants to learn from their own explanations of their individual experiences, the experiences of others, and thinking on strategies to improve their future performance in practice.

5.2 Limitations of the Study

The limitations in this study were mostly in its small scale. A larger scale sample would have had more scores to draw from and potentially strengthen reliability and rater agreement. Potentially using other statistical tests such as Cohen's Kappa to draw on inter-rater reliability would strengthen the quantitative results. Other raters would have also improved the diversity of scores. In regards to the number of participants in

this study, the results would have more depth if they had completed their self-assessments. This challenge was due to a requirement by the instructor of the course to submit the SAS by email which led to incomplete responses, leaving only a small sub-set of the original sample group. This could be avoided in the future by making participants complete the SAS in class or synchronously.

5.3 Implications for Future Research

For future research it might be worth investigating larger samples of participant assessment and use similar variables to the ones found in this study. In regards to self-assessment, investigating different disciplinary groups or comparing types of learners might be useful. Also, comparing groups of high achieving students to low achieving students may offer some further insights into the behaviours within the practice. In regards to the conversational online learning, perhaps providing roles such as a synthesizer and wrapper within the groups would increase learner engagement (i.e. Wise & Chiu, 2013). Role development is developing in other inquiry and student-centered learning environments. Further to these suggestions, developing more research on interactivity in peer-based learning environments, self-reporting and student-centered assessment using mixed methodologies might prove valuable to observe the impact on learner meaning making, satisfaction, performance as well as engagement.

5.2 Conclusions

This study investigated the assessment of asynchronous conversations. It suggested that the content assessment of this type of online activity is an intensive marking and review process for instructors or markers. As discussed, the literature on asynchronous conversations is rooted in theories on online learning, self-directed learning, peer-generated content and reflective thinking skills. The literature on

asynchronous conversations and self-assessment is slightly limited and this small study was meant to add one voice to this area within the field of education research.

The results from the study suggest that self-assessments could potentially be used instead of T.A scores, or in combination with other scores. Using student-centered and generated marks is reliable with some instances of the students scoring themselves slightly higher. It is this study's suggestion that using a student-centered assessment in combination with asynchronous conversations is reliable and improves opportunities for greater self-efficacy by using collaborative and reflective learning.   In this study, it was possible to reduce instructor or T.A. marking time and summative assessment by using self-assessment tools.   It is the researcher's suggestion that self-assessments are a positive learning assignment in combination with online blended learning environments such as asynchronous conversations.

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